NOTICE INVITING EXPRESSION OF INTEREST (EOI)

EOI NO. RCIL/SR/ERS/2023-24/EOI/8 DTD. 19.01.2024

Expression of Interest (EOI)

For

"DESIGN, IMPLEMENTATION AND COMMISSIONING OF SMART DATA CENTER AT DIGITAL UNIVERSITY CAMPUS"

Issued by:

RailTel Corporation of India Ltd *(A Mini-Ratna PSU under Ministry of Railways) Kerala Territory Southern Region, 1st Floor Eastern Entry Tower Ernakulam Junction Railway Station Ernakulam, 682016*

Disclaimer

RailTel Corporation of India Ltd. (herein after called the RailTel) has prepared this Expression of Interest (EOI) document solely to assist prospective bidders in making their decision of whether bid or not to bid.

While the RailTel has taken due care in the preparation of information contained herein and believes it to be accurate, neither the RailTel or any of its Authorities or Agencies nor any of their respective officers, employees, agents or advisors give any warranty or make any representations, express or implied as to the completeness or accuracy of the information contained in this document or any information which may be provided in association with it. This information is not intended to be exhaustive and interested parties are required to make their own inquiries and do site visits that it may require in order to submit the EOI. The information is provided on the basis that it is non– binding on RailTel, any of its authorities or agencies or any of their respective officers, employees, agents or advisors. The RailTel reserves the right not to proceed with the bidding/EOI process at any stage without assigning any reasons thereof, or to alter the timetable reflected in this document or to change the process or procedure to be applied. It also reserves the right to decline to discuss the EOI further with any party submitting an EOI. No reimbursement of cost of any type will be paid to persons or entities submitting the EOI

EOI NOTICE

RailTel Corporation of India Limited,
Kerala Territory Office,
1st Floor, Eastern Entry Tower,
Ernakulum South Railway Station,
Ernakulam-682016

EOI NO. RCIL/SR/ERS/2023-24/EOI/8 DTD. 19.01.2024

RailTel Corporation of India Ltd., (here after referred to as "RailTel") invites EOIs for Selection of Partner for "DESIGN, IMPLEMENTATION AND COMMISSIONING OF SMART DATA CENTER AT DIGITAL UNIVERSITY CAMPUS" (here after referred to as KUDSIT), from RailTel Empaneled Business Associates for exclusive TEAMING ARRANGEMENT for the following

"DESIGN, IMPLEMENTATION AND COMMISSIONING OF SMART DATA CENTER AT DIGITAL UNIVERSITY CAMPUS "

The details are as under:

KEY INFORMATION

Date of EOI Floating	19-01- 2024
Last date for submission of Bids against EOI	23-01- 2024 at 15:00 Hours
Opening of Bids received against EOI	23-01- 2024 at 15:30 Hours
Number of copies to be submitted	Single stage (Single Packet System)
EOI document cost incl tax (non refundable)	Nil
EMD at the time of submission of bid	Rs. 8,50,000/-
Bid Validity Period	180 days from the date of Bid opening
Bid Submission Mode	Through E-mail to – **ers.eoi12@railtelindia.com**

Note: RailTel reserves the right to change the above dates at its discretion. Bids received after due date and time will be summarily rejected.

Sd/-
(JGM/TERRITORY MANAGER)
RailTel/Kerala Territory

Important information for Bidding

Earnest Money Deposit (EMD)

Validity of the EMD: The EMD shall be valid till the finalization of end customer RFP/RFP i.e award of order and till submission of Performance Guarantee of requisite value.

Return of EMD: The EMD of the successful BA shall be adjusted towards PG, as applicable. EMD of unsuccessful Bidders will be refunded by Railtel on finalizing the EoI.

Bids without EMD will be summarily rejected.

The EMD should be in the favor of RailTel Corporation of India Limited payable at Secunderabad through online bank transfer. The Partner needs to share the online payment transfer details like UTR No. date and Bank along with the proposal.
RailTel Bank Details for Submission of EMD / PG:
Union Bank of India, **Account no.327301010373007, IFSC Code: UBIN0805050.**
Demand Draft shall be submitted in favor of RailTel Corporation of India Limited payable at Secunderabad.
Eligible Business Associates are required to direct all communications related to this Invitation for EOI document, through the following Nominated Point of Contact persons:

Consortium Arrangement .

The Consortium Arrangement is allowed as per the Extant Rules of Rail Tel Corporation Limited and the Final Customer .Wherever the BA is referred it shall mean the Consortium Partner as well as the BA/SI as applicable.

Contact Details for this EOI:

Level: 1 Contact: Shri. Anish Rehman, Senior Manager/MKTG/Ernakulam

Email: arehman@railtelindia.com Contact: +91-9704659404

Level: 2 Contact: Shri. M. Pazhanivelan, Jt. General Manager/Ernakulam

Email: pazhani@railtelindia.com Contact: +91-9003144207

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Note to Bidders :

1. The response to EOI is invited from **Eligible Empaneled Partners of RailTel only.**
2. All the document must be submitted with proper indexing, page nos and signed in every pages
3. This is an exclusive pre-RFP partnership arrangement with empaneled business associate of RailTel for participating in RCIL/end Customer RFP. Selected partner's authorized signatory has to give an undertaking that they will not submit directly or indirectly their bids and techno-commercial solution/association with any other Organization once selected through this EOI for pre- bid teaming arrangement (before and after submission of bid to prospective customer Organization by RailTel). **This undertaking has to be given with this EOI Response.**
4. Transfer and Sub-letting: The Business Associate has no right to give, bargain, sell, assign or sublet or otherwise dispose-off the Contract or any part thereof, as well as to give or to let a third party take benefit or advantage of the present Contract or any part thereof.
5. Bidder has to agree to comply with all OEM technical & financial documentation including VALID REGULATORY APPROVALS/ CERTIFICATIONS/ MAF, Technical certificates/others as per end-to-end requirement mentioned in RCIL/end Customer's RFP as applicable and further issued corrigendum's as mentioned below:

End customer RFP Ref. No.	KUDSIT/0051/Smart Data Center/2023-24
Date of floating	**29.12.2023**
Due date	**26.01.2024**
Floated on portal	e-Procurement Portal System of Govt of Kerala **https://etenders.kerala.gov.in/**

6. Bidder also to undertake to submit valid MAF as per format. The selected BA has to provide VALID REGULATORY APPROVALS/ CERTIFICATIONS/ MAF from the OEM in the name of RailTel for bidding in the concerned RFP of KUDSIT, if their proposed solution is quoted to the customer as applicable and required.
7. The selected bidder will have to accept all Terms & Conditions of KUDSIT RFP on back-to- back basis, wherever applicable.
8. Any corrigendum(s) issued by KUDSIT against pertinent RFP shall be the part and scope of this EOI document on back-to-back basis and the BA's shall be on the lookout of corrigendum's issued from time to time by RCIL & KUDSIT, in the interest of their own Bid.
9. No exemption/relaxation is applicable to MSME/Startups.
10. Only, the eligibility clause/criteria and marks scoring criteria for SI/BA (Prospective BA/SI) as mentioned in KUDSIT's RFP is not applicable on the Bidder/BA applying against this EOI. Rest all Terms & Conditions of RFP floated for pertinent RFP will be complied by SI/BA/Bidders.
11. However, OEM considered by SI/BA for this project have to mandatorily comply all the eligibility & technical criteria/compliance on back-to-back basis in line with end customer RFP and corrigendum(s) issued thereof.
12. **Please refer KUDSIT RFP Payment terms as this will remain applicable on back-to-back basis on Successful bidders. Payment shall be made only after actual receipt of payment from KUDSIT on submission of required documents.**
13. Bidder may check the price/commercial bid as per BOQ and match the same with FORMATS FOR SUBMISSION OF THE COMMERCIAL BID of KUDSIT RFP and if found any discrepancy, maybe brought to the notice of RCIL immediately and may modify their financial bid format as per KUDSIT RFP financial bid document.

1. About RailTel (Please visit ***railtelindia.com*** for more insight)

RailTel Corporation of India Ltd (RailTel) is one of the largest Mini-Ratna neutral telecom infrastructure providers in the country owning a Pan-India Optic fibre network on exclusive Right of Way (ROW) along Railway track. The OFC network presently reaches to over 4500 towns & cities of the country including several rural areas. With its Pan India high-capacity network, RailTel is working towards creating a knowledge society at various fronts. The portfolio of services provided by RailTel includes Data Centre & DR services, Tele-presence as a service, NLD services, IP-1 services, Internet and Broadband services on a pan-India basis.

Equipped with an ISO 9001, 20000-1:2011 & 27000 certification, RailTel offers a wide gamut of managed telecom services to Indian Telecom market including Managed lease lines, Tower co location, MPLS based IP-VPN, Internet, Data Centre services, NGN based voice carriage services to Telecom Operators, Dark fibre leasing to MSOs/LCOs. The major customer segment for RailTel comprises of Enterprises, Banks, Government Institutions/Department, Educational Institutions/Universities, Telecom Service Providers, Internet Service Providers, MSOs, etc. RailTel being a “Mini Ratna (Category-I)” PSU is steaming ahead in the enterprise segment with the launch of various services coupled with capacity augmentation in its Core network.

The main Project of RailTel/ERS Territory on hand are KFON, KSWAN, Wi–Fi service at Kerala Govt. Secretariat, E health Mission, IOCL VSS Project etc.

2. Background of EOI

RailTel Corporation of India Ltd (hereafter referred to as ‘RailTel’) an ICT arm of Indian Railways has been in the forefront of building innovative platforms and solutions and vision to build range of Information and Communication Technology (ICT) Services for its customers.

In this context, RailTel intends to participate in response to the RFP floated by KUDSIT for the work, as above (hereafter referred to as ‘KUDSIT’) and accordingly seeks to select a suitable partner for pre-bid arrangement through this EoI for the work of “**DESIGN, IMPLEMENTATION AND COMMISSIONING OF SMART DATA CENTER AT DIGITAL UNIVERSITY CAMPUS”**

Bidder has to agree to comply with all OEM technical & financial specifications as contained in the documentation including valid regulatory approvals / Certification of manufacture/ MAF, Technical certificates/others as per end-to-end requirement mentioned in RCIL/end Customer's RFP. Bidder also shall undertake to submit VALID REGULATORY APPROVALS/ CERTIFICATIONS/ MAF of major items of the proposed solution and other documents required in RCIL/end Customer Organization RFP in favor of RailTel against the proposed products. The selected BA has to provide VALID REGULATORY APPROVALS/ CERTIFICATIONS/ MAF from the OEM in the name of RailTel for bidding in the concerned RFP of KUDSIT, if their proposed solution is quoted to the customer, wherever applicable.

The details of RFP are as below:

RFP Title: DESIGN, IMPLEMENTATION AND COMMISSIONING OF SMART DATA CENTER AT DIGITAL UNIVERSITY CAMPUS

Ref. No KUDSIT/0051/Smart Data Center/2023-24 dtd 29.12.2023**;** latest amendment/ Corrigendum / clarifications. **Floated on: https://etenders.kerala.gov.in/**

System Integrator (SI)/BA shall quote for OEM/ make and model for each item description, subject to the confirmation of the given specification equivalence. The make and model shall be clearly mentioned in the proposal. However the subsystems/subcomponents offered shall be compatible with inter-operability to the main system, if different makes/models offered. Deviation to this will not be accepted/shall be summarily rejected, Wherever applicable.

3. Scope of Work & Partner Selection

The scope of work will be as mentioned in the pertinent end Customer organization RFP/RFP for "**DESIGN, IMPLEMENTATION AND COMMISSIONING OF SMART DATA CENTER AT DIGITAL UNIVERSITY CAMPUS**" Vide Ref No: **KUDSIT/KFON/2023-24/8249 dated 29.12.2023** on the website **https://etenders.kerala.gov.in/** with all latest amendment/Corrigendum/ clarifications.

All materials/services that propose to use with the work shall be approved by the KUDSIT/RCIL. The scope of work is subject to addition / deletion by the client.

The following is the broad scope of work however, this list is only indicative and not exhaustive , rather to serve as broad guidelines only. The RFP of the KUDSIT as enclosed is taken into cognizance for submitting EoI as per KUDSIT RFP.

The scope of work includes

DATA CENTER INFRASTRUCTURE

Design of the Data Center should with high "Energy efficiency", "sustainability"& with "Green IT" concept and to be certified TIER III from authorized certifying authority. The power consumption during running operations needs to be optimized. The Data Center must make the required services available with high performance, high availability with modular scalable Infrastructure for future expansion.
Day one requirement of the Data Center is for 10 Racks and to be upgraded to 20 Racks.

The Data Center design should meet the following industry standards for Tier III or above classifications:

- ASHRAE's cooling standards.
- IEEE standards for Electrical.
- TIA 942 for Data Center.
- NFPA, UL and local fire codes for Safety and security.
- ISO standards for processes and procedures.
- TIER III Data Center Certification from Uptime Institute LLC, USA

The Blue print of the Data Center should be prepared by the successful bidder after the contract has been awarded. Vendor should undertake all the necessary activities for successful implementation of the Data Center.

Bidder will design, Build and take the certification from authorized certifying authority for TIER III certification.

DIESEL GENERATOR

The place for new Diesel Generator is decided close to rear Gate of the compound near the existing Genset. The foundation of the DG to be constructed for which the soil strengthening to be done so that in near future the foundation does not become weak. Site survey for this purpose to be done before taking participation in the bid. All the necessary design and criteria to be submitted by the qualitied bidder to the client and necessary approval to be obtained before starting the work.

AIR COOLED CHILLERS

At the back side of the building near the RMU unit there is space available. This space to be utilized for placing the two no chiller units. The connecting pipes from the Data Center area will come out of the building along the wall, fixed to the wall using necessary metallic brackets, mounting structure and at the bottom will run under the
ground up to the Chiller units.

3.1 Warranty

The warranty would be valid for the performance of products, service and application for the 5 years warranty from the date of supply and 3 years AMC after the warranty period along with consumers as applicable in the **KUDSIT RFP.** After 10 years further support may be consider on demand. The supplier warrants that all goods are new, unused, and of the most recent or current models, and that they incorporate all recent improvements all recent improvements in design and materials, unless provided otherwise in the contract.
The bidder shall warrant the products and services supplied be new and free from all defects and faults in material, workmanship and manufacture and shall be of the highest grade and consistent with the established and generally accepted standards of products/services/processes/protocols of the type ordered and shall perform in full conformity with the specifications and drawings.
The BA/SI shall be accountable for any defects that may develop under the conditions provided by the contract and under proper use, arising from faulty materials, design or workmanship such as corrosion, inadequate quantity of material/quality of management to meet equipment/system requirements, inadequate system management, deficiencies in design and/ or otherwise and shall remedy such defects at his own cost when called upon to do so by the RCIL/end Customer who shall state in writing in what respect the products are faulty.

If it becomes necessary for the bidder to replace or renew any defective portion/portions of the supplies under this clause, the provisions of the clause shall apply to the portion/portions of the

equipment so replaced or renewed or until the end of the above-mentioned period, whichever may be later. If any defect in terms of Hardware/Software/Applications is not remedied within a reasonable time, the Purchaser may proceed to do the work at the contractor's risk & cost, but without prejudice to any other rights which the customer may have against the contractor in respect of such defects, replacement under warranty clause shall be made by the bidder free of all charges at site including freight, insurance, and other incidental charges, Wherever applicable.

3.2 Warranty Support

This shall be applicable as per KUDSIT RFP terms and conditions under clause 7.3

3.3 Quality of Service, Fulfillment of functionality, Down Time and penalty

The Quality of Service, Fulfillment of functionality, Down Time and penalty will be applicable as per the relevant terms and conditions of KUDSIT RFP

3.4 Purpose of EOI

Detailed as above

3.5 Solution provider/BA need to DESIGN, IMPLEMENTATION AND COMMISSIONING OF SMART DATA CENTER AT DIGITAL UNIVERSITY CAMPUS as prescribed by KUDSIT in terms of **Quality of Service, Fulfillment of functionality ,Down Time and penalty if any, on back-to-back basis**

3.6 Bidder may submit their response in the prescribed form of duly signed and stamped for techno – commercial bid through Online mode vide email sent to ers.eoi12@railtelindia.com, within the stipulated date and time, as mentioned in this EOI document.
The Bidder shall accompany necessary documents as prescribed in the EoI.

3.7. Interested partners may note that this is a single stage, single Packet Bid.

3.8. Only those bids shall be opened, which have been submitted within the stipulated time as mentioned in this EOI document with required credentials and Token EMD.

The Bidder is requested to go through the BoQ & BoM for quoting for EoI as enclosed. The breakup cost as per BoM may also be furnished separately.

3.9. <u>Technical Bid shall contains following requirements and testimonials supporting the recquirements</u> :-

I Eligibility Criteria

Sl. No	Parameter Specific Requirements	Documents
1	The bidder must be a company registered in India under Indian Companies Act 1956 and 2013. Shall have been in operation for a period of at least 5 years as on bid submission date.	Valid documentary proof of Certificate of incorporation & Valid GST registration certificate to be attached
2	The bidder should submit Manufacturer Authorization Form (MAF) to RailTel from the OEM for the quoted products/items along with the technical bid.	Manufacturer Authorization Form to be Submitted – DC Infra, HCI & backup. Annexure-E (as per RFP)
3	The bidder must have a valid ISO 9001:2015/ ISO 27001:2013 (issued in India) from the date of tender.	Certificate copy to be enclosed
4	The Bidder should have been actively engaged in the field and shall have a registered office anywhere in India and presence in Kerala/Tamil Nadu/ Karnataka for the last five years.	Attached relevant document (Copy of Rental Agreement or Purchase deed)
5	The bidder must have an on-site support engineer in the relevant areas and should attend the issues within 4 hours of time.	Self-Declaration, Annexure-A(as per RFP)
6	Bidder should have an average annual turnover of at least 30 Cr INR during the last 3 financial years. (2020-2021, 2021-2022, 2022-2023)	Profit & Loss Account Statement of audited balance sheet and Statutory Auditor Certificate confirming turnover.
7	The Bidder should have positive net worth for the last three audited Financial Year. (2020-2021, 2021-2022, 2022-2023)	Copy of audited profit and loss account/ balance sheet of the last threefinancial years, highlighting the requisite figure related to positive net worth and profitability.
8	The Bidding entity should not have been black listed for indulging in corrupt practice, fraudulent practice, coercive practice, undesirable practice, breach of contract or restrictive practice by any Central/ State Government/PSU/Semi- Government bodies as on bid submission date	Self-Certification/ Declaration duly signed by authorized signatory on company letter head.
9	The Bidder/OEM should have installed and commissioned minimum three or more Smart Rack Data Centers in India in the last five years. Bidders who have done in house Data Centers shall not be considered	Copy of work order(s) / Purchase Order/ Completion Certificate/ Project ongoing certificate/contract agreement to be attached
10	The Bidders/Consortium partner should have experience in at least one Data Center setup in the last 5 years as on Bid submission date shall include IT Infrastructure related Cooling Rack and UPS solution value not less than 75 Lakhs	Purchase Order/ Project ongoing certificate/ Completion Certificate tobe attached
11	Detailed Bill of Materials for all the required components should be mentioned else the bidder willbe disqualified.	BOM should be Submitted

12	The Bidder/OEM should have a minimum 1 number ofCDCS (Certified Data Center Specialist) and/or CDCP (Certified Data Center Professional) and/or ATD in their roles.	Copy of Valid Certificate to be attached.
13	The Smart Rack OEM should have a certificate ofquality CE/ISO.	Certificate copy to be enclosed
14	The bidder/OEM should have presently AMCagreement of minimum one Data Centers in Kerala.	Copy of work order(s) / Purchase Order/ contract agreement to be attached
15	Smart Rack OEM should have a valid ISO 9001:2015,ISO 14001:2015, OHSAS 18001:2007 Certification.	Certificate copy to be enclosed
16	a) Certificate by authorized signatory of the bidder confirming acceptance of all tender terms and conditions and undertaking for the Total responsibility of design, procurement and implementation of the total solution b) In case an Authorized Signatory signing the Bid on Behalf of the Bidder, he/she should be duly authorized by the Bidding Company to sign the Bid and the Agreement on their behalf.	a) Declaration of acceptance of terms and conditionsin RFP Appendix – B (as per RFP) b) Powerof Attorney to be submitted Appendix – C (as per RFP)
17	**Site Visit**	Sign off document on behalf of RailTel for site surveyshall be submitted along with the Technical Proposal **Annexure-D**(as per RFP)
18	The OEM from a country which shares a land border with India will be eligible only if they are registeredwith the competent authority as per Govt. of India order, issued by Ministry of Finance vide No.F.No.6/18/2019-PPD dated 23/07/2020	Copy of document of registration withDPIIT, Govt. of India
19	Bidder must be empaneled with RailTel as Business associate.	Copy of Empanelment letter and Empanelment PG submitted, if any
20	The company must have: I. Valid PAN card. II. Been registered with GST. III.has paid ITR for last 3 financial years ending 31st March 2023.	I. Copy of PAN Card. II. Copy of GST registration certificate. III. Copy of ITR filed
21	Consortium bids are allowed	MOU/Agreement to be enclosed

Similar Works Definition:

*Please refer sl no 9 & 10 above.

Note: Completion of work should fall in the above period. The bidder shall furnish work completion/ substantial work completion certificate issued by customer/s for the Purchase Order/Work orders
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ii. The Technical Compliance of the Scope of Work. However, format may be modified by bidder as per their choice, but item must be marked with OEM/Vendors Name, valid regulatory approvals/ Certifications / MAF provided or not and Data Sheet attached, wherever applicable.

iii. The Technical Compliance sheet provided with Hard Copy of Technical Specs and products/services/processes/protocols, wherever applicable.

iv. Price quote in the attached format (Annexure 8).

v. Compliance of OEM/Vendors with their valid regulatory approvals/ Certifications/ MAF's and all mandatory documents asked by KUDSIT from OEM/Vendors.

vi. Unconditional Acceptance of contents the RFP document of KUDSIT and any Other/General Document of KUDSIT RFP along with corrigendum and addendum.

vii. Acceptance Letter of EoI

viii. Annexure Formats as mentioned in this EOI.

ix. All documents mentioned in checklist and annexures of this EOI.

x. The BA agrees to undertake Warranty, Maintenance contract for a minimum **period as per KUDSIT.** Undertaking in this regard is to be submitted along with the technical bid as applicable.

xi. Contract Period Undertaking – As per pertinent RFP floated by KUDSIT. DESIGN, IMPLEMENTATION AND COMMISSIONING OF SMART DATA CENTER AT DIGITAL UNIVERSITY CAMPUS for 90 days from the date of issue of Work Order and subjected to the fulfillment of RFP conditions referred above.

xii. The bid should be duly signed and submitted by Authorized Signatory. The bidder has to submit notarized of non-judicial stamp paper of appropriate value Power of Attorney having authorized signatory's nomination along with board resolution in favor of power of attorney.

xiii. The bidder has to mandatorily submit notarized Annexure-11 on non- judicial stamp paper of requisite value of Rs. 200, else bid shall be summarily rejected.

3.10. Prospective bidder's bid evaluation will be done based o n above mentioned documents. Bids of those Bidders who submit Technical Documents without OEM/Vendor Name, Make and Model, technical Compliance, and unconditional acceptance of the KUDSIT hard Copies, will be summarily rejected

3.11. Based on evaluation of outcome against 3.9, whoever may qualify as per 3.9.i and further complying technical requirement with supporting documents o f OEM/Vendor VALID REGULATORY APPROVALS/ CERTIFICATIONS/ MAF, datasheets, BOQ/BOM (wherever applicable) may be treated as technically qualified partner for Stage-1.

3.12. Bidders selected as per Para 3.11 above will be treated as eligible for financial bid opening.

3.13 Financial Bid:

The Annexure 8 of for financial quote to be submitted for evaluation

3.14 Selection of Bidder: as per outcome of Clause 3.9 above

The technically qualified bidder will be selected on the **lowest quote (L-1)** basis for complete 'Scope of Work' as mentioned in the EOI document and Physical documents of technical specifications of KUDSIT, subject to the respective overall bid is in compliance to the requirements of this EOI. The partner selected will be termed as 'Commercially Suitable Partner (hereafter referred to as 'CSP')'. It is ascertained, that the final selection of CSP will be on the L-1 basis only. Further, RailTel reserves the right to have negotiation with the CSP if required. However RailTel reserves the right to select any Bidder irrespective of the ranking in the Bid list without assigning any reasons.

3.15 The partner selected through this EOI shall be deemed to be responsible for delivering of complete 'Scope of Work' as mentioned in the KUDSIT's RFP document and subsequent corrigendum. However, RailTel at its discern, may take- up a certain portion / percentage of 'Scope of Work' by communicating to the CSP at any point of time during the engagement period. (The day at which 'CSP' is declared, will mark the start of engagement period. The period will be valid till final outcome of this RFP as announced by KUDSIT. In case, RailTel comes out to be winner of the KUDSIT RFP, then the engagement period will get auto-extended to the period RailTel serves KUDSIT for the concerned RFP, unless terminated earlier by RailTel as per terms and conditions mentioned in this EoI document). In this scenario, commercial engagement with the CSP will be for that portion / percentage only, which has not been taken by RailTel. Accordingly, resultant value of work will be derived on the basis of negotiated (in case) commercial bid of the CSP.

3.16 RailTel on the basis of inputs / factors available, from various resources, past experiences of their ICT projects and on the basis of negotiated (in case) commercial bid of the CSP, will endeavor to place best techno-commercial bid in response to the pertinent KUDSIT's RFP. Further relationship with CSP will be based on the outcome pertinent KUDSIT's RFP.

4 General Requirements and Eligibility Criteria for Bidders

4.1. The interested bidder should be an Empaneled Partner with RailTel on the last date of bid submission of EOI & has to provide relevant documents to qualify as per relevant Clause of this EOI.

4.2. The interested bidder should submit Earnest Money Deposit (EMD) if applicable, in the format as mentioned in this EOI document along with the bid.

4.3. The interested bidder should be in compliance to insertion of Rule 144(xi) in the GFR, 2017 vide office OM no. 6/18/2019-PPD dated 23-July-2020 issued by Ministry of Finance, Government of India, including revisions.

4.4. The interested bidder should submit an undertaking for maintaining of 'Local Content Compliance' and shall submit a certificate mentioning the 'Local Content Percentage' duly signed and stamped by statutory auditor or cost auditor or authorized signatory of the interested partner. This will not be a binding clause in cases where end customer has not asked Local Content Clause/Make in India Clause in their Current RFP.

4.5 **The bidder has to mandatorily provide all Annexures of this EoI and corrigendum(s) thereof.**

4.6. The interested bidder should not be backlisted by any State / Central Government Ministry / Department / Corporation / Autonomous Body on the last date of submission of EOI.

4.7. There should not be any ongoing, arbitration case(s) between 'RailTel or Organizations under Indian Railways' and 'Interested Bidder' on the last date of submission of EOI.

4.8. The interested bidder shall not have a conflict of interest with one or more bidding parties. Participation of interested bidder(s) with a conflict-of-interest situation will result in the disqualification of all bids in which it is involved. A bidder may be in a conflict of interest with one or more parties if including but not limited to:

a. Have controlling shareholders as his/her family members viz. spouse, son, daughter, father, mother or brother etc. in common or;

b. Have a relationship with each other directly or through common third parties that puts them in a position to have access to information about or influence on the bid of another interested partner.

4.9. The interested bidder should not be seeking / extending / exploring similar arrangements /engagements with any other organization except RailTel, for the KUDSITRFP.

4.10. The interested partner should have a valid Goods and Service Tax Identification Number (GSTIN), as on the last date of submission of EOI.

4.11. In addition to above clauses, bid of interested bidder should be in compliance to terms and conditions and technical requirements of the pertinent KUDSIT RFP as referred above.

Note: The interested bidder should submit duly signed and stamped EOI cover letter as per the format mentioned at Annexure-02 of this EOI document, as unconditional submission of meeting the clauses mentioned above, from Clause **4.1. to Clause 4.11**

5. Resources to be Deployed

i. The bidder shall carry out all necessary activities during execution of the work and all along thereafter as may be necessary for proper fulfilling of the obligations under the contract.

ii. Adequate training, required to carry out the activities mentioned in the scope of work above, shall be provided by Bidder to all deployed resources.

iii. Boarding, lodging, transportation, and all other expenses of the deployed resources are to be borne by bidder,

iv. RCIL/end Customer shall be at liberty to object to and require the bidder to remove from the works any person who in his opinion misconducts himself or is incompetent or negligent in the performance of his duties or whose employment is otherwise considered by RCIL/end Customer to be undesirable. Such person shall not be employed again at works site without the written permission of RCIL/end Customer and the persons so removed shall be replaced with in a week's time by competent substitutes.

v. RCIL/end Customer has agreement with the bidder only, it is the responsibility of the bidder to ensure all due diligence is carried out for background verification of resources deployed. And in any case, the RCIL/end Customer will not be responsible for the violation of due diligence or offence committed by the bidder or any of its resources.

6 Proposal Preparation and Submission Cost

6.1. The interested partner is responsible for all costs incurred in connection with participation in this EOI process, including, but not limited to, cost incurred in conduct of informative and other diligence activities, participation in meetings/discussions/presentations, preparation of proposal, in providing any additional information required by RailTel to facilitate the evaluation process or all such activities related to the bid process. RailTel will in no case be responsible or liable for those costs, regardless of the conduct or outcome of the bidding process. This EOI document does not commit to award a contract or to engage in negotiations. In case of negotiations quoting the value above the quoted value is not permitted.

7 Amendment to EOI Document

7.1. At any time prior to the deadline for submission of bids, RailTel, may, for any reason can modify the EOI document by an amendment. All the amendments made in the document would be informed by displaying on RailTel (www.railtelindia.com) website only. The interested bidders are advised to visit the RailTel website on regular basis for checking necessary updates. RailTel also reserves the rights to amend the dates mentioned in this EOI for bid process. RailTel may, at its discretion, extend the last date for receipt of EoI response Individual advices in this connection is not treated as mandatory.

8 Bid, PG & EMD Key Information

Type of guarantee/EMD	Amount/Value/Period	Minimum Validity	Mode of submission
EMD	8,50,000/-(This should be paid as EMD at the time of submission of EoI	Upto the submission of PG	In the form of Bank Guarantee/Online Bank Transfer/Fixed Deposit immediately
PG	5 % of the accepted Contract value	4 months beyond expiry of contract period.	In the form of Bank Guarantee/Online Bank Transfer/Fixed Deposit of Nationalized bank/Scheduled /Govt treasury
BID	Period	180 days	Online Submission

9 Right to Terminate the Process

9.1. RailTel may terminate the EOI process at any time without assigning any reason. RailTel makes no commitments, express or implied, that this process will result in a business transaction with anyone. This EOI does not constitute an offer by RailTel. The interested bidder's participation in this process may result in RailTel selecting the CSP to engage in further discussions and negotiations toward execution of a contract. The commencement of such negotiations does not, however, signify a commitment by RailTel to execute a contract or to continue negotiations. RailTel may terminate negotiations at any time without assigning any reason.

10 Language of Bid

10.1. The bid prepared by the interested partner and all correspondence and documents relating to the bids exchanged by the bidder and RailTel, shall be written in English Language, provided that any printed literature furnished by the Bidder in another language shall be accompanied by an English translation in which case, for purposes of interpretation of the bid, the English translation shall govern. If any supporting documents submitted are in any language other than English, translation of the same in English language is to be duly attested by the Authorized Signatory of the interested partner.

11 Submission of Bid

11.1. The Bidder should take into account any Corrigendum to this EOI document that may have been published before submitting their EOI response. The bid is to be submitted in the mode as mentioned in this EOI document. EOI response submitted in any other mode will not be entertained.

11.2. Bidders in their own interest are advised to submit the EOI response well in time before the last date and hence to avoid any inconvenience at the last moment.

11.3. An Organization / Bidder can submit only 'One EOI Response'. Submission of multiple EOI Response by bidder(s) may lead to rejection of all of its bid.

12 Rights to Accept / Reject any or all EoI Response

12.1. RailTel reserves the right to accept or reject any EOI Response, and to annul the bidding process and reject all Bids at any time prior to award of the Contract, without thereby incurring any liability to the affected interested bidder(s), or any obligation to inform the affected Bidders of the ground for RailTel action.

13 Payment Terms

1. 60% of the payment shall be released after successful supply of materials and verification at site as secured advance and will be adjusted against the running account bill.

2. Next 35% of the payment shall be released after the successful installation and commissioning of the device/equipment/instrument at site and after the issue of acceptance and completion certificate.

3. Balance 5% of the amount shall be released after the submission of Bank Guarantee for 5% contract value as performance warranty with a validity of 60 days from the date of completion of warranty period and the warranty certificate from the Original Equipment Manufacturer (OEM).

13.1. Payment will be processed after receiving the GST invoice for the work / services and after RailTel has received the necessary payment based on certification and acceptance from KUDSIT for the same work / services. Any deduction /Penalties levied by KUDSIT will be carried back-to-back and will be deducted from SI/BA/CSP's invoices/Subject to the cause to deduction / penalty is due to deviation in terms and conditions of service standards by the CSP.

13.2. Documents list required at the time of payment/invoice submission by selected bidder shall be: -

- Valid Tax Invoice (in Triplicate, where supply is Involved)
    - Delivery Challan and e way bill
    - Factory Test Report
    - QA& COQ inspection certificate duly signed by OEM.
    - FAT Inspection Certificate or Approval of waiver for the same.
    - Packaging List
    - Purchaser's Inspection certificate
    - Consignee receipt
    - Warranty certificate of OEM
    - Insurance certificate
    - A certificate duly signed by the firm certifying that equipment/ materials being delivered are new and conform to technical specification.

- A certificate duly signed by the firm certifying that the equipment/ materials being delivered are complete in all respect for the concerned items for which the payment is being released.

All payments shall be released after sign-off by the KUDSIT.
Payment terms will be on back to back basis as per KUDSIT RFP.

14 Performance Guarantee (PG)

The conditions of PG on back to back basis as per KUDSIT RFP

The PG shall be discharged / returned by RailTel upon being satisfied that there has been due performance of the obligations of the CSP under the contract. However, no interest shall be payable on the PG. In the event, CSP being unable to service the contract for whatsoever reason, RailTel would invoke the PG at its discern. Notwithstanding and without prejudice to any rights whatsoever of RailTel under the contract in the matter, the proceeds of the PG shall be payable to RailTel as compensation for any loss resulting from the CSP's failure to complete its obligations under the contract. RailTel shall notify the CSP in writing of the exercise of its right to receive such compensation within 15 days, indicating the contractual obligation(s) for which the CSP is in default, The bidders shall submit 5% of the total contract value as Performance Guarantee

14.1. RailTel shall also be entitled to make recoveries from the CSP's bills, PG or from any other amount due to him, the equivalent value of any payment made to him due to inadvertence, error, collusion, misconstruction or misstatement.

14.2. If the service period / contract value undergo variation PG also shall be varied accordingly

14.3. During the contract period, RailTel may issue Purchase Order(s) for the additional services ordered by KUDSIT (in case) to RailTel. In such scenario(s) also, Clause No. 13.1. to Clause No. 13.4. are to be followed by the CSP.

14.4. In case the KUDSIT has sought PG of the contract in the terms of Indemnity Bond from RailTel, the selected bidder has to provide the equivalent value PG from scheduled Bank to RailTel. No Indemnity Bond from Selected Bidder will be accepted in lieu of PG from Scheduled Bank.

14.7. In case KUDSIT has sought any other types of PG, at present or in future or else Integrity Pact PG (presently or in future), same remain applicable on selected Bidder. The Said PG will be issued by Selected Bidder from Scheduled Bank favoring RailTel Corporation of India Limited. No Indemnity Bond in lieu of such PG will be accepted by RailTel.

14.8 Integrity pact in the format if any, as per KUDSIT to be provided by the Bidder.

15. Details of Commercial Bid / Financial Bid

15.1. BA should submit commercial bid strictly as per the format mentioned by KUDSIT or in subsequent corrigendum's (if any).

15.2. The commercial bid should clearly bring out the cost of the services with detailed break- up of taxes.

15.3. The rates mentioned in the commercial bid of the CSP will form basis of commercial transaction between RailTel and bidder.

15.4. The quantity of 'Line Items' may vary at the time of placing of Purchase Order or during the Contract Period, as communicated by KUDSIT(in case) to RailTel. In such scenarios, the 'Per Unit' cost will be considered to arrive on contractual amount between RailTel and CSP.

15.5. It is also possible that KUDSIT may surrender / increase, some or all of the quantities of service items ordered to RailTel during the contract period and accordingly the contractual amount between RailTel and CSP shall be considered, at sole discern of RailTel.

15.6. It is also possible that during the contract period, KUDSIT may raise Purchase Order to RailTel for the line items (and respective quantities) which are not mentioned in the pertinent RFP of KUDSIT. In such scenario, RailTel at its sole discretion, may extend the scope of the contract with CSP by placing order to KUDSIT, **on back-to- back basis**.

15.7. In addition to the Payment Terms, all other Contractual Terms will also be on '**back- to-back**' basis between RailTel and CSP, as mentioned in the pertinent KUDSIT's RFP. VALID REGULATORY APPROVALS/ CERTIFICATIONS/ MAF (Manufacturer's Authorization Form) in the name of RailTel and another VALID REGULATORY APPROVALS/ CERTIFICATIONS/ MAF in Bidders Name (separately with reference to this EOI) from the OEMs, whose product is mentioned in commercial KUDSIT bid format, should also be ensured by the partner. The VALID REGULATORY APPROVALS/ CERTIFICATIONS/ MAF format and required content should be in-line with KUDSIT's RFP, if specifically asked by KUDSIT in a particular format.

16. Duration of the Contract Period

16.1. Normally the contract duration shall be same as of KUDSIT's contract duration with RailTel until otherwise terminated earlier. **Indicative contract duration is 90 days as per KUDSIT with reference to 5 years warranty and 3 years AMC thereafter.** Unless otherwise terminated/modified, as mentioned in this EOI document and subject to award of contract to RailTel. The contract duration can be renewed /extended by RailTel at its discern, in case KUDSIT extends / RailTel renews services with RailTel by virtue of extending / renewing / new issuance of one or more Purchase Order(s) placed by KUDSIT to RailTel.

17. Restrictions on 'Transfer of Agreement'

17.1. The CSP shall not assign or transfer its right in any manner whatsoever under the contract / agreement to a third party or enter into any agreement for sub- contracting and/or partnership relating to any subject matter of the contract / agreement to any third party either in whole or in any part i.e., no sub-contracting / partnership / third party interest shall be created.

18. Suspension, Revocation or Termination of Contract / Agreement

18.1. RailTel reserves the right to suspend the operation of the contract / agreement, at any time, due to change in its own license conditions or upon directions from the competent government authorities, in such a situation, RailTel shall not be responsible for any damage or loss caused or arisen out of aforesaid action. Further, the suspension of the contract / agreement will not be a cause or ground for extension of the period of the contract / agreement and suspension period will be taken as period spent. During this period, no charges for the use of the facility of the CSP shall be payable by RailTel.

18.2. RailTel may, without prejudice to any other remedy available for the breach of any conditions of agreements, by a written notice as per GCCA of contract or as per KUDSIT RFP condition whichever is issued to the CSP.

RailTel shall terminate/or suspend the contract /agreement under any of the following circumstances:

a) The CSP failing to perform any obligation(s) under the contract / agreement.

b) The CSP failing to rectify, within the time prescribed, any defect as may be pointed out by RailTel.

c) Non adherence to Service Level Agreements (SLA) which RailTel has committed to KUDSIT.

d) The CSP going into liquidation or ordered to be wound up by competent RCIL/end Customer

e) If the CSP is wound up or goes into liquidation, it shall immediately (and not more three days) inform about occurrence of such event to RailTel in writing.
In such case, the written notice can be modified by RailTel as deemed fit under the circumstances. RailTel may either decide to issue a termination notice or to continue the agreement by suitably modifying the conditions, as deemed fit.
It shall be the responsibility of the CSP to maintain the agreed Quality of Service, even during the period when the notice for surrender/termination of contract / agreement is pending and if the Quality of Performance of Solution is not maintained, during the said notice period, it shall be treated as material breach liable for termination at risk and consequent of which CSP's PG related to contract / agreement along with PG related to the Empanelment Agreement with RailTel shall be forfeited, without any further notice.

f) Breach of non-fulfillment of contract / agreement conditions may come to the notice of RailTel through complaints or as a result of the regular monitoring. Wherever considered appropriate RailTel may conduct an inquiry either Suo- moto or on complaint to determine whether there has been any breach in compliance of the terms and conditions of the agreement by the successful bidder or not. The CSP shall extend all reasonable facilities and shall endeavor to remove the hindrance of every type upon such inquiry. In case of default by the CSP in successful implementation and thereafter maintenance of services / works as per the conditions mentioned in this EOI document, the PG(s) of CSP available with RailTel can be forfeited.

19. Dispute Settlement

19.1 In case of any dispute concerning the contract / agreement, both the CSP and RailTel shall try to settle the same amicably through mutual discussion / negotiations. Any unsettled dispute shall be settled in terms of Indian Act of Arbitration and Conciliation 1996 or any amendment thereof. Place of Arbitration shall be New Delhi.

19.2 The arbitral tribunal shall consist of the Sole Arbitrator. The arbitrator shall be appointed by the Chairman & Managing Director (CMD) of RailTel Corporation of India Ltd.

19.3 All arbitration proceedings shall be conducted in English.

20. Governing Laws

20.1. The contract shall be interpreted in accordance with the laws of India. The courts at New Delhi shall have exclusive jurisdiction to entertain and try all matters arising out of this contract.

21. Statutory Compliance

21.1. During the tenure of this Contract nothing shall be done by CSP in contravention of any law, act and/ or rules/regulations, there under or any amendment thereof and shall keep RailTel indemnified in this regard.

21.2. The Bidder shall comply and ensure strict compliance by his/her employees and agents of all applicable Central, State, Municipal and Local laws and Regulations and undertake to indemnify RailTel, from and against all levies, damages, penalties and payments whatsoever as may be imposed by reason of any breach or violation of any law, rule, including but not limited to the claims against RailTel or its Customer under Employees Compensation Act, 1923,The Employees Provident Fund and Miscellaneous Provisions Act, 1952, The Contract Labour (Abolition and Regulation) Act 1970, Factories Act, 1948, Minimum Wages Act and Regulations, Shop and Establishment Act and Labour Laws which would be amended/modified or any new act if

it comes in force whatsoever, and all actions claim and demand arising therefrom and/or related thereto.

22. Intellectual Property Rights

22.1. Each party i.e., RailTel and CSP, acknowledges and agree that the other party retains exclusive ownership and rights in its trade secrets, inventions, copyrights, and other intellectual property and any hardware provided by such party in relation to this contract / agreement.

22.2. Neither party shall remove or misuse or modify any copyright, trade mark or any other proprietary right of the other party which is known by virtue of this EoI and subsequent contract in any circumstances.

23. Severability

23.1. In the event any provision of this EOI and subsequent contract with CSP is held invalid or not enforceable by a court of competent jurisdiction, such provision shall be considered separately and such determination shall not invalidate the other provisions of the contract and Annexure/s which will be in full force and effect.

24. Force Majeure

24.1. If during the contract period, the performance in whole or in part, by other party, of any obligation under this is prevented or delayed by reason beyond the control of the parties including war, hostility, acts of the public enemy, civic commotion, sabotage, Act of State or direction from Statutory RCIL/end Customer, explosion, epidemic, quarantine restriction, strikes and lockouts (as are not limited to the establishments and facilities of the parties), fire, floods, earthquakes, natural calamities or any act of GOD(hereinafter referred to as EVENT) , provided notice of happenings of any such event is given by the affected party to the other, within twenty one (21) days from the date of occurrence thereof, neither party shall have any such claims for damages against the other, in respect of such non- performance or delay in performance. Provided service under this contract shall be resumed as soon as practicable, after such EVENT comes to an end or ceases to exist.

24.2. In the event of a Force Majeure, the affected party will be excused from performance during the existence of the force Majeure. When a Force Majeure occurs, the affected party after notifying the other party will attempt to mitigate the effect of the Force Majeure as much as possible. If such delaying cause shall continue for more than sixty (60) days from the date of the notice stated above, the party injured by the inability of the other to perform shall have the right, upon written notice of thirty (30) days to the other party, to terminate this contract. Neither party shall be liable for any breach, claims, and damages against the other, in respect of non-performance or delay in performance as a result of Force Majeure leading to such termination.

25. Indemnity

25.1. The CSP shall agree to indemnify and hold harmless RailTel, its officers, employees and agents (each an “Indemnified Party”) promptly upon demand at any time and from time to time, from and against any and all losses, claims, damages, liabilities, costs (including reasonable attorney’s fees and disbursements) and expenses (collectively, “Losses”) to which the Indemnified party may become subject, in so far as such losses directly arise out of, in any way relate to, or result from:

a) Any mis -statement or any breach of any representation or warranty made by CSP

b) The failure by the CSP to fulfill any covenant or condition contained in this contract by any employee or agent of the Bidder. Against all losses or damages arising from claims by third Parties that any Deliverables (or the access, use or other rights thereto), created by CSP pursuant to this contract, or any equipment, software, information, methods of operation or other intellectual property created by CSP pursuant to this contract, or the SLAs (i) infringes a copyright, trade mark, trade design enforceable in India, (ii) infringes a patent issues in India, or (iii) constitutes misappropriation or unlawful disclosure or used of another Party's trade secrets under the laws of India (collectively, "Infringement Claims"); or

c) Any compensation / claim or proceeding by any third party against RailTel arising out of any act, deed or omission by the CSP or

d) Claim filed by a workman or employee engaged by the CSP for carrying out work related to this agreement. For the avoidance of doubt, indemnification of Losses pursuant to this section shall be made in an amount or amounts sufficient to restore each of the Indemnified Party to the financial position it would have been in had the losses not occurred.

25.2. Any payment made under this contract to an indemnity or claim for breach of any provision of this contract shall include applicable taxes.

26. Limitation of Liability towards RailTel

26.1. The CSP (SI/BA) liability under the contract shall be determined as per the Law in force for the time being. The CSP shall be liable to RailTel for loss or damage occurred or caused or likely to occur on account of any act of omission on the part of the CSP and its employees (direct or indirect), including loss caused to RailTel on account of defect in goods or deficiency in services on the part of CSP or his agents or any person / persons claiming through under said CSP, However, such liability of the CSP shall not exceed the total value of the contract.

26.2. This limit shall not apply to damages for bodily injury (including death) and damage to real estate property and tangible personal property for which the CSP is legally liable.

27. Confidentiality cum Non-disclosure

27.1. The Receiving Party agrees that it will not disclose to third party/parties any information belonging to the Disclosing Party which is provided to it by the Disclosing Party before, during and after the execution of this contract. All such information belonging to the Disclosing Party and provided to the Receiving Party shall be considered Confidential Information. Confidential Information includes prices, quotations, negotiated issues made before the execution of the contract, design and other related information. All information provided by Disclosing Party to the Receiving Party shall be considered confidential even if it is not conspicuously marked as confidential.

27.2. Notwithstanding the foregoing, neither Party shall have any obligations regarding non- use or non-disclosure of any confidential information which:

27.2.1. Is already known to the receiving Party at the time of disclosure:

27.2.2. Is or becomes part of the public domain without violation of the terms hereof;

27.2.3. Is shown by conclusive documentary evidence to have been developed independently by the Receiving Party without violation of the terms hereof:

27.2.4. Is received from a third party without similar restrictions and without violation of this or a similar contract.

27.3 The terms and conditions of this contract, and all annexes, attachments and amendments hereto and thereto shall be considered Confidential Information. No news release, public announcement, advertisement or publicity concerning this contract and/or its contents herein shall be made by either Party without the prior written approval of the other Party unless such disclosure or public announcement is required by applicable law.

27.4 Notwithstanding the above, information may be transmitted to governmental, judicial, regulatory authorities, if so, required by law. In such an event, the Disclosing Party shall inform the other party about the same within 30 (thirty) Days of such disclosure.

27.5 This Confidentiality and Non- Disclosure clause shall survive even after the expiry or termination of this contract.

28 Assignment

28.1 Neither this contract nor any of the rights, interests or obligations under this contract shall be assigned, in whole or in part, by operation of law or otherwise by any of the Parties without the prior written consent of each of the other Parties. Any purported assignment without such consent shall be void. Subject to the preceding sentences, this contract will be binding upon, inureto the benefit of, and be enforceable by, the Parties and their respective successors and assigns.

29 Insurance

The CSP shall agree to take insurances to cover all the elements of the project under this EOI including but not limited to Manpower, Hardware, Software and Services etc. as per KUDSITRFP specified terms.

30 Exit Management

30.1 Exit Management Purpose

30.1.1 This clause sets out the provision, which will apply during Exit Management period. The parties shall ensure that their respective associated entities carry out their respective obligation set out in this Exit Management Clause.

30.1.2 The exit management period starts, in case of expiry of contract, at least 03 months prior to the date when the contract comes to an end or in case of termination contract, on the date when the notice of termination is sent to the CSP. The exit management period ends on the date agreed upon by RailTel or Three (03) months after the beginning of the exit management period, whichever is earlier.

30.2 Confidential Information, Security and Data:

CSP will promptly, on the commencement of the exit management period, supply to RailTel or its nominated agencies the following (if asked by RailTel in writing):

30.2.1 Information relating to the current services rendered and performance data relating to the performance of the services; documentation relating to the project, project's customized source code (if any); any other data and confidential information created as part of or is related to this contract;

30.2.2 All other information (including but not limited to documents, records and agreements) relating to the services reasonably necessary to enable RailTel and its nominated agencies, or its replacing vendor to carry out due diligence in order to transition the provision of the services to RailTel or its nominated agencies, or its replacing vendor (as the case may be).

30.3 Employees : Promptly on reasonable request at any time during the exit management period, the CSP shall, subject to applicable laws, restraints and regulations (including in particular those relating to privacy) provide RailTel a list of all employees (with job titles and communication address), dedicated to providing the services at the commencement of the exit management period; To the extent that any Transfer Regulation does not apply to any employee of the CSP, RailTel or the replacing vendor may make an offer of contract for services to such employees of the CSP and the CSP shall not enforce or impose any contractual provision that would prevent any such employee from being hired by RailTel or any replacing vendor.

30.4 Rights of Access to Information: Besides during the contract period, during the exit management period also, if asked by RailTel in writing, the CSP shall be obliged to provide an access of information to RailTel and / or any Replacing Vendor in order to make an inventory of the Assets (including hardware / software / active / passive), documentations, manuals, catalogues, archive data, Live data, policy documents or any other related material.

Note: RailTel at its sole discern may not enforce any or all clauses / sub-clauses under the

'Exit Management' clause due to administrative convenience or any other reasons as deemed fit.

31. Waiver

31.1. Except as otherwise specifically provided in the contract, no failure to exercise or delay in exercising, any right, power or privilege set forth in the contract will operate as a waiver of any right, power or privilege.

32. Changes in Contract Agreement

32.1. No modification of the terms and conditions of the Contract Agreement shall be made except by written amendments signed by the both CSP and RailTel.

ANNEXURE 1 - FORMAT FOR PROJECT EXPERIENCE CITATIONS

Sl. No.	Item	Bidder's Response
1	Name of Bidder entity	
2	Assignment Name	
3	Name & Address of Client	
4	Approximate Value of the Contract (in INR Crores)	
5	Duration of Assignment (months)	
6	Start Date (month/year)	
7	Completion Date (month/year)	
8	Narrative description of the project	
9	Details of Work that defines the scope relevant to the	
10	Documentary Evidence attached	

Signature of Bidder ……..
Name: ……..
Place: …….
Date: …….

Annexure – 02

EOI COVER LETTER

(On Organization Letter Head)
EoI Ref No.: EOI NO RCIL/SR/ERS/2023-24/EOI/8

Date:

To,
The Joint General Manager (ERS),
RailTel Corporation of India Limited,
Kerala Territory Office,
1st Floor, Eastern Entry Tower,
Ernakulam South Railway Station ,
Ernakulam 682016

KUDSIT RFP Ref. KUDSIT/0051/Smart Data Center/2023-24
dtd 29.12.2023 on **https://etenders.kerala.gov.in/**

Dear Sir/Madam,

1. I, the undersigned, on behalf of M/s ....., having carefully examined the referred EOI offer to participate in the same, in full conformity with the said EOI and all the terms and conditions thereof, including corrigendum issued till last date of submission of EOI. It is also undertaken and submitted that we are in abidance of Clause 4 (from Clause 4.1 to Clause 4.11) of EOI.

2. I agree to abide by this Proposal, consisting of this letter, our Pre-qualification, Technical and Commercial Proposals, for a period of 180 days from the date fixed for submission of Proposals as stipulated in the EOI and modifications resulting from contract negotiations, and it shall remain binding upon us and maybe accepted by you at any time before the expiration of that period.

3. I acknowledge that the RCIL/end Customer will be relying on the information provided in the Proposal and the documents accompanying the Proposal for selection of the Commercially Suitable Partner (CSP) for there for said Service, and we certify that all information provided therein is true and correct; nothing has been omitted which

renders such information misleading; and all documents accompanying the Proposal are true copies of their respective originals.

4. I undertake, if our Bid is accepted, to commence our services as per scope of work as specified in the contract document.

5. Until a formal Purchase Order or Contract is prepared and executed, this Bid and supplement / additional documents submitted (if any), together with your written acceptance thereof in your notification of award shall constitute a binding contract between us.

6. I hereby undertake and give unconditional acceptance for compliance of all terms & conditions of KUDSIT RFP issued **RFP Ref.** KUDSIT/0051/Smart Data Center/2023-24 dtd 29.12.2023 on **https://etenders.kerala.gov.in/** portal, against this EOI based customer's requirement.

7. I hereby undertake that there will be no deviation from the Terms and Conditions of EOI and KUDSIT's RFP issued **.** KUDSIT/0051/Smart Data Center/2023-24 dtd 29.12.2023 on **https://etenders.kerala.gov.in/**

Signature of Authorized

Signatory

Name & Designation

Date ----------

Signature of Bidder ……
Name: ……..
Place: ……
Date: ……

Annexure - 03

Local Content Compliance

(On Organization Letter Head)

EoI Ref No.: EOI NO RCIL/SR/ERS/2023-24/EOI/8 Date:

Joint General Manager (ERS),
RailTel Corporation of India Limited,
Kerala Territory Office,1st Floor, Eastern Entry Tower,
Ernakulam South Railway Station
Ernakulam 682016

KUDSIT RFP Ref. KUDSIT/0051/Smart Data Center/2023-24 dtd 29.12.2023 on **https://etenders.kerala.gov.in/**

Dear Sir/Ma'am,

I, the undersigned, on behalf of M/s ....., hereby submits that our technical solution for the 'Scope of Work' mentioned under the EoI document is in compliance of local content requirement and makes us equivalent to 'Class-I local supplier' / 'Class-II local supplier' (mention whichever is applicable) for the EoI under reference, as defined under the order No. P-45021/2/2017-PP(BE-II) dt. 04-June-2020 issued by Ministry of Commerce and Industry, Govt. of India.
I hereby certify that M/s .....fulfills all requirements in this regard and is eligible to be considered and for the submitted bid Local Content Percentage is % (write in figures as well as in words).

I hereby acknowledge that in the event of acceptance of bid on above certificate and if the certificate is found to be false at any stage, the false certificate would be a ground for immediate termination of contract and further legal action in accordance with the Law, including but not limited to the encashment of Bank Guarantee related to Empanelment and Performance Guarantee (PG), as available with RailTel, related to this EoI. Signature of Authorized Signatory

Name Designation

Signature of Bidder ……..
Name: ……..
Place: …….
Date: ……

Annexure – 04

CHECKLIST OF DOCUMENTS FOR BID SUBMISSION

KUDSIT RFP Ref. KUDSIT/0051/Smart Data Center/2023-24 dtd 29.12.2023 on **https://etenders.kerala.gov.in/**

S. No.	Document
1	EOI Cover Letter (Annexure-02)
2	Technical compliance sheet
3	Price bid
4	Local Content Compliance & Percentage Amount (Anneure-03) -Blank
5	**TECHNICAL BID COVER LETTER**
6	**COMMERCIAL BID COVER LETTER**
7	Token EMD as per EOI document
8	This EOI copy duly Signed and Stamped by the Authorized Signatory Of Bidder
9	All Annexure/ Appendices/Formats/ Declarations as **KUDSIT RFP Ref** KUDSIT/0051/Smart Data Center/2023-24 dtd 29.12.2023 on **https://etenders.kerala.gov.in/** addressing to RailTel.
10	Compliance of eligibility criteria related documents as per Clause 3
11	Any relevant document found suitable by bidder

Note:

1. The technical bid should have a 'Index' at the starting and all pages of bid should be serially numbered and should be traceable as per the 'Index'.
2. All the submitted documents should be duly stamped and signed by the Authorized Signatory at each page.
3. The above checklist is indicative only. RailTel may ask for additional documents from the bidders, as per the requirement.

Signature of Bidder ……..
Name: ……..
Place: …….
Date: ……

FORMAT FOR TECHNICAL BID COVER LETTER
(ANNEXURE 5)

(On Company Letter Head)

To,
Joint General Manager (ERS),
RailTel Corporation of India
Limited, Kerala Territory
Office,1st Floor, Eastern Entry
Tower,Ernakulam South Railway
Station ,Ernakulam 682016

Sub: Submission of the response to the EoI Ref No.: EOI NO
RCIL/SR/ERS/2023-24/EOI/8 dtd 19.01.2024

RFP No:- KUDSIT RFP Ref. KUDSIT/0051/Smart Data Center/2023-24 dtd 29.12.2023 on https://etenders.kerala.gov.in/

Request for Proposal for DESIGN, IMPLEMENTATION AND COMMISSIONING OF SMART DATA CENTER AT DIGITAL UNIVERSITY CAMPUS.

We, the undersigned, offer to provide services for Request for DESIGN, IMPLEMENTATION AND COMMISSIONING OF SMART DATA CENTER AT DIGITAL UNIVERSITY CAMPUS.
for KUDSIT in response to the request for proposal dated <insert date> and RFP reference no <> "Request for Proposal DESIGN, IMPLEMENTATION AND COMMISSIONING OF SMART DATA CENTER AT DIGITAL UNIVERSITY CAMPUS.
We are hereby submitting our proposal online, which includes the pre-qualification, technical bid, and commercial bid.

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

We undertake, if our proposal is accepted, to initiate the implementation services related to the assignment not later than the date indicated in this RFP.

We agree to abide by all the terms and conditions of the RFP and related corrigendum(s)/ addendum(s). We would hold the terms of our bid valid for 180 days from the date of opening of the bid as stipulated in the RFP. We hereby declare that as per RFP requirement, we have not been black listed/ debarred by any Central/ State Government and we are not the subject of legal proceedings for any of the foregoing.
We understand you are not bound to accept any proposal you receive.

Signature of Bidder …….
Name: ……..
Place: …….
Date: …….

Place:
Date:

FORMAT FOR COMMERCIAL BID COVER LETTER (ANNEXURE 6)

To,

The Joint General Manager (ERS), RailTel
Corporation of India Limited, Kerala Territory
Office,1st Floor, Eastern Entry Tower,
Ernakulam South Railway
Station ,Ernakulam 682016

EoI Ref No.: EOI NO RCIL/SR/ERS/2023-24/EOI/8 dtd 19.01.2024
& RFP No KUDSIT RFP Ref. KUDSIT/0051/Smart Data Center/2023-24
dtd 29.12.2023 on https://etenders.kerala.gov.in/

Dear Sir,

We, the undersigned Bidder, having read and examined in detail all the RFP documents with respect to **Request for Proposal DESIGN, IMPLEMENTATION AND COMMISSIONING OF SMART DATA CENTER AT DIGITAL UNIVERSITY CAMPUS**, do hereby propose to provide services as specified in the RFP reference No.

Price and Validity

a. All the prices mentioned in our bid are in accordance with the terms & conditions as specified in the RFP. The validity of bid is 180 days from the date of opening of the commercial bid.

b. We are an Indian firm and do hereby confirm that our prices are inclusive of all duties, levies etc., excluding GST.

c. We have studied the clause relating to Indian Income Tax and hereby declare that if any income tax, surcharge on income tax, professional and any other corporate tax is altercated under the law, we shall pay the same.

Unit rates: We have indicated in the relevant schedules enclosed, the unit monthly rates for the purpose of accounting of payments as well as for price adjustment in case of any increase / decrease from the scope of work under the contract.

Deviations:

We declare that all the services shall be performed strictly in accordance with the RFP irrespective of whatever has been stated to the contrary anywhere else in our bid. Further, we agree that additional conditions, if any, found in our bid documents, shall not be given effect to.

We had remitted an EMD as specified in the RFP document terms.

RFP pricing: we further confirm that the prices stated in our bid are in accordance with your instruction to bidders included in RFP documents.

Qualifying data: we confirm having submitted the information as required by you in your instruction to bidders. In case you require any other further information/ documentary proof in this regard before evaluation of our RFP, we agree to furnish the same in time to your satisfaction.

Bid price: we declare that our bid price is for the entire scope of the work as specified in the RFP. These prices are indicated in annexure-commercial bid format attached with our RFP as part of the RFP.

Performance guarantee and Security Deposit: we hereby declare that in case the contract is awarded to us, we shall submit the performance guarantee and Security deposit. We hereby declare that our RFP is made in good faith, without collusion or fraud and the information contained in the RFP is true and correct to the best of our knowledge and belief. We understand that our RFP is binding on us and that you are not bound to accept a RFP you receive.

Signature of Bidder ……..
Name: ……..
Place: ……
Date: …….

TECHNICAL COMPLIANCE SHEET (ANNEXURE 7)

This shall be followed as per the KUDSIT conditions referred in the RFP enclosed.

1) As per clause 5,6 & 7 for technical specification and compliance-Non IT
2) Bill of Materials – Non IT components as contained in RFP

Note: - In the specification wherever support for a feature has been asked for, it will mean that the feature should be available without requiring any other hardware/software/licenses.

Signature of Bidder ……..
Name: ……..
Place: …….
Date: …….

Annexure-8

PRICE BID

To be uploaded as pdf (On Organization Letter Head) EOI NO. RCIL/SR/ERS/2022-23/EOI/8 DTD. 19.01.2024,duly furnishing **the rates and amounts (Inclusive of all taxes and logistics cost) in the BoQ for supply and warranty.**

To,
The Joint General Manager (ERS),
RailTel Corporation of India Limited, Kerala
Territory Office,1st Floor, Eastern Entry Tower,Ernakulam South Railway Station ,Ernakulam 682016

Sir,

We hereby quote our rates with reference to the item wise BoQ as below:

Validate Print Help **Item Wise BoQ**

Tender Inviting Authority: Kerala University of Digital Sciences, Innovation & Technology

Name of Work: Design, Implementation and Commissioning of Smart Data Center At Digital University Campus

Contract No:

Name of the Bidder/ Bidding Firm / Company :											
PRICE SCHEDULE (This BOQ template must not be modified/replaced by the bidder and the same should be uploaded after filling the relevent columns, else the bidder is liable to be rejected for this tender. Bidders are allowed to enter the Bidder Name and Values only)											
NUMBER #	TEXT #	TEXT #	NUMBER #	TEXT #	NUMBER #	NUMBER	NUMBER	NUMBER #	NUMBER #	NUMBER #	TEXT #
Sl. No.	Item Description	Item Code / Make	Quantity	Units	BASIC RATE In Figures To be entered by the Bidder In Rs. P	GST (If applicable in Percentage)	GST Amount in Rs. P	HSN / SAC Code	TOTAL AMOUNT excluding taxes in Rs. P	TOTAL AMOUNT including taxes Rs. P	TOTAL AMOUNT In Words
1	2	3	4	5	7	8	9	10	11	12	13
1	Design, Implementation and Commissioning of Smart Data Center At Digital University Campus										
1.01	Design, Implementation and Commissioning of Smart Data Center At Digital University Campus	item1	1.00	Nos			0.00		0.000	0.000	INR Zero Only
Total in Figures									0.000	0.000	INR Zero Only
Quoted Rate in Words		INR Zero Only									

***1. Pricing of Bill of Materials mentioned in RFP document of KUDSIT clause no 6.1 should be enclosed.**

2. Price Quoted in BoQ should include all the costs as per scope of this tender including the BoM as per clause 6.1.

Signature of Bidder ……
Name: ……
Designation ……
Place: ……
Date: ……

Seal of BA Organization

BILL OF MATERIALS - NON – IT COMPONENTS

CIVIL AND INTERIOR WORKS				
Sl No	**Description**	**UOM**	**QTY**	**Amount**
1	**Flooring**			
a)	**Vitrified Tiles flooring** 12 mm thick (mirror polished) of approved quality and shade for corridor flooring, with 4"skirting & wall in required position with readymade tile adhesive mortar of approved quality, including backing coat of cement mortar 1:3 (1: cement, 3: fine aggregate), joint filling with white slurry, cleaning, curing complete all as directed by the Engineer. The levelling of base floor to be included, laid in pattern in desired shade with adhesive 600 x 600 with pigmented additives to match shade of the stone, cleaning, cost to be inclusive of chemical treatment of approved AQUA SEALANT on surface etc. complete as per directed.	SQR MTR	RO	
b)	**Raised Flooring:** Providing and fixing Access Floor panel of 600x600x32 mm medium grade Filled Steel anti-static high-pressure Lamination of 800H grade (FS800H). Access Floor panel shall be steel welded construction with an enclosed bottom pan with uniform pattern of 64 hemispherical cones. The top and bottom plates of Steel Gauges: top 0.6 mm and bottom 0.7 mm fused spot welded together (minimum 64 welds in each dome and 20 welds along each flange). The panel should be corrosion resistant epoxy coated for lifetime rust protection and cavity formed by the top and bottom plate is filled with Pyro grip non-combustible Portland cementitious core mixed with lightweight foaming compound. The access floor shall be factory finished with Anti- static High-Pressure laminate with non-Warp technology up to 1mm thickness for superior adhesion and Surface flatness within 0. 75mm.Thepanel is to withstand a Concentrated Load of 363 kgs applied on area 25mm x 25mm without collapse in the centre of the panel which is placed on four steel blocks. The panel will withstand and Uniformly Distributed Load (UDL) minimum 1250 kg/sq.mm. And, an impact loadof 50kg all complete as per the approved manufacturer's specification and as per the direction of Engineer-in- charge. All specification must be printed on the side of the panel to ensure the quality of the product. 300/400 mm Finished Floor Height (FFH)	SQR MTR	78	
2	**FALSE CEILING**			
	Modular False Ceiling			

a)	Providing and fixing mineral fibre false ceiling tiles at all heights of size 595X595mm of approved texture, design and pattern. The tiles should have Humidity Resistance (RH) of 99%, Light Reflectance ?85%, Thermal Conductivity k = 0.052 - 0.057 w/m K, Fire Performanceas per (BS 476 pt. – 6 &7) in true horizontal level suspended on interlocking T-Grid of hot dipped all round galvanized iron section of 0.33 mm thick (galvanized @120 gsm) comprising of main T runners of 15x32 mm of length 3000 mm, cross T of size 15x32mm of length 1200 mm and secondary intermediate cross T of size 15x32 mm of length 600 mm to form grid module of size 600x600 mm suspended from ceiling using galvanized mild steel item (galvanised@80gsm) 50 mm long 8mm outer diameter M-6 dash fasteners, 6 mm diameter fullythreaded hanger rod up to 1000 mm length and L-shape level adjuster ofsize 85x25x2 mm, spaced at 1200 mm centre to centre along main 'T'. The system should rest on periphery walls /partitions with the help of GI perimeter wall angle of size24x24X3000 mm made of 0.40 mm thick sheet, to be fixed to the wall with help of plastic at 450 mm centre to centre & 40 mm long dry wall S.S. screws. The exposed bottom portionof all T-sections used in false ceiling support system shall be pre-paintedwith polyester baked paint, for all heights. The work shall be carried outas per specifications, drawings and as per directions of the engineer-in-charge	SQR MTR	22	
3	**Steel Fire rated door**			
	FIRE RATED DOORS: Providing and fixing single or double steel door with 45mm thick flush design shutter comprising of two outer sheets of 18-gauge steel sheets rigidly connected and reinforced inside with continuous vertical 20-gauge stiffeners, spot welded in position at not more than 150mm on centres including void filled with mineral wool(density as per specification), all fittings, mortice lock with handle on both sides, tower bolt, stopper, shop and final painting etc. all complete.Each door to have 300mm x 200mm vision panel fitted with wired fire rated glass			
	a) Door Size- 1200 x 2400	QTY	1	
	b) Door Size - 1000 x 2400	QTY	1	
	c) Door Size - 900 x 2400	QTY	1	
4	**FIRE RATED GLASS DOORS**			
	FIRE RATED GLASS DOORS: Providing and fixing 12 mm thick 2HR Fire Rated Glass Door shutter of approved brand and manufacture,including providing and fixing top & bottom pivot & spring type fixingarrangement and making necessary holes etc. for fixing required door fittings, all complete as per direction of Engineer-in charge			
	a) Door Size- 1200 x 2400	QTY	1	
	b) Door Size- 1000 x 2400	QTY	1	
5	**PAINTING and POP**			
a	Providing and applying white cement-based putty of averagethickness 1 mm, of approved brand and manufacturer, over the plastered wall surface to prepare the surface even and smoothcomplete.	SQR MTR	245	
b	Wall painting with acrylic emulsion paint, having VOC (Volatile Organic Compound) content less than 50 grams/ litre, of approved brand and manufacture, including applying additional coats wherever required,to achieve even shade and colour. Two coats	SQR MTR	245	
c	Fire Rated paint	SQR	245	

		MTR		
6	**Miscellaneous items**			
6.1	Providing Tile puller with suction cup, wooden door ramp of required size and height, wooden steps of required dimensions as per directionof Project-in-charge	NOS	1	
6.2	Nitrile Rubber insulation of 19mm on server room roof and floor	SQR MTR	138	
6.3	Ramp made up of GI angle and MDF board with antiskid laminate	LOT	1	
6.4	Vinyl flooring of 2mm thickness on all other area	SQR MTR	20	
6.5	**DG Set Area Foundation**			
a)	Foundation for DG Area: - Earth work in excavation by mechanical means (Hydraulic excavator) /manual means in foundation, including dressing of sides and ramming of bottoms, also Soil Compacting, including getting out the excavated soil and disposal of surplus excavated soil as directed, within a lead of 50 m. Including the Centring and shuttering including strutting, propping etc. and removal of formwork for DG Foundation.	SQM	15	
b)	Steel reinforcement for R.C.C. work (for DG Set area) ready to use "cut and end" rebars of approved make from factory/workshop to construction site including placing in position and binding all completeup to plinth level (Thermo-Mechanically Treated bars of grade Fe- 500D or more.)	SQM	15	
6.6	**Chiller Area Foundation**			
a)	Foundation for Chiller Area: - Earth work in excavation by mechanical means (Hydraulic excavator) /manual means in foundation, including dressing of sides and ramming of bottoms, also Soil Compacting, including getting out the excavated soil and disposal of surplus excavated soil as directed, within a lead of 50 m. Including the Centring and shuttering including strutting, propping etc. and removal of formwork for Chiller Foundation.	SQM	40	
b)	Steel reinforcement for R.C.C. work (for Chiller Area) ready to use "cut and bend" rebars of approved make from factory/workshop to construction site including placing in position and binding all complete up to plinth level (Thermo-Mechanically Treated bars of grade Fe-500D or more.)	SQM	40	
ELECTRICAL WORKS				
Sl No.	**Descriptio n**	**UOM**	**QTY**	**Amount**
1	**MAIN LT PANEL**			

	Design, fabrication, assembly, wiring, supplying, installation, testing and commissioning of front operated cubicle type compartmentalised front access free standing, dust and vermin proof (IP 20 ingress protection) switchboards suitable for use at 400 volts +/-10%, 3 phase 4wire 50 Hertz system suitable for fault level of required value symmetrical at 400 volts +/-10%, fabricated from 2 mm thick CRCA MS sheets with hinges, gasket (metal-based neoprene) and lockable doors having structural reinforcement with suitable angle/channel/T/flatsections including 3 mm thick gland plates on top and bottom and including lifting hooks and GI earth strip of required size with 2 nos earthing terminals and powder coated paint finish of approved shade over metal surface cleaned and treated with seven tank process complete with interconnections etc. as per specifications, as required and as below.MCCB and MCB operation at 415V AC, and the insulation need to be at 690V AC, all Panels shall be duly labelled with schematic diagram and Danger marks. Complete as required.			
	All Panel/Switchboards shall have provision for entry of cables fromthe top and bottom as required			
	All live accessible parts shall be shrouded and all equipment shall be finger touch proof. The Busbar insulation shall be with heat shrinkable sleeves. SMC/DMC shrouds and Busbar supports shall be used.All meters shall be digital type with LED display.			
A	Main LT Panel 1 as per SLD	NOS	1	
B	Main LT Panel 2 as per SLD	NOS	1	
C	Critical UPS output panel as per SLD	NOS	2	
D	20KVA UPS output panel as per SLD	NOS	1	
E	Chiller Panel as per SLD	NOS	2	
F	DG output Panel as per SLD	NOS	1	
G	160Amp ATS	NOS	2	
H	20Amp ATS	NOS	4	
2	**CABLE AND TERMINATIONS**			
2a	Supply, storing, handling, laying, testing and commissioning of 1100 Volt grade XLPE insulated and sheathed aluminium conductor armoured cables, ISI marked, including providing required gap between adjacent cables (minimum one cable dia.) including providing identification tags in shaft/ cable trays etc. complete as per specifications, SLD as required (Low v/d losses) for multi core of various size. Bidder must add all cables cost lineitem wise as per site survey.	Lot	1	
2b	Supply, storing, handling, laying, testing and commissioning of 1100 Volt grade XLPE insulated and sheathed Aluminium conductor flexible cables, ISI marked, including providing required gap between adjacent cables (minimum one cable dia.) including providing identification tags in shaft/ cable trays etc. complete as per specifications, SLD as required (Low v/d losses)for multi core of various size. Bidder must add all cables cost lineitem wise as per site survey.	LOT	1	
	Cable Termination:			
3	Termination for Aluminium Cables with all glands and lugs asrequired complete in all respect	LOT	1	
4	Termination for Copper Cables with all glands and lugs as requiredcomplete in all respect	LOT	1	
5	***PERFORATED TYPE CABLE TRAYS (GI TRAYS)/ WIREWAYS***			

5a	Termination for Copper Cables with all glands and lugs as requiredcomplete in all respect	1		
6	***PERFORATED TYPE CABLE TRAYS (GI TRAYS)/ WIREWAYS***			
6a	Supplying and installing following size of perforated painted with powder coating M.S. cable trays with perforation not more than 17.5%, in convenient sections, joined with connectors, suspended from the ceiling with M.S. suspenders including bolts & nuts, painting suspenders etc., as requiredincluding bends etc., **INDOOR**			
	300mm WIDTH X 50mm DEPTH X 2.0mm THICKNESS	RO		
	450mm WIDTH X 50mm DEPTH X 2.0mm THICKNESS	LOT	1	
	600mm WIDTH X 50mm DEPTH X 2.0mm THICKNESS	RO		
6b	Ladder type Cable Tray including Bends, nut bolts, connectors, suspenders etc., complete in all respect 450MM WIDTH	LOT	1	
7	**Distribution Board**			
	S/F of following ways MCB DB including incoming and outgoingMCB connection as required:			
A	UPS output DB for supply to racks	NOS	2	
B	Lighting and raw power DB	NOS	1	
8	**INDOOR LIGHT FIXTURES**			
A	Supply and installation of 2'x2' recess mounted LED light panel in the entire area in such a manner that the lux level in the server farm area must be 500 lux measure at 1 meter from floor level at all places.For other area it must be 300 lux measured in a similar manner	NOS	20	
B	Supply and installation of 9" dia round recess mounted LED lightpanel in the entire area	NOS	15	
9	**EARTHING**			
	Supply & installation of the following with clamps, inspection chambers, excavation maintenance free compound as per technical specifications & IS: 3043 standards. Complete. The cost shall includeexcavation, backfilling, compaction, construction of chambers, tools and tackles for excavation & all required civil works. Testing earth resistivity and electrode resistance **(Maintenance free earthing)**			
A	Providing and fixing 25 mm X 5 mm G.I. strip on surface or in recess for connections etc. as required.	MTR	100	
B	Providing and fixing 25 mm X 5 mm copper strip on surface or inrecess for connections etc. as required.	MTR	100	
C	Earthing with copper earth plate 600 mm X 600 mm X 3 mm thick including accessories, and providing masonry enclosure with cover plate having locking arrangement and watering pipe of 2.7 metre long etc	NOS	6	
D	Earthing with GI place including accessories, and providing masonryenclosure with Earthing with G.I. earth plate 600 mm X 600 mm X 6 mm thick cover plate having locking arrangement and watering pipe of 2.7 metre long etc	NOS	6	
10	**POINT WIRING: FOR LIGHT FIXTRURES**			
A	**POINT WIRING WITH FRLS PVC CONDUITS:**			
	(False / Non-False Ceiling Area)			

	Wiring for light point/ fan point/ exhaust fan point/ call bell point with 1.5 sq.mm FRLS PVC insulated copper conductor single core cable in surface / recessed steel conduit, with piano type switch, phenolic laminated sheet, suitable size MS box and earthing the point with 1.5 sq.mm FRLS PVC insulated copper conductor single core cable etc. as required.	LOT	1	
	(SWITCHES & SOCKETS SHALL BE OF MODULAR TYPE)			
B	Single point controlled by 6 Amps switch (conduit / wires / switches)	NOS	8	
C	2 - 3 point controlled by 6 Amps switch (combined rate for 2 / 3 points)	NOS	8	
11	**INDUSTRIAL TYPE SOCKETS AND PLUG TOPS**			
	Supply, store, erection, testing and commissioning of factory-made metal clad totally enclosed with cast aluminium housing with industrial socket/interlocked combined rotary switch and socket with scrapping earth connection and plug top. In case of interlocked socket, the interlocking should ensure that the plug cannot be inserted or withdrawnwhile the switch is in 'ON' position. (All switches & sockets shall be housed in painted MS boxes). The erection rate shall include supply of angle iron frame work and fixing accessories such as grip bolts/grouting/ welding to steel structures etc., All the MCBs shall be of 'D' Curve specifications.			
A	32A, 230V, 2P+E, IP 44 Male top with socket, Plastic moulded industrial socket with suitable straight plug, Surface mounted / Raceway mounted type. The pricing shall include to make the requiredsupports on the floor/Raceway along with required accessories.	NOS	40	
12	**MODULAR TYPE**			
	Supply, erection, testing and commissioning of power points by providing following switches/sockets mounted on suitable size metal coated boxes fixed flush/surface on to the wall with all fixing and wiringaccessories.			
A	6/16 Amps, 3-pin (250 Volts) single phase universal socket with 16Amps single pole switch with indicating lamp. The pin configuration shall be round type. Plug tops are excluded from the scope of supply.(Normal Power)	NOS	8	
B	6/16 Amps, 3-pin (250 Volts) single phase universal socket with 16Amps single pole switch with indicating lamp. The pin configurationshall be round type. Plug tops are excluded from the scope of supply.(UPS Power)	NOS	8	
13	**SUB-MAINS/CIRCUIT MAINS/POWER WIRING**			
	Supply and running of 1100 V grade FRLS PVC insulated copper conductor wires in 2mm thick FRLS PVC/ MS conduits as per technical specification. The rate shall include all wiring & conduit accessories asapplicable.			
A	Supply and running of 2Rx2.5 Sq.mm + 1Rx1.5 Sq.mm FRLS PVCinsulated multistrand copper conductor wire in 25mm dia FRLS PVCconduits for lighting circuits from DB to switch boards & emergencylighting circuits from MCB DBs to SBs and light fixtures	MTR	120	
B	Supply and running of 2Rx2.5 Sq.mm + 1Rx1.5 Sq.mm FRLS PVCinsulated multistrand copper conductor wire in 25mm dia FRLS PVC conduits for Raw power circuits (1x6/16A) from DB to Sockets and looping between the sockets	MTR	220	

C	Supply and running of 2Rx4 Sq.mm + 1Rx2.5 Sq.mm FRLS PVC insulated multistrand copper conductor wire in 25mm dia FRLS PVC conduits for UPS power circuits (3x6/16A) and CAC units from DB toSockets and looping between the sockets	MTR	100	
D	Supply, running and termination of 1C x 10 Sq.mm Flexible FRLSPVC insulated multistrand copper conductor wire in existing conduits/raceways.	MTR	50	
E	Lightning arrestor system as per IS /IEC 62305-3 and IS-3043	No	1	
DIESEL GENERATOR				
Sl. No.	**Descriptio n**	**UOM**	**QTY**	**Amount**
1	Supply, installation, testing and commissioning of 500 KVA Diesel generator with 140 – 160 Litre Fuel tank (Internal) and allaccessories including exhaust stack	NOS	1	
2	Fuel tank (External) of 990 Litre with all piping and valves	NOS	1	
3	DG foundations	NOS	1	
4	Control Cabling	NOS	1	
UPS FOR CRITICAL LOAD and EC FANS plus SSS LOAD				
Sl. No.	**Descriptio n**	**UOM**	**QTY**	**Amount**
1	UPS: Supply, fixing and commissioning of 200KW doubleconversion Modular construction UPS as per specifications.	NOS	2	
1a	Batteries: Supply, interconnection and commissioning of 12V monoblock VRLA SMF batteries suitable for approx. 20 minutes backup on full load.	Set	2	
2	**UPS:** supply fixing of 20KW UPS FOR EC FANS and safetysecurity package critical lighting load	NOS	1	
2a	Batteries: Supply, interconnection and commissioning of 12V monoblock VRLA SMF batteries suitable for approx. 20 minutes backup on full load with Closed Battery Cabinet with doors.	Set	1	
INTEGRATED BUILDING MANAGEMENT SYSTEM				
Sl. No.	**Descriptio n**	**UOM**	**QTY**	**Amount**
A	**Fire Alarm System**			
1	Fire alarm Control panel Comprised of the following systemcomponents: ƒ Operating units, Periphery boards, Power supplies, System enclosures, 170Watt power supply. The panel must supportor comply to : -one (1) to four (4) 'Class B'; one (1) to two (2) 'Class A' -Includes one (1) 'Class A', or two (2) 'Class B' notification appliancecircuits (NACs) - Resettable and non-resettable 24VDC, [nominal] auxiliarypower - Digital alarm communication transmitter (DACT) - Detailed information about the nature and location of the events canalso be displayed, via a backlit, 2"—x—4- 3/4"(5.1 cm.—x—12.1 cm.) LCD screen and the four-way navigation push button at the top of the FACP - UL 864 9th Edition Listed, ULC Listed; FM, CSFM & NYC FireDepartment Approved	Nos	1	

2	**Intelligent Addressable Multi-Sensor Smoke Detector:** Multi- criteria addressable fire detector shall incorporate photoelectric and thermal sensors, Polarity insensitive utilizing SureWireTM technology, Tri-colour detector status LED with 360° viewing, Field-selectable application profiles, Superior EMI immunity, Remote sensitivity- measurement capability, Automatic environment compensation, UL Listed and ULC Listed; FM (#3230, 3210), CSFM (#7272-0067:0258) Approved,	Nos	14	
3	Intelligent Addressable Heat detector: Provides seven (7) field-selectable settings in the 135° í 174°F (57.2° í 78.9°C) temperature range, Tri-colour detector-status light-emitting diode (LED) with 360° viewing, Polarity insensitive utilizing SureWireTM technology, Superior EMI / RFI Immunity, UL521 Listed and ULC Listed; FM (#3230, 3210), CSFM (#72720067:0258) Approved.	Nos.	RO	
4	Intelligent Addressable Type Manual Call Point: Intelligent Manual Fire Alarm Box is constructed of durable, moulded and polycarbonate material that is matte finished in red with raised white lettering Single-action, Pull-down lever shall remain down, until manually reset connectivity shall be Polarity insensitive via SureWireTM technology device programming vide Electronic programming with self-test facility UL Listed, FM, CSFM & NYC Fire Dept. approved	Nos.	4	
5	Short circuit Isolator Base: Requires no programming Does not occupy a device address Local light-emitting diode (LED) indicator UL864 9th Edition Listed and ULC Listed; FM, CSFM & NYC Fire Department Approved	Nos.	2	
6	Conventional Type Hooter with Strobe: The Series Z Notification Appliances feature an easy Snap-On base that is designed to simplify the installation and testing of horns, strobes, and horn/strobes. Wall Mount models feature field selectable candela settings of 15/30/75/110cd and 135/185cd. Ceiling Mount models feature field selectable candela settings of 15/30/75/95cd and 115/177cd. UL Listed, ULC, CSFM, and FM approved. ADA/NFPA Compliant. Red.	Nos.	2	
7	Response Indicator for below false floor detector	Nos.	8	
8	**Intelligent Addressable Relay control module for Hooter+ Control module for 3rd Party equipment (Precision AC unit)** Interfacing and supervising normally open (N.O) or normally closed (N.C) contacts, Integral single-pole, double-throw (SPDT) relay (up to 4 amps), multi-colour light-emitting diode (LED) indicates system status: § GREEN / AMBER / RED, UL Listed & ULC Listed; FM, CSFM and NYC Fire Dept. Approved	Nos	6	
9	**Intelligent Addressable Monitor module for VESDA:** Interfacing and supervising normally open (N.O) or normally closed (N.C) contacts,Integral single-pole, double-throw (SPDT) relay (up to 4 amps), multi- colour light-emitting diode (LED) indicates system status: § GREEN / AMBER / RED, UL Listed & ULC Listed; FM, CSFM and NYC Fire Dept. Approved	Nos	2	
10	2 core x 1.5 sq.mm Armoured FRLS cable	MTR	400	
11	Supply & Installation of CO2 Type Extinguishers - 2 Kg	Nos.	3	
12	Supply & Installation of GLOW SIGNAGE	Nos	3	
B	**Public Address System**			

1	6-Watt Ceiling speaker: The loudspeaker can be used for reproducing music as well as speech. The speaker assemblyconsists of a single-piece, dual cone loudspeaker and frame, witha 100 matching transformer mounted on the back. A circular metalgrille is an integrated part of the front. 1.5W,3W,6-Watt various tapping	Nos	4	
2	9-Watt Ceiling speaker: Rated voltage 100V, 1.5W,3W,6-Wattvarious tapping	Nos	4	
3	Voice Alarm Controller having features like announcement to 6 zones expandable up to 60 zones, built in 240W Power Amplifier, input port of emergency microphone on the front panel, 16 priority levels including emergency, music to selected zones can be played, upto 255 messages can be stored in the internal 16MB flash ROM, individual BGM volume control for each zone, Digital pre-recorded messages can be merged complete as required (in built amplifier) for Container GF & FF (Data Hall)	Nos	1	
4	Mixer Amplifier with Microphone	Nos	1	
5	240Watt Amplifier	Nos	1	
6	2 core 1 sq.mm Armoured	MTR	100	
7	RACK 12U	Nos	1	
C	**CCTV SYSTEM**			
1	IP based Dome camera with fixed lens,4Megapixel Full HD NetworkIR Dome Camera as per specification	Nos	8	
2	NVR: 16 CH Network Video Recorder	Nos	1	
3	43" LED Monitor	Nos	1	
4	24 Port 10/100/1000 Mbps L2 Managed switch	Nos	1	
5	CAT6 Armoured Cable	MTR	300	
6	Video data storage for 3 months at min 12FPS	Nos	1	
D	**ACCESS CONTROL SYSTEM**			
1	Intelligent 8 Reader Door Master Access Controller, via a 10/100Mb Ethernet connection, Support for 500,000 cardholders - Operating voltage 8 to 40 VDC, 8 to 30 VAC - Operating temperature 0 to +50 °C (32°F to122°F) Cardcapacity 40,000	NOS	1	
2	Dual Reader Interface (DRI): Interface module for up to two card readers, supports all popular reader technologies, Auxiliary 12VDC power source (min. voltage input 18VDC), Lock / door strike output (relay driven), Request-to-exit input, Door contact input, Communications status LED, Activity status LED, Power status LED	NOS	1	
3	Eight Reader Interface (ERI): Interface module for up to eight card readers, supports all popular reader technologies, Auxiliary 12VDC power source (min. voltage input 18VDC), Lock / door strike output (relay driven), Request-to-exit input, Door contact input, Communications status LED, Activity status LED, Power status LED	NOS	1	
4	Power Supply Unit with battery back-up for Controller and DoorInterface modules	NOS	3	
5	Biometric Reader for Server room	Nos	1	
6	iCLASS SE R10 Reader (Entry/Exit): iCLASS Seos: 2.4" (6 cm), indoor/Outdoor IP55; IP65 if installed with optional gasket, Wiegand, Clock-and-Data, Open Supervised Device Protocol (OSPD) via RS485, UL94 Polycarbonate	Nos	5	

7	Electromagnetic lock - 600 lbs with ZL / UL bracket, as required -Single Leaf ► Voltage Input:12 VDC /24 VDC ► Current Draw: 12V / 500mA; 24V/250mA (±5%) ► Holding Force: Up to 600 lbs (272 kg)	Nos	2	
8	Electromagnetic lock - 600 lbs with ZL / UL bracket, as required - Double Leaf	Nos	2	
9	Resettable Emergency Release Switch	Nos	1	
10	Magnetic Contact	Nos	4	
11	Access Control Software & time attendance: l Anti-pass back3 wrong PIN mode Time scheduling Manual system override capabilitiesEnrolment reader support Multi-user, multi-tasking environment	Lot	1	
12	PC for Access control software	Nos	1	
13	6 core x 1 Sq.mm - Armoured	MTR	150	
14	4 core x 1 Sq.mm - Armoured	MTR	150	
15	2 core x 1 Sq.mm - Armoured	MTR	150	
16	Cat6 cable – Armoured	MTR	50	
17	Exist Switch	Nos	2	
E	**Gas Based Fire suppression system -Server room (EXTERNALTO SMART RACK) and UPS room**			
1	SITC of CCOE Approved Seamless NOVEC1230 Cylinder and Valve Assembly, 100 Litres. Capacity, OEM Factory filled with Novec 1230 Suppression Liquid, pressurized to 42 bar.	Nos	2	
2	Master Completer Kit complete with Solenoid, Pneumatic actuators,Pressure Gauge, Low pressure supervisory switch, Discharge hoses, Flexible actuation hoses and connectors. For Multiple cylinder system -VDS/UL approved	Lot	1	
3	Slave Completer Kit complete with Pneumatic actuators, Pressure Gauge, Low pressure supervisory switch, Dischargehoses, Flexible actuation hoses, manual actuator and connectors. -VDS/UL approved	Lot	1	
4	SITC of Gas Agent -NOVEC1230 Fire Protection Fluid, OEMFactory Filled per Kgs.	Kgs	178	
5	SITC of type UL / Vds Listed Nozzles, 360 Deg / 180 Deg Throw,selection as per approved hydraulic flow calculations.	Nos	5	
6	Manifold to cater Multiple Cylinder Bank	Nos	1	
7	MS Powder coated 2"x2" hollow box frame Cylinder(s) support assembly with manifold support system duly fastened to the slab floor & wall / Ceiling complete with cylinder brackets / U clamps etc. Need to distribute the floor load	Nos	4	
8	SITC of NOVEC Piping & Manifold as required, Sch 40; ASTMA106 Gr B, as per flow calculations for the specific hazard volume and stand to hold, position & Support the Manifold and Piping properly. Complete with Pressure testing for piping with nitrogen as per NFPA 2001 & Flushing with Nitrogen prior to handover.	Lot	2	
	Detection Systems			

1	Supply installation Testing & commissioning of Single zone Gas Release Panel facility to connect Manual Abort/Release switches. The Panel shall provide Potential free contacts for Firstknock, second knock, Trouble / Fault Status. The Panel shall be Complete with Red Colour Housing, Power supply unit, Batterycharger & batteries	Nos	1	
2	Manual Release Switch	NOS	1	
3	Abort Switch	NOS	1	
F	**Rodent VHFO system**			
1	VHFO master controller can drive up to 20 transducers.	Nos	2	
2	TRANSDUCERS	Nos	10	
3	Wire Bundle	MTR	200	
4	PVC Conduit 20mm	MTR	200	
G	**Water leak detection**			
1	Conventional 6 Zone Water Leak detection panel with Modbus RS485	Nos	2	
2	Water leak detection cable sensor	MTR	54	
3	Electronic Hooter	Nos	2	
4	2 core x 1.5 sq.mm Armoured cable	MTR	30	
H	**Aspiration Detector / VESDA (Early warning Detection)**			
1	Single channel Aspirating Detector, coverage 500 SQM (2*25 MPipe length maximum) for server room only	Nos	2	
2	Single channel Aspirating Detector, coverage 800 SQM (2*60 MPipe length Maximum)	Nos	4	
3	Power Supply with Battery backup Unit	Set	2	
4	Air termination Nozzles with Capillary set	Nos	5	
5	Aspiration 25mm OD CPVC Sampling Pipes with accessories	MTR	50	
6	Electronic Hooter with mounting arrangement	MTR	2	
7	2C x 1.5 sq.mm PVC insulated sheathed FRLS copper conductor armoured cable.	MTR	100	
I	**Building Management System**			
1	Server class workstation - The vendor may provide the specificationof servers as per their solution for smooth functioning of the BMS solution with all upgrades for 5 years operation.	Nos	1	
2	19" colour, Flat Screen Type Professional HD monitor for above client workstation	Nos	1	
3	A 4 size LaserJet Printer suitable for the application, with driver software.	Nos	1	
4	**Proposed Integrated Software for BMS & FAS (Graphic Software)**			
	Building management software shall include alarm handling, scheduling, trending, reporting engine, database system, system activity log, historical data management, real time vector graphics, system backup and restore, HTML based documentation and help. Graphical user interface-based software for iBMS monitoring with 200BMS points (including Soft +Hard)	Set	1	
J	**Third Party Integration**			
	Third Party Integration: The Protocol Integrator/ Convertor shall beCapable to Integrate Open protocol systems on BACnet /Modbus/LONWORKS/M-Bus/J-Bus Protocol Made available on IP, oron serial RS 485 / 232 interface. (Separate Integrator for			

	each system)			
1	Integrator for PAC for Server room (20Soft Points considered foreach PAC Unit) on MODBUS RTU PROTOCOL.	Set	1	
2	Integrator for UPS (20Soft Points considered for each UPS) onMODBUS RTU PROTOCOL.	Set	1	
3	Integrator for DG (20Soft Points considered for each DG) onMODBUS RTU PROTOCOL.	Set	1	
4	Integrator for PDU (20Soft Points considered for each PDU) onMODBUS RTU PROTOCOL.	Set	1	
5	Integrator for WLD (20Soft Points considered for each WLD) onMODBUS RTU PROTOCOL.	Set	1	
6	FAS soft integration (100 Soft Points)	Set	1	
K	**Direct Digital Controllers: BACnet/IP**			
	Networkable 32 Bit DDC Controllers with I/O points as per enclosed IO List, inbuilt real time clock, Battery backup. The controllers shall becapable of standalone operation with real time clock and historical database. The DDC's shall be capable of peer-to-peer communication without help of system interface controller or PC. The DDCs shall be with suitable IP 54 enclosure complete with all wiring and accessories. BTL Approved			
1	DDC for Server room Temperature & RH, WLD, Gas release status.	Set	1	
L	**Field Sensors**			
1	Temperature and RH sensor for server room	Nos.	4	
2	Diesel level switch	Nos.	2	
3	H2 sensor for Battery room	Nos.	1	
M	**Cable and Conduit**			
1	2 Core x 1 sq. mm FRLS Armoured Cable for control cabling	MTR	100	
2	4 Core x 1 sq. mm FRLS Armorer Cable for control cabling	MTR	500	
3	Communication cable: FRLS Armoured CAT6 Cable	MTR	500	
N	**Datacenter Infrastructure Monitoring System (DCIM)**			
1	DCIM software with 100 user lic, operating in HA mode with integration of all devices through IP network for monitoring critical parameters. Bidder to consider supplying and installing all hardware (ifrequired) for communication between field devices and DCIM throughIP protocol. (No extra payment will be made for any additional hardware or cabling or termination for commissioning and smooth functioning of DCIM tool) The vendor has to provide DCIM solution inside the rack and the vendor has to provide DCIM solution including the server.	Lot	1	
O	**COMFORT AIR CONDITIONING SYSTEM**			
1	Wall split inverter type BEE 5 star rated 3-ton AC units with stabiliser	Nos	4	
2	Wall split inverter type BEE 5 star rated 2-ton AC units with stabiliser	Nos	2	
3	Refrigerant copper pipe with insulation for supply and return	MTR	80	
4	Drain pipe	MTR	60	
5	Outdoor stand as per site Conditions	Nos	6	
6	Power cable (between IDU to ODU)	MTR	100	
INTEGRATED SMART RACK SYSYEM				
Sl. No.	**Descriptio n**	**UOM**	**QTY**	**Amount**
1	8 nos 42U height racks with each rack capacity of 7.5KW and 2 nos42 U height Rack with 20KW	LOT	1	

2	In rack units of minimum 30KW or above each 4 nos (N+1/ N+N)units alongside rack as per OEM design			
3	Intelligent redundant PDU for each rack			
4	Fire, smoke detection and suppression system inside rack units			
5	Biometric access for racks			
6	Environmental Monitoring system			
7	Internal lighting			
8	All internal and external cabling and piping complete in all respect			
9	Outdoor installation as per site conditions including fabrication work if required.			
CHILLER, ACCESSORIES AND LOW SIDE WORK				
Sl. No.	**Description**	**UOM**	**QTY**	**Amount**
1	**Air Cooled Inverter Scroll Chillers**			
	Supply, Installation, Testing & Commissioning & Handingover of the following:			
1.1	Chiller Package			
	Supply of 60TR (212 kW) Actual capacity, Air Cooled inverter scroll chiller with scroll compressor/s, The Unit should be equipped with Integrated, Microprocessor Controller. The unit shall be supplied with all auxiliary equipment's, controls centre, inter connecting piping, water flow safety trip, electrical power panel, control wiring including insulation, painting etc. The above chiller is to be selected for Ambient temp condition of 400C. Chilled Water in / out temperature shall be 13 ºC / 20 ºC. Chiller operating voltage is 380 V to 440 V. The Chiller shallhave inbuilt BMS card.	Nos	2	
	The unit mounted starter panel shall be complete with IP- 55 protectionconsisting of power disconnecting switches with fuses, star-delta starters, for compressor motors, under/over voltage trip, single phase preventers, communication card which can accept 4-20 mA or 2-10 Vdcanalog signal.			
	All components shall be mounted on welded steel base frame, structural steel profiles/panels made out of galvanized sheet steel, protected with primary coat & finished with acrylic paint.			
	The chiller shall be mounted on the Vibration isolators.			
	Necessary Computer Selection with model / catalogue shall be attached			
	Commissioning of the Chiller after installation			
	Actual Capacity: 60 TR (1W+1S) @ 13_0C leaving Water condition &20_0C entering water condition.			
	Location - Trivandrum, Ambient - 40_0C			
	Chiller should have the provision to provide Modbus RS485 for BMS			
	Chiller should have the provision to provide NO/NC pfc for Runstatus and TRIP status.			
	Chiller Should have the provision to accept NO/NC pfc for RemoteON/OFF through BMS.			
1.2	Lifting, Shifting & Erection of Chillers at Ground Floor	Lot	1	
1.3	Chiller Plant manager	Lot	1	
2	Chilled Water Centrifugal Pump Sets			
	Primary Chilled Water Pumpsets			

	End Suction Pumps Factory assembled Primary Water circulation pump set with mechanical seal including SS 316 gland plate, TEFC induction motor, Base Plate, Bronze Impeller as per Specifications. Costof Pump set should be inclusive of Starter Panel for each pump set separately as detailed in technical specification. Pumps shall have inbuiltVFD	Nos	2	
	The Pump set shall be placed on the inertia block with vibrationisolators. GI sheet cover/Shed shall be provided for the pumps			
	Chilled Water Flow Rate: As per site requirement.			
	Casing / Impeller: CI / Bronze			
	Qty: 2 Nos (1 W + 1 S)			
3	Chilled Water Piping with Insulation			
	Providing and fixing in position SS/PPR heavy class pipes cut to required lengths and installed with all welded joints. Providing and fixing in position the necessary fittings like elbows, tees, reducers, Flanges, Nut & bolt, support arrangements, PUF saddles & etc.			
	Insulation of Chilled Water Piping SS / PPR			
	Class 'O' closed cell Nitrile rubber insulation of suitable thickness (Min 25 mm Thk) to prevent condensation and finished with 26G AL. Cladding.			
	The quote shall include water for flushing pipes until they are clean,water required for pressure testing and RO water for final filling of pipes.			
	100 mm dia / 5.4 mm Wall Thickness / 32 mm Thk Insulation	Mtr	320	
	50 mm dia / 4.5 mm Wall Thickness / 25 mm Thk Insulation	Mtr	30	
	25 mm dia / 4.0 mm Wall Thickness / 25 mm Thk Insulation	Mtr	30	
4	Valves and other Accessories			
4.1	Butterfly Valves - PN16 or greater rating			
	Providing and fixing in position the following wafer type Butterfly Valves complete with companion slip on flanges, nuts, bolts, gaskets etc.as required with pressure rating. The valve shall be insulated with Class'O' closed cell Nitrile rubber insulation of suitable thickness (Min 25 mm Thk) to prevent condensation and finished with 26G AL. Cladding.			
	100mm dia	Nos	78	
	80 mm dia	Nos	RO	
	50 mm dia	Nos	16	
4.2	Ball Valves - PN16 or greater rating			
	Providing and fixing in position the following wafer type Ball Valves.The valve shall be insulated with Class 'O' closed cell Nitrile rubber insulation of suitable thickness (Min 25 mm Thick) to prevent condensation and finished with 26G AL. Cladding.			
	32 mm dia	Nos	RO	
	25 mm dia	Nos	16	
4.3	`Y' Strainer - PN16 or greater rating			

	Providing and fixing in position the following 'Y' strainer. The valve shall be insulated with Class 'O' closed cell Nitrile rubber insulation of suitable thickness (Min 25 mm Thk) to prevent condensation and finished with 26G AL. Cladding.			
	100 mm dia	Nos	4	
	80 mm dia	Nos	RO	
4.4	Semi-Automatic Balancing Valves - PN16 or greater rating			
	Balancing Valve shall be of factory calibrated direct, balancing valves of complete with companion slipon flanges as per the specifications. The valve shall be insulated with Class 'O' closed cell Nitrile rubber insulation of suitable thickness (Min 25 mm Thk) to preventcondensation and finished with 26G AL. Cladding.			
	100 mm dia	Nos	2	
4.5	Automatic Air Vents - PN16 or greater rating			
	Automatic Air Vents shall be installed at chiller supply and returnheader and at all high sections of piping.	Nos	8	
4.6	Thermometers - Dial Type - 4" Dia (ALL SS TYPE) - PN16 orgreater rating / IP 65 rated			
	Thermometers of approved make & shall be of mercury in steel typewith range suitable for the temperature services. It should be installed in the thermowells as explained in the tender specifications. The valveshall be provided with isolation valve. Range 0 - 500 C	Nos	4	
4.7	Bourdan Tube Pressure Gauges (ALL SS TYPE) - PN16 or greaterrating / IP 65 rated.			
	Pressure gauges shall be of Bourdon (100 mm) type with range selected so that normal operation is near to middle of the scale. Syphons and cocks to be provided along with SS snubber. The valveshall be provided with isolation valve. Range 0 - 10 Kg/sqcm	Nos	8	
4.8	Flexible connections at Chiller and pump Outlet & inlet - PN16			
	Providing and fixing in position the following flexible connectionwith limiting bolts.			
	100 mm dia	Nos	8	
4.9	Non-Return Valves - PN16 or greater rating			
	Providing and fixing in position the following Non- Return Valve. Thevalve shall be insulated with Class 'O' closed cell Nitrile rubber insulation of suitable thickness (Min 25 mm Thk) to prevent condensation and finished with 26G AL. Cladding.			
	100 mm dia	Nos	2	
4.10	Flow Switch - PN16 or greater rating	Nos	2	
4.11	provision of threaded short pipe of 1/2" mm dia for installing DP sensor. One number on suction line of pump and one number on discharge line of pump with isolation valve.	Set	2	
4.12	provision of threaded short pipe of 25mm dia for installing thermowell. One number on return header and one number on supplyheader.	Set	2	
5	Motorized Butterfly Valves for Chillers - PN16 or greater rating / Actuator IP67 and Input power 230V.			

	Motorized Butter Fly Valves for Chillers, Supply & Installation of Motorized valve with electronic actuator and linkage including control wiring. (Suitable for BMS application, actuator shall receive and send ON and OFF status to BMS) .The motorized valve with actuator drive with positioned having suitable pushing force for the application and limit and torques switches and protections based on them shall also be supplied .Motorized butterfly valves of sizes as listed below with cast iron (IS210 Gr.FG260) body, black nitrile/EPDM rubber seat stainless steel (SS410) PTFC coated shafts, complete with matching flanges, locking devices, extended flow control level, insulation. The valve shallbe suitable for outdoor installation.			
	100 mm dia (160 US GPM) 10 L/s - For Air Cooled Chillers	Nos	2	
6	Closed Type Expansion Tank - - PN16 or greater rating			
	Closed Water Expansion Tank of SS construction with interchangeable EPDM Butyl rubber membrane bladder complete with 32 mm thick class 'O' closed cell nitrile rubber insulation, and finished with 26G aluminium cladding. Tank to be minimum 100 Ltrs capacity and tank shall be mounted on MS stands (The capacity may change as			
	The tank shall have 25 mm system connection and 25mm drain and over flow and 25mm quick fill and makeup connection, provision for pressure gauge and switches etc. Tank shall be insulated as per specifications and provided with pressure switches. The expansion tank shall be supplied andinstalled with all accessories required for proper functioning of the system			
	Tank shall be complete with Pumps required in the configuration of N + 1 (1 working + 1 Stand By). The cost shall include necessary valvepackage & control logic panel out door type / Canopy	Lot	1	
7	Inline Air Separator with super Air vent- PN16 or greater rating			
	Air cum sediment Separator – 100 mm dia, Flow Rate 160 USGPM(10 L/s), Air separator shall be supplied with super air vent.	Nos	1	
8	Chemical Dosing Pot			
	Supply, Installation, testing & Commissioning of SS Fabricated Doser pot with Chemical for pre-cleaning designed to withstand system pressure of at least 5 Kg/cm². The dosing equipment shall beinstalled across the high pressure and low-pressure headers at the suitable location. The required chemicals for first dose to be considered. The dosing pot shall be of atleast 5 Liter capacity withrequired valves, piping and accessories	Nos	1	
9	Steel Supports for piping and other accessories.	kg	500	
10	Pedestals for Chiller, Pupmp sets, Chemical dosing pot & Expansion tank	lot	1	
11	De-humidifier			
	Supply, Installation, testing and Commissioning of de humidifier (Nominal Capacity 96 ltrs/day) with supporting arrangement, drain pipe (32mm dia CPVC Pipe with 9mm Nitrile rubber Class 'O' insulation, 20Rmt), Cabling, sensors and other required accessories	Nos	2	
12	Make-up water Tank			

	Supply and Installation of SS Make-up water tank of 1000 litres capacity. The Quote shall include supporting arrangement, Float valve, CPVC pipe at inlet with isolation valve (25mm dia, 10Rmt). Outlet pipe shall be PPR/SS Pipe with isolation valve (25mm dia, 10Rmt). the outlet pipe shall connect to suction pipe of pressurization pump.	Nos	1	
CLOSED LOOP COOLING SOLUTION				
IN-RACK CRAC UNITS, LOW SIDE AND ACCESSORIES				
Sl. No.	**Description**	**UOM**	**QTY**	**Amount**
1	Supply, installation, testing and commissioning of Microprocessor based chilled water In-rack cooling unit. The cooling capacity shall be at least 30kW or net sensible or above at below mentioned parameters. The unit shall have inbuilt control valve, BMS card and sequential controller. Chilled Water In 13 ^{0} C Chilled water out 20^0 C	NOS	4	
2	Supply and Installation SS Flexible hose of 32mm Dia with threaded connections at both sides. Each set shall include both supply and return pipe.	SET	8	
3	Pressure testing of RC: It includes the pressure testing and flushing and cleaning of RC unit at 125 psig, piping associated tothe unit, and completing the work as per the guidelines and instruction of Project Engineer.	NOS	8	
4	Supply and Installation of Drip Tray: It includes the supply andinstallation of GI Drip tray (of 20G) with proper MS/High-tech supports as per guidelines and insulating the tray with 13mm thickClosed Cell nitrile rubber Insulation. Work to be completed as perProject Manager guidelines.	SQM	15	
5	Supply & installation of GI Class "B" pipe for humidifier makeup water line with nitrile rubber class "O" of 9 mm thick complete with fittings, accessories, bends, elbows, tees, flanges, tapping's, wall sleeves, hangers supports, anchors & etc.	RMT	RO	
	25 mm dia	RMT	RO	
	32 mm dia	RMT	RO	
	50 mm dia	RMT	RO	
6	Supply & installation of CPVC pipe for condensate drain with nitrilerubber class "O" of 13 mm thick complete with fittings, accessories, bends, elbows, tees, flanges, tapping's, wall sleeves, hangers supports,anchors & etc.			
6.1	25 mm dia	MTR	25	
6.2	32 mm dia	MTR	RO	
6.3	50 mm dia	MTR	30	
7	Cat 6 straight cable for Grouping of ACRC units	MTR	40	
8	RJ 45 connectors for CAT 6	NOS	16	
9	Misc (Cable Tie, Insulation Tape, Sticker)	lot	1	
10	Coupler with Union Joint to connect chilled water pipe and flexible hose (32mm Dia) SS304 material. Each set consist of two number onefor supply and one for return.	Set	8	
11	Supply installation of 19mm thick rubber insulation inside the In-rackRC cooling unit	MTR	16	
12	Supply installation of 19mm thick tube rubber insulation for 32mmflexible hose including all material for insulation	MTR	32	

13	Dummy Plug for tapping of future unit -32mm dia	NOS	8	
CERTIFICATION CHARGES				
	Uptime Tier III Design and Certification Charges.	Nos	1	
AMC CHARGES				
1	Post warranty AMC charges for all items for 3 years	NOS	1	

The RFP published by KUDSIT for the work vide **KUDSIT RFP Ref.** KUDSIT/0051/Smart Data Center/2023-24 dtd 29.12.2023.on **https://etenders.kerala.gov.in/**
as circulated May please be referred for any clarifications.

The submission of EMD,PG and Agreement with RCIL Non Judicial paper by the selected Bidder will be sacrosanct selected Bidder .

*Detailed sheet with split up of taxes to be enclosed by the bidder
Any software /hardware other than above, to achieve the objective of cited work shall be facilitated by the prospective BA/SI without additional financial implications.

Note: The material supplied will be subjected to consignee/third party inspection as applicable and advised by the final customer.

Signature of Bidder ……..
Name: ……..
Place: …….
Date: …….

Company Seal

Annexure – 9

PROFORMA FOR PERFORMANCE BANK GUARANTEE

(On Stamp Paper of ₹ Two Hundred/requisite value)

To,
The Joint General Manager,
RailTel Corporation of India Limited, Kerala
Territory Office,1st Floor, Eastern Entry Tower,
Ernakulam South Railway Station ,Ernakulam 682016

KUDSIT RFP Ref. KUDSIT/0051/Smart Data Center/2023-24
dtd 29.12.2023 on **https://etenders.kerala.gov.in/**

1. In consideration of the RailTel Corporation of India Limited (CIN: L64202DL2000GOI107905),having its registered office at Plate-A, 6th Floor, Office Block Tower-2, East Kidwai Nagar, New Delhi – 110023 (herein after called "RailTel") having agreed to exempt ..... (CIN : ……) having its registered office at ……. (here in after called "the said Contractor") from the demand, under the terms and conditions of Purchase Order No ..... dated …….. made between RailTel and.....for (hereinafter called "the said Agreement") of security deposit for the due fulfilment by the said Contractor of the terms and condition contained in the said Agreement, or production of a Bank Guarantee for Rs. ……. (Rs. …….. Only). We ..... (indicate the name and address and other particulars of

the Bank) (hereinafter referred to as 'the Bank') at the request of.....contractor do hereby undertake to pay RailTel an amount not exceeding Rs. ……. (Rs …… Only) against any loss or damage caused to or suffered or would be caused to or suffered by the RailTel by reason of any breach by the said Contractor of any of the terms or conditions contained in the said Agreement.

2. We, ... the Bank do hereby undertake to pay the amounts due and payable under this Guarantee without any demur, merely on demand from the RailTel stating that the amount is claimed is due by way of loss or damage by the said Contractor of any of terms or conditions contained in the said Agreement by reason of the Contractor's failure to perform the said Agreement. Any such demand made on the Bank shall be conclusive as regards the amount due and payable by the Bank under this Guarantee. However, our liability under this guarantee shall be restricted to an amount not exceeding Rs …… (Rs.....Only).

3. We, ……. the Bank undertake to pay the RailTel any money so demanded notwithstanding any dispute or disputes raised by the Contractor in any suit or proceedings pending before any court or Tribunal relating thereto our liability under this present being, absolute and unequivocal. The payment so made by us under this Bond shall be a valid discharge of our liability for payment there under and the Contractor shall have no claim against us for making such payment.

4. We, ……. the Bank further agree that the Guarantee herein contained shall remain in fullforce and effect during the period that would be taken for the performance of the said Agreement and that it shall continue to be enforceable till all the dues of the RailTel under or by virtue of the said Agreement have been fully paid an its claims satisfied or discharged or till RailTel certifies that the terms and conditions of the said Agreement have been fully and properly carried out by the said contractor and accordingly discharges this Guarantee. Unless a demand or claim under the Guarantee is made on us in writing on or before .....We shall be discharged from all liability under this Guarantee thereafter.

5. We, …… the Bank further agree with the RailTel that the RailTel shall have fullest liberty without our consent and without affecting in any manner our obligations hereunder to vary any of the terms and conditions of the Agreement or to extend time of to postpone for anytime or from time to time any of the powers exercisable by the RailTel against the said Contractor and to forbear or enforce any of the terms and conditions relating to the said Agreement and we shall not be relieved from our liability by reason of any such variation, or extension to the said Contractor or for any forbearance, act or omission on the part of RailTel or any indulgence by the RailTel to the said Contractor or by any such matter or thing whatsoever which under the law relating to sureties would, but for this provision, have affect of so relieving us.

This Guarantee will not be discharge due to the change in the constitution of the Bank or the

Contract
or.

(..... indicate the name of Bank ……) lastly undertake not to revoke this Guarantee during its currency except with the previous consent of RailTel in writing.

Dated the …… Day of …… 2023 for .....(Name of Bank)
In the presence of Witnesses:
1. Signature With Date 2. Signature With Date Name Name

Encl: SFMS PG
Report

Signature of Bidder ……..
Name: ……
Designation …..... Seal of BA Organization
Place: ……
Date: ……..

Annexure-10

NON-DISCLOSURE AGREEMENT

This Non-Disclosure Agreement (this "Agreement") is made and entered into on this_____day of

2024 (the "Effective Date") at .

By and between

RailTel Corporation of India Limited, (CIN: L64202DL2000GOI107905), a Public Sector Undertaking under Ministry of Railways, Govt. of India, having its registered and corporate office at Plate-A, 6th Floor, Office Block, Tower -2, East Kidwai Nagar, New Delhi-110023 & Southern Region office at 1-10-39 to
44, 6A, 6th Floor, Gumidelli Towers, Begumpet Airport Road, Opp. Shoppers Stop, Hyderabad-500

016, (hereinafter referred to as 'RailTel'), which expression shall unless repugnant to the context or meaning thereof, deem to mean and include its successors and its permitted assignees of the ONE PART,

AND
) (CIN:_____), a company duly incorporated under

the provisions of Companies Act, having its registered office at

, (hereinafter referred to as '_____'), which expression shall unless repugnant to the context or meaning thereof, deem to mean and include its successors and its permitted assignees of OTHER PART

RailTel and_____shall be individually referred to as "Party" and jointly as "Parties"

WHEREAS, RailTel and_____ , each possesses confidential and proprietary information related to its business activities, including, but not limited to, that information designated as confidential or proprietary under Section 2 of this Agreement, as well as technical and non-technical information, patents, copyrights, trade secrets, know-how, financial data, design details and specifications, engineering, business and marketing strategies and plans, forecasts or plans, pricing strategies, formulas, procurement requirements, vendor and customer lists, inventions, techniques, sketches, drawings, models, processes, apparatus, equipment, algorithms, software programs, software source documents, product designs and the like, and third party confidential information (collectively, the "Information");

WHEREAS, the Parties have initiated discussions regarding a possible business relationship for

WHEREAS, each Party accordingly desires to disclose certain Information (each Party, in such disclosing capacity, the "Disclosing Party") to the other Party (each Party, in such receiving capacity, the "Receiving Party") subject to the terms and conditions of this Agreement.

NOW THEREFORE, in consideration of the receipt of certain Information, and the mutual promises made in this Agreement, the Parties, intending to be legally bound, hereby agree as follows:

1. Permitted Use.

(a) Receiving Party shall:

(i) hold all Information received from Disclosing Party in confidence;

(ii) use such Information for the purpose of evaluating the possibility of entering into a commercial arrangement between the Parties concerning such Information; and

(iii) restrict disclosure of such Information to those of Receiving Party's officers, directors, employees, affiliates, advisors, agents and consultants (collectively, the "Representatives") who the Receiving Party, in its reasonable discretion, deems need to know such Information, and are bound by the terms and conditions of (1) this Agreement, or (2) an agreement with terms and conditions substantially similar to those set forth in this Agreement.

(b) The restrictions on Receiving Party's use and disclosure of Information as set forth above shall not apply to any Information that Receiving Party can demonstrate:

(i) is wholly and independently developed by Receiving Party without the use of Information of Disclosing Party;

(ii) at the time of disclosure to Receiving Party, was either (A) in the public domain, or (B) known to Receiving Party;

(iii) is approved for release by written authorization of Disclosing Party; or

(iv) is disclosed in response to a valid order of a court or other governmental body in the India or any political subdivision thereof, but only to the extent of, and for the purposes set forth in, such order; provided, however, that Receiving Party shall first and immediately notify Disclosing Party in writing of the order and permit Disclosing Party to seek an appropriate protective order.

(c)Both parties further agree to exercise the same degree of care that it exercises to protect its own Confidential Information of a like nature from unauthorized disclosure, but in no event shall a less than reasonable degree of care be exercised by either party.

2. <u>Designation.</u>

(a) Information shall be deemed confidential and proprietary and subject to the restrictions of this Agreement if, when provided in:

(i) written or other tangible form, such Information is clearly marked as proprietary or confidential when disclosed to Receiving Party;or

(ii) oral or other intangible form, such Information is identified as confidential or proprietary at the time of disclosure.

3. **Cooperation.** Receiving Party will immediately give notice to Disclosing Party of any unauthorized use or disclosure of the Information of Disclosing Party.

4. **Ownership of Information**. All Information remains the property of Disclosing Party and no license or other rights to such Information is granted or implied hereby.

Notwithstanding the foregoing, Disclosing Party understands that Receiving Party may currently or in the future be developing information internally, or receiving information from other parties that may be similar to Information of the Disclosing Party. Notwithstanding anything to the contrary, nothing in this Agreement will be construed asa representation or inference that Receiving Party will not develop products, or have products developed for it, that, without violation of this Agreement, compete with the products or systems contemplated by Disclosing Party's Information.

5. **No Obligation**. Neither this Agreement nor the disclosure or receipt of Information hereunder shall be construed as creating any obligation of a Party to furnish Information to the other Party or to enter into any agreement, venture or relationship with the other Party.

6. **Return or Destruction of Information.**

(a) All Information shall remain the sole property of Disclosing Party and all materials containing any such Information (including all copies made by Receiving Party) and its Representatives shall be returned or destroyed by Receiving Party immediately upon the earlier of:

(i) termination of this Agreement;

(ii) expiration of this Agreement; or

(iii) Receiving Party's determination that it no longer has a need for such Information.

(b) Upon request of Disclosing Party, Receiving Party shall certify in writing that all Information received by Receiving Party (including all copies thereof) and all materials containing such Information (including all copies thereof)have been destroyed.

7. **Injunctive Relief**: Without prejudice to any other rights or remedies that a party may have, each party acknowledges and agrees that damages alone may not be an adequate remedy for any breach of this Agreement, and that a party shall be entitled to seek the remedies of injunction, specific performance and/or any other equitable relief for any threatened or actual breach of this Agreement

8. **Notice.**

(a) Any notice required or permitted by this Agreement shall be in writing and shall be delivered as follows, with notice deemed given as indicated:

(i) by personal delivery, when delivered personally;

(ii) by overnight courier, upon written verification of receipt; or

(iii) by certified or registered mail with return receipt requested, upon verification of receipt.

(b) Notice shall be sent to the following addresses or such other address as either Party specifies in writing.

RailTel Corporation of India limited:
Attn:
Addre
ss:
Phone:
Email.:
Attn:
Addr
essP
hone:
Email

9. Term, Termination and Survivability.

(a) Unless terminated earlier in accordance with the provisions of this agreement, this Agreement shall be in full force and effect for a period of years from the effective date hereof.
(b) Each party reserves the right in its sole and absolute discretion to terminate this Agreement by giving the other party not less than 30 days' written notice of such termination.
(c) Notwithstanding the foregoing clause 9(a) and 9 (b) , Receiving Party agrees that its obligations, shall:
    (i) In respect to Information provided to it during the Term of this agreement, shall survive and continue even after the expiry of the term or termination of this agreement; and
    (ii) not apply to any materials or information disclosed to it thereafter.

10. **Governing Law and Jurisdiction**. This Agreement shall be governed in all respects solely and exclusively by the laws of India without regard to its conflicts of law principles. The Parties hereto expressly consent and submit themselves to the jurisdiction of the courts of New Delhi.

11. **Counterparts.** This agreement is executed in duplicate, each of which shall be deemed to be the original and both when taken together shall be deemed to form a single agreement

12. **No Definitive Transaction**. The Parties hereto understand and agree that no contractor agreement with respect to any aspect of a potential transaction between the Parties shall be deemed to exist unless and until a definitive written agreement providing for such aspect of the transaction has been executed by a duly authorized representative of each Party and duly delivered to the other Party (a "Final Agreement"), and the Parties hereby waive, in advance, any claims in connection with a possible transaction unless and until the Parties have entered into a Final Agreement.

13. Settlement of Disputes:

(a) The parties shall, at the first instance, attempt to resolve through good faith negotiation and consultation, any difference, conflict or question arising between the parties hereto relating to or concerning or arising out of or in connection with this agreement, and such negotiation or consultation shall begin promptly after a Party has delivered to another Party a written request for such consultation.
(b) In the event of any dispute, difference, conflict or question arising between the parties hereto, relating to or concerning or arising out of or in connection with this agreement, is not settled through good faith negotiation or consultation, the same shall be referred to arbitration by a sole arbitrator.

14. The sole arbitrator shall be appointed by CMD/RailTel out of the panel of independent arbitrators maintained by RailTel, having expertise in their respective domains. The seat and the venue of arbitration shall be New Delhi. The arbitration proceedings shall be in accordance with the provision of the Arbitration and Conciliation Act 1996 and any other statutory amendments or modifications thereof. The decision of arbitrator shall be final and binding on both parties. The arbitration proceedings shall be conducted in English Language. The fees and cost of arbitration shall be borne equally between the part

15. CONFIDENTIALITY OF NEGOTIATIONS

Without the Disclosing Party's prior written consent, the Receiving Party shall not disclose to any Person who is not a Representative of the Receiving Party the fact that Confidential Information has been made available to the Receiving Party or that it has inspected any portion of the Confidential Information or that discussions between the Parties may be taking place.

16. REPRESENTATION

The Receiving Party acknowledges that the Disclosing Party makes no representation or warranty as to the accuracy or completeness of any of the Confidential Information furnished by or on its behalf. Nothing in this clause operates to limit or exclude any liability for fraudulent misrepresentation.

17. ASSIGNMENT

Neither this Agreement nor any of the rights, interests or obligations under this Agreement shall be assigned, in whole or in part, by operation of law or otherwise by any of the Parties without the prior written consent of each of the other Parties. Any purported assignment without such consent shall be void. Subject to the preceding sentences, this Agreement will be binding upon, inure to the benefit of, and be enforceable by, the Parties and their respective successors and assigns.

18. EMPLOYEES AND OTHERS

Each Party shall advise its Representatives, contractors, subcontractors and licensees, and shall require its Affiliates to advise their Representatives, contractors, subcontractors and licensees, of the obligations of confidentiality and non-use under this Agreement, and shall be responsible for ensuring compliance by its and its Affiliates' Representatives, contractors, subcontractors and licensees with such obligations. In addition, each Party shall require all persons and entities who are not employees of a Party and who are provided access to the Confidential Information, to execute confidentiality or non- disclosure agreements containing provisions no less stringent than those set forth in this Agreement. Each Party shall promptly notify the other Party in writing upon learning of any unauthorized disclosure or use of the Confidential Information by such persons or entities.

19. NO LICENSE

Nothing in this Agreement is intended to grant any rights to under any patent, copyright, or other intellectual property right of the Disclosing Party, nor will this Agreement grant

the Receiving Party any rights in or to the Confidential Information of the Disclosing Party, except as expressly set forth in this Agreement.

20. RELATIONSHIP BETWEEN PARTIES:

Nothing in this Agreement or in any matter or any arrangement contemplated by it is intended to constitute a partnership, association, joint venture, fiduciary relationship or other cooperative entity between the parties for any purpose whatsoever. Neither party has any power or RCIL/end Customer to bind the other party or impose any obligations on it and neither party shall purport to do so or hold itself out as capable of doing so.

21. UNPULISHED PRICE SENSITIVE INFORMATION (UPSI)

Agrees and acknowledges that_____, its Partners, employees, representatives etc.,by virtue of being associated with RailTel and being in frequent communication with RailTel and its employees, shall be deemed to be "Connected Persons" within the meaning of SEBI (Prohibition of Insider Trading) Regulations, 2015 and shall be bound by the said regulations while dealing with any confidential and/ or price sensitive information of RailTel._____shall always and at all times

comply with the obligations and restrictions contained in the said regulations. In terms of the said regulations,_____shall abide by the restriction on communication, providing or allowing access to any Unpublished Price Sensitive Information (UPSI) relating to RailTel as well as restriction on trading of its stock while holding such Unpublished Price Sensitive Information relating to RailTel.

22. MISCELLANEOUS.

This Agreement constitutes the entire understanding among the Parties as to the Information and supersedes all prior discussions between them relating thereto. No amendment or modification of this Agreement shall be valid or binding on the Parties unless made in writing and signed on behalf of each Party by its authorized representative. The failure or delay of any Party to enforce at any time any provision of this Agreement shall not constitute a waiver of such Party's right thereafter to enforce each and every provision of this Agreement. In the event that any of the terms, conditions or provisions of this Agreement are held to be illegal, unenforceable or invalid by any court of competent jurisdiction, the remaining terms, conditions or provisions hereof shall remain in full force and effect. The rights, remedies and obligations set forth herein are in addition to, and not in substitution of, any rights, remedies or obligations which may be granted or imposed under law or in equity.

IN WITNESS WHEREOF, the Parties have executed this Agreement on the date set forth above.

RailTel Corporation of India Limited:

By

Name:

Title:

By

Name:

Title:

Witnesses:

Signature of Bidder ……..
Name: ……
Designation ….....….
Place: ……
Date: ……..

Seal of BA Organization

Pre Bid Agreement -Annexure 11

(If Applicable)

(To be executed in presence of Public notary on non-judicial stamp paper of the value of Rs. 100/-. The stamp paper has to be in the name of the BA)

This Pre-Bid Agreement (the "**Agreement**") is made at New Delhi on this_____Day of (month) 2023.**BETWEEN**

M/s. RailTel Corporation Of India Limited, (CIN: L64202DL2000GOI107905) a company registered under the Companies Act 1956, having its registered and corporate office at Plate-A, 6th Floor, Office Block, Tower-2, East Kidwai Nagar, New Delhi India – 110 023 and Southern Regional office at 1-10-39 to 44, 6A, 6th Floor, Gumidelli Towers, Begumpet Airport Road, Opp. Shoppers Stop, Hyderabad-500 016 (hereinafter referred to as**"RailTel"** which expression shall, unless repugnant to the context or meaning thereof, be deemed toinclude its successors and permitted assigns) of the **FIRSTPART. AND**

M/s. XXXX , (CIN:_____) a company registered under the Companies Act 1956, having its registered office at and its Corporate Office located at , (hereinafter referred to as **" XXXX "** which expression shall, unless repugnant to the context or meaning thereof, be deemedto include its successors and permitted assigns) of the **SECOND PART.**

RailTel and_____shall be hereinafter individually referred to as "**Party**"

And collectively as "**Parties**."

Whereas,

A) RailTel is a "Mini Ratna (Category-I)" CPSU of Ministry of Railways, having exclusive right of way along Indian Railways and has created an OFC backbone and associated transport and network infrastructure to provide carrier class telecom services. RailTel has Unified License issued by DoT to provide a range of telecom services. RailTel also has two tier III certified data centres at Secunderabad and Gurugram. RailTel has created a slew of digital services like cloud, hosting, hosted Video Conferencing service, Aadhar Services, Content delivery platform, WiFi as a service etc. RailTel has strong capabilities in managing telecom infrastructure, MPLS network infrastructure, data centre services likeIaaS (Infrastructure as a Service) and PaaS (Platform as a Service).

B) _____(DETAILS OF SECOND PART)

C) RailTel had floated an **EOI No:**

dated_____pursuant to the RFP floated by End Customer for"

for End Customer Organization for agreed Scope of Work"(hereinafter referred as "The said work/project/RFP"), and subsequently, based on the offer submitted by M/s XXXX towards the RailTel's EOI, M/s XXXX has been selected by RailTel as Business Associate for the said Project.

D) RailTel is in the process of participating in the RFP issued by end customer, complete details of which have deliberately not been shared with XXXX and XXXX has waived its right toget the RFP document of end customer owing to confidentiality concern raised by RCIL/end Customer. However, a limited scope of work on 'need to know basis' and as detailed in clause 1.7 below, which will be carried out by XXXX has been shared with XXXX and based on the representation of "XXXX" that "XXXX" has read the said limited Scope of Work and has understood the contents thereof and that "XXXX" has sufficient experience to execute the said limited and defined scope of work, the Parties have mutually decided to form a " Business association" wherein RailTel shall act as the "Bidder" and "XXXX" shall act as the "business associate" in terms of the said RFP and in accordance to the terms agreed hereunder;

E) RailTel shall submit Rupees YYYY as BG against pre integrity pact at the time of submission of bidas an Integrity Pact bank guarantee to end customer and accordingly "XXXX" shall submit Rupees ZZZZ asBG of pre integrity pacton back to back basis to RailTel before final submission of the said bid to end customer. **(This is applicable on cases to case basis as per KUDSIT requirement. May please read in conjunction of the current RFP.)**

F) Party hereby acknowledges that RailTel has received Rs.

/-(Rs._____) from M/s XXXX as per the Terms and conditions of EOI no. dated_____.

G) The Parties are thus entering into this Agreement to record the terms and conditions of their understanding and the matters connected therewith.

RailTel has agreed to extend all the necessary and required support to "XXXX" during the entire contract period.

NOW, THEREFORE, in consideration of the mutual covenants set forth herein it is hereby agreed by and between the Parties hereto as under:

1. SCOPE OF CO-OPERATION

1.1. Parties have agreed to form a "business association" to co-operate with each other on an exclusive basis with respect to execution of the said Project.

1.2. It has been further agreed between the Parties that Parties shall not bid individually for the said Project nor shall they enter into any arrangement with other parties for the purpose of bidding for the said Project during the validity of this Agreement.

1.3. The Parties also agree that the terms of the said EOI for limited and defined scope of work along with the Corrigendum's issued thereafter shall apply mutatis-mutandis to this Agreement.

1.4. The Parties further agree that they shall, enter into a 'Definitive Agreement' containing elaborate terms and conditions, role and responsibilities and respective scope of work of this Agreement after declaration of RailTel as the successful bidder of the said Project.

1.5. RailTel shall submit the PG amounting Rs. XXXXX, earnest money deposit / EMD declaration (whichever is applicable) and performance bank guarantee to **End customer** and accordingly "XXXX" shall submit to RailTel, BG amounting to Rs._____as the earnest money deposit. Further, XXXX shall also pay the performance bank guarantee in proportionate to the extent of its defined scope of work.

1.6. RailTel may further retain some portion of the work mentioned in the end organization's RFP, where RailTel has competence so that overall proposal becomes most winnable proposal.

XXXX agrees, undertakes and acknowledges that following shall be Scope of Work of XXXX out of the total project work.:

2. Technical Terms – As per KUDSIT document

3. TERM AND TERMINATION

3.1. This Agreement shall come into force as of the date of signing and shall continue to be in full force and effect till the complete discharge of all obligations, concerning the carrying out of the

said Project, except terminated earlier by the Parties in terms of this Agreement or in terms of the said project, whichever is applicable.

3.2. This Agreement can be terminated by either Parties forthwith in the event of happening of the following events:

(a) End customer announces or notifies the cancellation of the said Project and / or withdrawing the said RFP.

(b) The receipt of an official communication that End customer chooses not to proceed with RailTel for the said Project or RailTel is not short listed by End customer.

(c) Material breach of any of the terms and conditions of this Agreement by either of the Parties and the same is not rectified by the defaulting Party beyond 15 (fifteen) days (ora reasonable time period as mentioned under the notice issued by the other Party) from the date of receipt of notice from the other Party to cure the said breach.

3.3. Parties agree and understand that as of the execution of this Agreement they are contractually bound and obligated to perform the services, obligations and the scope of work entrusted, should RailTel be declared as the successful bidder of the said Project. Any Party shall not withdraw its participation subsequent to execution of this Agreement, at any point in time except in case of material breach of any of the terms of the Agreement.

3.4. In case “XXXX” breach the terms of Agreement i.e. defaulting party in such case the balance unsupplied quantity or service shall be completed by RailTel i.e. non-defaulting party and cost for completion of that balance unsupplied quantity or service of such defaulting party shall be executed by RailTel at the risk and cost of such defaulting party.

4. Liability:

It is understood that the parties are entering into this pre-bid teaming agreement for requirement of submission of bid against the RFP floated by end customer for Implementation of Network Security System and Integration for end Customer Organization. Parties acknowledge and agree that “XXXX” shall be completely liable for the successful execution of this project, in relation to its defined scope of work (as detailed in clause 1.7 above), fully complying RCIL/end Customer requirements . Accordingly, it is agreed that

Notwithstanding anything contained in the RFP document, “XXXX” shall be liable to RailTel

with regard to its obligations and liability to complete the agreed and defined scope of work as detailed in clause 1.7 above..

5. EXCLUSIVITY

Parties agree to co-operate with each other for the purpose of the said Project on an exclusive basis with respect to applying for, submitting and execution of the said Project including providing of technical demo, proof of concept for the agreed and defined scope of work.

6. PAYMENT TERMS

The payment terms between the parties shall be only on receipt of payment from end customer.

7. TAXES

Parties agrees that they will comply with the Indian Income Tax Act in force from time to time and pay Indian Income Tax, as may be imposed / levied on them by the Indian Income Tax Authorities, for the payments received by them for the Project under this agreement and any other taxes, cess, surcharge, etc. for their respective scope of works;

8. INDEMNIFICATION

8.1 Parties agree to and undertake to indemnify and hold each other, its officers, directors, agents and employees harmless, from and against any and all claims, demands, causes of action, losses, damages, costs and expenses (including attorney's reasonable fees, costs of investigation and defence) arising out of or resulting from any claim, action or other proceeding(including any proceeding by any of the indemnifying party's employees, agents or contractors)based upon:

i. any breach or contravention of any of the terms, conditions, covenants of this Agreement by the Party;

ii. Unethical business practices;

iii. any acts or omission of the Party and/ or any of its employees, agents or contractors, and the liability for damages to property arising from or out of party operations in connection with the performance of this agreement;

iv. any claim for taxes that might arise or be imposed due to this performance of Services hereunder;

v. any representation or warranty or information furnished by the Party being found to be false;

vi. Parties failure to pay all applicable compensation to its respective personnel;

vii. death or personal injury to any person;

viii. destruction or damage to any property by acts or omissions of either Party, its representatives or personnel;

ix. any violation/non-compliance by the Party with any applicable laws governmental regulations or orders;

x. any third party liability;

xi improper handling or misuse of the Confidential Information of the Party(ies) by the Party

8.2 XXXX shall be liable to all risks and consequences (including the risk of payments) suffered in the performance of services under the Project and undertakes to indemnify RailTel from and against any non payments (of RailTel's share payable to RailTel), recoveries and claim from End Customer or any other cost or losses incurred due to default/non performance on part of XXXX.

9. COMPLIANCES TO STATUTORY OBLIGATIONS

9.1. Parties shall also obtain and keep in place necessary insurance policies, mediclaim policies, group insurance schemes of adequate value to cover their workmen, supervisors, etc. with regard to any accidents, injury or the liability under the Employee Compensation Act.

9.2. Parties shall observe and be responsible for the compliance of all labour laws (including labour cess) as per government notifications and shall maintain necessary records for the same and shall submit the same to RailTel when so required.

9.3. Parties shall duly maintain all records / registers required to be maintained by them under various labour laws mentioned above and shall produce the same before the concerned Statutory Authorities whenever required and called upon to do so.

10. LEGAL STATUS

This Agreement constitutes a contractual relationship and shall relate solely to the Project and shall not extend to other activities or be construed to create a corporation, body corporate, partnership or any other form of legal entity.

11. REPRESENTATIONS AND COVENANTS

11.1. Each Party represents and warrants to the other Party as follows:

11.1.1. That it has full capacity, power and RCIL/end Customer and has obtained all requisite consents and approvals to, enter into and to observe and perform this Agreement and to consummate the transactions contemplated hereunder. Each of the Persons / personnel executing this Agreement on behalf of the each of the Parties have full capacity and RCIL/end Customer to sign and execute this Agreement on behalf of the respective Parties;

11.1.2. The execution, delivery and consummation of, and the performance by it, of this Agreement shall not conflict with, violate, result in or constitute a breach of or a default under, (a) any contract by which it or any of its assets or properties, are bound or affected, and/or (b) its constitutional documents;

11.1.3. This Agreement constitutes its legal, valid and binding obligations, enforceable against it, inaccordance with their terms under Applicable Statutory Law(s);

11.1.4. It has the right, RCIL/end Customer and title to execute this Agreement;

12. SUBCONTRACTING BETWEEN PARTIES

If a Party subcontracts certain supplies or services pertaining to its scope of work to the other party,then the resulting relationship between such parties shall be governed by a separate

subcontract. This Agreement shall not in any way be affected thereby except as stated otherwise in this Agreement.

13. GOVERNING LAW AND JURISDICTION

The construction, validity and performance of this Agreement shall be governed in all respects by the Laws of India. The Parties hereby submit to the exclusive jurisdiction of the Indian courts at Delhi only.

14. GOOD FAITH NEGOTIATION AND DISPUTE RESOLUTION

The parties shall, at the first instance, attempt to resolve through good faith negotiation and consultation, any difference, conflict or question arising between the parties hereto relating to or concerning or arising out of or in connection with this agreement, and such negotiation or consultation shall begin promptly after a Party has delivered to another Party a written request for such consultation.

In the event of any dispute, difference, conflict or question arising between the parties here to, relating to or concerning or arising out of or in connection with this agreement, is not settled through good faith negotiation or consultation, the same shall be referred to arbitration by a sole arbitrator.

The sole arbitrator shall be appointed by CMD/RailTel out of the panel of independent arbitrators maintained by RailTel, having expertise in their respective domains. The seat and the venue of arbitration shall be New Delhi. The arbitration proceedings shall be in accordance with the provision of the Arbitration and Conciliation Act 1996 and any other statutory amendments or modifications thereof. The decision of arbitrator shall be final and binding on both parties. The arbitration proceedings shall be conducted in English Language. The fees and cost of arbitration shall be borne equally between the parties.

15. FORCE MAJEURE

"Force Majeure Event" shall mean any event beyond the reasonable control of the affected Party including acts of God, fires, earthquakes, strikes, pandemic, epidemics, lock down, and labor disputes, acts of war or terrorism, civil unrest, economic and financial sanctions, or acts or omissions of any Governmental RCIL/end Customer occurring on or after the Signature Date.

No Party shall be liable to the other if, and to the extent, that the performance or delay in performance of any of its obligations under this Agreement is prevented, restricted, delayed or interfered with, due

to a Force Majeure Event. The Party affected by Force Majeure Event shall promptly inform the other Party in writing and shall furnish within 30 (thirty) days thereafter, sufficient proof of the occurrence and expected duration of such Force Majeure Event. The Party affected by Force Majeure Event shall also use all reasonable endeavor's to mitigate the negative effects of such Force Majeure Event on such Party's ability to perform its contractual obligations. In the event of a Force Majeure Event, the Parties shall immediately consult with each other in order to find an equitable solution and shall use all reasonable endeavors to minimize the consequences of such Force Majeure Event.

The occurrence of a Force Majeure Event shall however, not relieve a Party of any obligation to pay any sum due under this Agreement prior to the occurrence of the Force Majeure Event.

If the Force Majeure lasts for more than 6 (six) months, the Parties may mutually decide in writing on the future course of action with respect to this Agreement.

16. INTELLECTUAL PROPERTY RIGHTS

16.1. Each Party shall remain the sole owner of all industrial or intellectual property rights, Technical Data, Know-How, designs, specifications and the like, generated or acquired before the signature, or beyond the scope of this agreement.

16.2. Each Party shall remain the sole owner of all industrial or intellectual property rights, technical data, know-how, design specifications and the like generated solely by that Party during the course of the performance of this agreement and shall not be free to used it by the other party and if the other party uses that intellectual property rights prior permission shall be taken with paying necessary fees for such rights.

16.3. In case of joint development, the work-share and associated ownership of intellectual property of each Party shall be mutually agreed upon and defined in advance in the definitive agreement for the specific program. However, should any invention be jointly made by the Parties in the performance of this agreement, without neither Party being in a position to reasonably claim the ownership of said intellectual property right, the said right shall be jointly owned by the Parties and the corresponding measures of protection for both Parties of the said right as may be practicable shall be mutually agreed by both Parties and cost for such registration of such right shall be borne by the parties proportionately as per the ownership of the rights.

16.4 As on date, Parties confirms that there are no infringements of any Intellectual Property Rights of the products contemplated under this agreement, in accordance with the laws prevailing in the country.

16.5. The Parties undertake and confirm that the Technology / Knowhow / Design owned by each of them and intended to be put into use for execution of various Projects pursuant to this agreement has been originally developed by each of such Parties. The Parties are entitled to all the Intellectual Property Rights in Technology / Knowhow / Design intended to be put into use for execution of various Projects and no third-party Intellectual Property Rights have been put intouse either in their original or modified form without proper authorization of such third party. The Parties further vouchsafes that the foregoing undertaking is actuated by truth and accuracy and no misrepresentation is being put into use for inducing each other to enter into this agreement.

17. CONFIDENTIALITY

17.1. During the term of this agreement, either party may receive or have access to technical information, as well as information about product plans and strategies promotions, customers and related non-technical business in formation which the disclosing party considers to be confidential ("Confidential Information as per RFP document"). In the event Confidential Information is to be disclosed, the Confidential Information must be marked as confidential at the time of disclosure, or if disclosed orally but stated to be confidential, and be designated as confidential in writing by the disclosing party summarizing the Confidential Information disclosed and sent to the receiving party within thirty (30) days after such oral disclosure.

17.2. Confidential Information may be used by the receiving party only with respect to the performance of its obligations under this Agreement, and only by those employees of the receiving party and its subcontractors who have a need to know such information for purposes related to this Agreement, provided that such subcontractors have signed separate agreements containing substantially similar confidentiality provisions. The receiving party must protect the Confidential Information of the disclosing party by using the same degree of care to prevent the unauthorized use, dissemination or publication of such Confidential Information, as the receiving party uses to protect its own confidential information of like nature.

17.3. The obligations is not applicable to any information which is:

17.3.1. Already known by the receiving party prior to disclosure;

17.3.2. Publicly available through no fault of the receiving party;

17.3.3. Rightfully received from a third party without being responsible for its confidentiality;

17.3.4. Disclosed by the disclosing party to a third party without being responsible for its Confidentiality on such third party;

17.3.5. Independently developed by the receiving party prior to or independent of the disclosure;

17.3.6. Disclosed under operation of law;

17.3.7. Disclosed by the receiving party with the disclosing party's prior written approval.

17.4 XXXX agrees and acknowledges that XXXX, its Partners, employees, representatives etc.,by virtue of being associated with RailTel and being in frequent communication with RailTel and its employees, shall be deemed to be "Connected Persons" within the meaning of SEBI (Prohibition of Insider Trading) Regulations, 2015 and shall be bound by the said regulations while dealing with any confidential and/ or price sensitive information of RailTel. XXXX shall always and at all times complywith the obligations and restrictions contained in the said regulations. In terms of the said regulations, XXXX shall abide by the restriction on communication, providing or allowing access to any Unpublished Price Sensitive Information (UPSI)relating to RailTel as well as restriction on trading of its stock while holding such Unpublished Price Sensitive Information relating to RailTel

17.5 Notwithstanding anything contained in this agreement, XXXX undertakes, agrees and acknowledges that being RailTel's Business Associate, XXXX shall maintain utmost confidentiality in relation to said Project. XXXX further, undertakes that any information relating to said Project which isor will be disclosed/ divulged by RailTel on need to know basis, will be received and treated by XXXXas strictly confidential and XXXX shall not, without the prior written consent of the RailTel or as expressly permitted herein, disclose or make available to any other person such information.

18. NOTICES

Notices, writings and other communications under this Agreement may be delivered by hand, by registered mail, by courier services or facsimile to the addresses as set out below:

To
RailTel Corporation of India Limited

To: RailTel Corporation of India Ltd Kind Attn: Executive Director / Southern Region
Address: 1-10-39 to 44, 6A, 6th Floor, Gumidelli Towers, Begumpet Airport Road, Opp. Shoppers Stop, Hyderabad- 500 016 No.: +91-40-27788000

To
XX
XX

To:
XXXX

Kind Attn: _____Address: _____ Mob. No.:
Email:

19. AMENDMENT

No amendment or modification or waiver of any provision of these presents, nor consent to any departure from the performance of any obligations contained herein, by any of the Parties hereto, shall in any event be valid and effective unless the same is in writing and signed by

the Parties or their duly authorized representative especially empowered in this behalf and the same shall be effective only in respect of the specific instance and for the specific purpose for which it is given.

20. PRIOR UNDERSTANDING

This Agreement contains the entire Agreement between the Parties to this Agreement with respect to the subject matter of the Agreement, is intended as a final expression of such Parties' agreement with respect to such terms as are included in this Agreement is intended as a complete and exclusive statement of the terms of such agreement, and supersedes all negotiations, stipulations, understanding, Agreements, representations and warranties if any, with respect to such subject matter, which precede or accompany the execution of this Agreement.

21. GENERAL

21.1. Binding Effect:

This Agreement shall be binding upon and inure to the benefit of the Parties here to and their respective legal successors.

21.2. Counterpart:

This Agreement may be executed simultaneously in 2 (two) counterparts, each of which shall be deemed to be original and all of which together shall constitute the same Agreement.

21.3. Non-Partnership:

21.3.1. This Agreement shall be on a principal-to-principal basis and shall not create any principal- agent relationship between the Parties.

21.3.2. Nothing in this Agreement shall be deemed to constitute a partnership or joint venture between the Parties or otherwise entitle either Party to have an RCIL/end Customer to bind the other Party for any purpose.

21.4. Severability:

In the event any provision of this agreement is held invalid or un-enforceable by a court of competent jurisdiction, such provision shall be considered separately and such determination shall not invalidate the other provisions of this agreement and annexure/s which will be in full force and effect.

21.5. Waiver:

A failure by any Party to exercise or enforce any rights conferred upon it by this Agreement shall not be deemed to be a waiver of any such rights or operate so as to bar the exercise or enforcement thereof at any subsequent time.

21.6. Time is of essence:

Time is the essence of this agreement and the Parties herein agree and acknowledge to abide by the same.

22. Miscellaneous

22.1. No Party to this agreement will have any rights or obligations arising from or in relation to this agreement in excess of those rights and obligations expressly declared herein.

22.2. No Party to this agreement is entitled to sell, assign or otherwise transfer any of its rights and/or obligations arising from or in relation to this agreement to any third party, without the prior written consent of the other Party of this agreement.

22.3. Each Party shall be solely responsible for its own actions or failures to act and for its own commitments and undertakings. Neither Party shall present itself as the representative or agent of the other Party, nor shall it have the power or the RCIL/end Customer to commit the other Party, unless it receives the other Party's prior written consent.

22.4. No release shall be made by any Party to the news media or the general public relating to this agreement and/or the subject matter thereof without prior written approval of the other Party..

22.5. During the term of this agreement, each party shall refrain from taking any action or attempt to take any action with the intent of impairing or causing prejudice to the business relationship, whether existing or prospective that subsists between the other party and its customers and business partners. Each party shall also desist from inducing or influencing or attempting to induce or influence any customer or business partner, whether existing or prospective of the other party, resulting into prejudice or detriment to business prospects of the other party.

Furthermore, Parties shall not compete with or cause detriment to the business prospects of each other by making use of confidential information, whether in its embodied or disembodied form, shared pursuant to this agreement.

IN WITNESS WHEREOF, the Parties hereto have executed this Agreement as of the day and year first above written.

For RailTel Corporation Of India Limited
XXXX

Authorised Signatory
Signatory

Name:
Name: Designation:
Designation:

For

Authorized

In Presence
of witness:

Signature:
Signature: Name:
Name: Address:
Address

Signature of Bidder ……..
Name: ……
Designation ….....….
Place: ……
Date: ……..

Seal of BA Organization

Annexure 12

FORMAT FOR AFFIDAVIT TO BE UPLOADED BY BA ALONGWITH THE EOI DOCUMENTS

(To be executed in presence of Public notary on non-judicial stamp paper of the value of Rs.100/- .The paper has to be in the name of the BA) **

I_____ (Name and designation)** appointed as the attorney/authorized signatory of the BA (including its constituents), M/s (hereinafter called the BA) for the purpose of the EOI documents for the work of _ as per the EOI No. ……..of (RailTel Corporation of India Limited), do hereby solemnly affirm and state on the behalf of the BA including its constituents as under:

1. I/we the BA (s), am/are signing this document after carefully reading the contents.
2. I/we the BA(s) also accept all the conditions of the EOI and have signed all the pages in confirmation thereof.
3. I/we hereby declare that I/we have downloaded the EOI documents from RailTel website www.railtelindia.com. I/we have verified the content of the document from the website and there is no addition, no deletion or no alternation to be content of the EOI document. In case of any discrepancy noticed at any stage i.e., evaluation of EOI, execution of work or final payment of the contract, the master copy available with the RailTel Administration shall be final and binding upon me/us.
4. I/we declare and certify that I/we have not made any misleading or false representation in the forms, statements and attachments in proof of the qualification requirements.
5. I/we also understand that my/our offer will be evaluated based on the documents/credentials submitted along with the offer and same shall be binding upon me/us.
6. I/we declare that the information and documents submitted along with the EOI by me/us are correct andI/we are fully responsible for the correctness of the information and documents, submitted by us.
7. I/we undersigned that if the certificates regarding eligibility criteria submitted by us are found to be forged/false or incorrect at any time during process for evaluation of EOI, it shall lead to forfeiture of the EOI EMD besides banning of business for five years on entire RailTel. Further, I/we (insert name of the BA)** and all my/our constituents understand that my/our constituents understand that my/our offer shall be emd rejected.
8. I/we also understand that if the certificates submitted by us are found to be false/forged or incorrect atany time after the award of the contract, it will lead to termination of the contract, along with forfeiture of EMD/SD and Performance guarantee besides any other action provided in the contract including banning of business for five years on entire RailTel.

DEPONENT

VERIFICATION

SEAL AND SIGNATURE OF THE BA

I/We above named EOI do hereby solemnly affirm and verify that the contents of my/our above affidavit are true and correct. Nothing has been concealed and no part of it is false.

DEPONENT

SEAL AND SIGNAURE OF

THE BA Place:
Dated:

**The contents in Italics are only for guidance purpose. Details as appropriate, are to be filled in suitably by BA. Attestation before Magistrate/Notary Public.

Signature of Bidder …….
Name: ……
Designation ….....
Place: ……
Date: ……..

Seal of BA Organization

KERALA UNIVERSITY OF DIGITAL SCIENCES, INNOVATION AND TECHNOLOGY (DIGITAL UNIVERSITY KERALA)

REQUEST FOR PROPOSAL (RFP) DESIGN, IMPLEMENTATION AND COMMISSIONING OF SMART DATA CENTER AT DIGITAL UNIVERSITY CAMPUS

(RETENDER)

DIGITAL UNIVERSITY KERALA

Curating a responsible digital world

CONTENTS

1. INVITATION FOR BIDS

1.1. IMPORTANT DATES

Sl. No.	Activity	Timeline
1	Release of RFP	29-12-2023
2	Site Survey by bidders on or before	05-01-2024
3	Last date of receipt of pre-bid queries in the specified format available in RFP by E-mail	06-01-2024
4	Pre-bid Meeting date	Not Applicable
5	Posting of response to queries and release of corrigendum, if any	Not Applicable
6	Last date for submission of Bids	12-01-2024
7	Date of opening of pre-qualification bids	13-01-2024
8	Date of opening of Technical Bids	13-01-2024
9	Date of opening of Commercial Bids	Will be announced later

1.2. DISCLAIMER

The information contained in this RFP or subsequently provided to bidders, whether verbally or in documentary or any other form by or on behalf of Kerala University of Digital Sciences, Innovation and Technology (Digital University Kerala) or any of its employees or advisers, is provided to bidders on the terms and conditions set out in this RFP and such other terms and conditions subject to which such information is provided.

This RFP is issued by Kerala University of Digital Sciences, Innovation and Technology (Digital University Kerala). This RFP is not an agreement and is neither an offer nor invitation by KUDSIT to the prospective bidders or any other person. The purpose of this RFP is to provide interested parties with information that may be useful to them in the formulation of their bid pursuant to this RFP. This RFP includes statements, which reflect various assumptions and assessments arrived at by Digital University Kerala in relation to building of Data Center. Such assumptions, assessments and statements do not purport to contain all the information that each applicant may require.

This RFP may not be appropriate for all persons, and it is not possible for Digital University Kerala, its employees or advisers to consider the objectives, technical expertise and particular needs of each party who reads or uses this RFP.

The assumptions, assessments, statements and information contained in this RFP, may not be complete or adequate. Each bidder should, therefore, conduct its own investigations and analysis and should check the accuracy, adequacy, correctness, reliability and completeness of the assumptions, assessments and information contained in this RFP and obtains independent advice from appropriate sources. Information provided in this RFP to the bidders is on a wide range of matters, some of which depends upon interpretation of law.

KUDSIT, makes no representation or warranty and shall have no liability to any person, including any Bidder under any law, statute, rules or regulations or tort, principles of restitution or unjust enrichment or otherwise for any loss, damages, cost or expense which may arise from or be incurred or suffered on account of anything contained in this Tender or otherwise, including the accuracy, adequacy, correctness, completeness or reliability of the Tender and any assessment, assumption, statement or information contained therein or deemed to form part of this Tender or arising in any way in this Bid Stage.

Digital University Kerala also accepts no liability of any nature whether resulting from negligence or otherwise howsoever, caused arising from reliance of any Bidder upon the statements contained in this Tender.

Digital University Kerala may in its absolute discretion, but without being under any obligation to do so, update, amend or supplement the information, assessment or assumptions contained in this Tender. The issue of this Tender does not imply that Digital University Kerala is bound to select a Bidder or to appoint the Preferred Bidder, as the case may be, for the Project and Digital University Kerala reserves the right to reject all or any of the Bidders or Bids without assigning any reason whatsoever.

Digital University Kerala reserves all the rights to cancel, terminate, change or modify this selection process and/or requirements of bidding stated in the RFP, at any time without assigning any reason or providing any notice and without accepting any liability for the same

The information given is not an exhaustive account of statutory requirements and should not be regarded as a complete or authoritative statement of law. Digital University Kerala accepts no responsibility for the accuracy or otherwise for any interpretation or opinion on the law expressed herein. Digital University Kerala its employees and advisers make no representation or warranty and shall have no liability to any person including any applicant under any law, statute, and rules or regulations or tort, principles of restitution or unjust enrichment or otherwise for any loss, damages, cost or expense which may arise from or be incurred or suffered on account of anything contained in this RFP or otherwise, including the accuracy, adequacy, correctness, reliability or completeness of the RFP and any assessment, assumption, statement or information contained therein or deemed to form part of this RFP or arising in any way in this selection process.

The bidder shall bear all its costs associated with or relating to the preparation and submission of its Proposal including but not limited to preparation, copying, postage, delivery fees, expenses associated with any demonstrations or presentations which may be required by KUDSIT or any other costs incurred in connection with or relating to its proposal. All such costs and expenses will remain with the bidder and KUDSIT shall not be liable in any manner whatsoever for the same or for any other costs or other expenses incurred by a bidder in preparation or submission of the bid proposal, regardless of the conduct or outcome of the selection process.

1.3. GENERAL INSTRUCTIONS TO BIDDERS

While every effort has been made to provide comprehensive and accurate background information, requirements, and specifications, Bidders must form their own conclusions about the requirements. Bidders and recipients of this RFP may wish to consult their own legal advisers in relation to this RFP.

All information to be supplied by Bidders will be treated as contractually binding on the Bidders, on successful award of the assignment by KUDSIT on the basis of this RFP.

No commitment of any kind, contractual or otherwise shall exist unless and until a formal written contract has been executed by or on behalf of KUDSIT with the bidder. KUDSIT may cancel this public procurement at any time prior to a formal written contract being executed by or on behalf of KUDSIT.

This RFP supersedes and replaces any previous public documentation & communications in this regard and bidders should place no reliance on such communications.

1.4. BID INVITATION

KERALA UNIVERSITY OF DIGITAL SCIENCES, INNOVATION AND TECHNOLOGY (KUDSIT/Digital University Kerala) invites offer/proposal from interested bidders for “DESIGN, IMPLEMANTION AND COMMISSIONING OF SMART DATA CENTER AT DIGITAL UNIVERSITY CAMPUS” This RFP document is being published on web Portal “https://etenders.kerala.gov.in”, this section provides general information about the issuer, important dates, and addresses for bid submission & correspondence for the bidders.

The bidders are advised to study the RFP document carefully. Submission of bids shall be deemed to have been done after careful study and examination of the RFP document with full understanding of its implications.

1.5. FACT SHEET

Proposal inviting agency	KERALA UNIVERSITY OF DIGITAL SCIENCES, INNOVATION AND TECHNOLOGY (KUDIT/Digital University Kerala)
Start date of Uploading document	29-12-2023
Non-Refundable Tender Fee	Rs. 29,500/-
The contact Information	Registrar, Kerala University of Digital Sciences, Innovation and Technology
Last date and time for submission of proposal	12-01-2024 18:00 Hrs.
Ernest Money Deposit	Rs. 8,50,000/-
Pre-bid Queries	(Bidders queries should reach as on before 06-01-2024 - Last date for receiving queries through E-mail: purchaseoffice@duk.ac.in)
Posting of response to queries and release of corrigendum, if any	Retender- NA
Opening of Pre-Qualification Bid	Retender- NA
Opening of General cum Technical Presentation by the qualified bidder	**Not Applicable**
Opening of Commercial Bids	**Will be announced later**
Bid validity	Bid must remain valid up to 120 (One Hundred & Twenty) days from the actual date of submission of bid.
Address for Correspondence and Clarifications	**Registrar, Digital University Kerala, Technopark Phase IV, Mangalapuram, Thiruvananthapuram – 695 317**
Language of the proposal	This proposal should be filled in English language only. If any supporting documents are to be submitted, in any other language other than English, then translation of the same in English language, attested by the Bidder should be attached
Proposal currency	Bidder shall be quote prices in Indian Rupees (INR) and will receive payment is Indian Rupees only

Please visit web site “etenders.kerala.gov.in” and “www.duk.ac.in/tenders” for complete detail.

The Bidders are advised to submit the bids well in advance of the deadline as Digital University Kerala will not be liable or responsible for non-submission of the bids because of any problems whatsoever.

1.6. ACRONYMS

List of acronyms that has been used in this document has mentioned here along with its full form/meaning.

Sl. No	Abbreviations	Description/ Definitions
1	A	Ampere
2	AC	Alternating Current
3	ACB	Air Circuit Breaker
4	BOM	Bill Of Material
5	BOQ	Bill Of Quantity
6	CCTV	Closed Circuit Television
7	CLC	Closed Loop Cooling
8	CR.	Crores
9	CRCA	Cold Rolled Close Annealed
10	CT	Current Transformer
11	CU	Cooling Unit
12	DB	Distribution Board
13	DC	Data Center
14	DC	Direct Current
15	DG	Diesel Generator
16	DPR	Detailed Project Report
17	EDO	Electrically Draw Out
18	F	Frequency
19	FRLS	Fire Retard Low Smoke
20	GI	Galvanized Iron
21	GoK	Government of Kerala
22	IT	Information Technology
23	KUDSIT	Kerala University of Digital Sciences, Innovation and Technology
24	LAN	Local Area Network
25	LDB	Lighting Distribution Boards
26	MAF	Manufacturer Authorization Form
27	MCB	Miniature Circuit Board
28	MCCB	Molded Case Circuit Breaker
29	NOC	Network Operations Centre
30	NVR	Network Video Recorder
31	OEM	Original Equipment Manufacturer
32	OPC	Open Platform Communications
33	PAC	Precision Air Conditioning
34	PAC	Precision Air Conditioning
35	PDB	Power Distribution Boards
36	IPDU	Power Distribution Unit
37	PF	Power Factor
38	POE	Power Over Ethernet
39	PVC	Poly Vinyl Chloride
40	SNMP	Simple Network Management Protocol
41	SWG	Standard Wire Gauge
42	UPS	Uninterrupted Power Supply
43	V	Volt
44	VDB	Vertical Distribution Boards
45	VESDA	Very Early Smoke Detection Apparatus
46	VHFO	Very High Frequency Oscillator

2. PROJECT OBJECTIVE & BRIEF SCOPE OF WORK

2.1 ABOUT KUDSIT

Kerala University of Digital Sciences, Innovation and Technology (KUDSIT) is established by Government of Kerala as a state University by upgrading the Indian Institute of Information Technology and Management Kerala (IIITM-K), an educational institution established by Government of Kerala in the year 2000. KUDSIT is a multidisciplinary premier postgraduate non-affiliating University conforming to the needs of building capacity at advanced levels of Computer Science and IT by realizing the dreams of students for higher knowledge with great emphasis in Science and Technology. KUDSIT acts as a centre of excellence in Information technologies to enhance its scope to provide a holistic learning environment on various facets of Knowledge economy. Development and application of digital technology for social good is the underlying theme which drives the activities of the Institute. Located in the majestic Technocity campus in Trivandrum, KUDSIT has an enviable academic ambience. The University offers, post-graduate programmes such as MTech, MSc Computer Science with various specializations, Ph.D. and PG Diploma in E-Governance for Government officials. During the last 20 years, the institute has made significant contributions in advancing the information technology research and practice in the country by working with national and international agencies like MeitY, DST, ICMR, ICAR, Niti Aayog, Ministry of Earth Sciences (MOES), Melinda Gates Foundation, Coffee Board, Rubber Board, IBM, Intel etc. KUDSIT`s training and research activities are mainly in niche areas of digital technologies and allied fields like AI and Machine Learning, Cyber Security, Language Technologies, Geospatial analytics, Data Analytics, Biocomputing, Agri-Informatics, IOT, Robotics, Digital Humanities etc. KUDSIT is closely working with different departments of Government of Kerala, by implementing various e-Governance projects of Government of Kerala.

The University hosts several research centres in areas like Data Engineering, Machine Learning, Data Security, Block Chain, Geo Spatial Analytics, Agri Informatics, etc. and a centre named Kerala Blockchain Academy for spearheading its activities in the fields of data intelligence and Blockchain technology. The institute also serves as a nerve centre for many activities of the professional bodies like IEEE and ACM in the area of intelligent ICT systems. The institute also established Maker Village, largest electronic hardware incubator and ESDM facility in the country, which is a pioneering start up initiative of Ministry of Electronics and Information Technology, Government of India with Indian Institute of Information Technology, Trivandrum as the implementation agency and Kerala Start-up Mission as the supporting partner.

2.2 PROJECT OBJECTIVE

Digital University is in the process of setting of a SMART Data Center to augment and support academic, research and project related data management. The Data Center proposed to be built in Digital University Campus at Technocity, Pallippuram. The plan is to build a State-of-art Data Center with Tier-III class compliance with TIA 942 standards. The Data Center will have approx. area of the 1300 Sq. ft. with server farm area of around 800sq.ft to accommodate capacity of 20 smart racks.

2.3 BRIEF SCOPE OF WORK

❖ DATA CENTER INFRASTRUCTURE

Design of the Data Center should with high "Energy efficiency", "sustainability"& with "Green IT" concept and to be certified TIER III from authorized certifying authority. The power consumption during running operations needs to be optimized. The Data Center must make the required services available with high performance, high availability with modular scalable Infrastructure for future expansion.

Day one requirement of the Data Center is for 10 Racks and to be upgraded to 20 Racks.

The Data Center design should meet the following industry standards for Tier III or above classifications:

- ASHRAE's cooling standards.
- IEEE standards for Electrical.
- TIA 942 for Data Center.
- NFPA, UL and local fire codes for Safety and security.
- ISO standards for processes and procedures.
- TIER III Data Center Certification from Uptime Institute LLC, USA

The Blue print of the Data Center should be prepared by the successful bidder after the contract has been awarded. Vendor should undertake all the necessary activities for successful implementation of the Data Center.

Bidder will design, Build and take the certification from authorized certifying authority for TIER III certification.

❖ DIESEL GENERATOR

The place for new Diesel Generator is decided close to rear Gate of the compound near the existing Genset. The foundation of the DG to be constructed for which the soil strengthening to be done so that in near future the foundation does not become weak. Site survey for this purpose to be done before taking participation in the bid. All the necessary design and criteria to be submitted by the qualitied bidder to the client and necessary approval to be obtained before starting the work.

❖ AIR COOLED CHILLERS

At the back side of the building near the RMU unit there is space available. This space to be utilized for placing the two no chiller units. The connecting pipes from the Data Center area will come out of the building along the wall, fixed to the wall using necessary metallic brackets, mounting structure and at the bottom will run under the ground up to the Chiller units.

3. BIDDERS ELIGIBILITY CRITERIA

3.1 PRE-QUALIFICATION FOR BIDDER

Sl. No	Parameter Specific Requirements	Documents
1	The bidder must be a company registered in India under Indian Companies Act 1956 and 2013. Shall have been in operation for a period of at least 5 years as on bid submission date.	Valid documentary proof of Certificate of incorporation & Valid GST registration certificate to be attached
2	The bidder should submit Manufacturer Authorization Form (MAF) from the OEM for the quoted products/items along with the technical bid.	Manufacturer Authorization Form to be Submitted – DC Infra, HCI & backup. **Annexure-E**
3	The bidder must have a valid ISO 9001:2015/ ISO 27001:2013 (issued in India) from the date of tender.	Certificate copy to be enclosed
4	The Bidder should have been actively engaged in the field and shall have a registered office anywhere in India and presence in Kerala/Tamil Nadu/ Karnataka for the last five years.	Attached relevant document (Copy of Rental Agreement or Purchase deed)
5	The bidder must have an on-site support engineer in the relevant areas and should attend the issues within 4 hours of time.	Self-Declaration **Annexure-A**
6	Bidder should have an average annual turnover of at least 30 Cr INR during the last 3 financial years. (2019-2020, 2020-2021, 2021-2022)	Profit & Loss Account Statement of audited balance sheet and Statutory Auditor Certificate confirming turnover.
7	The Bidder should have positive net worth for the last three audited Financial Year. (2019-2020, 2020-2021, 2021-2022)	Copy of audited profit and loss account/ balance sheet of the last three financial years, highlighting the requisite figure related to positive net worth and profitability.
8	The Bidding entity should not have been black listed for indulging in corrupt practice, fraudulent practice, coercive practice, undesirable practice, breach of contract or restrictive practice by any Central/ State Government/PSU/Semi- Government bodies as on bid submission date	Self-Certification/ Declaration duly signed by authorized signatory on company letter head.
9	The Bidder/OEM should have installed and commissioned minimum three or more Smart Rack Data Centers in India in the last five years. Bidders who have done in house Data Centers shall not be considered	Copy of work order(s) / Purchase Order/ Completion Certificate/ Project ongoing certificate/contract agreement to be attached

10	The Bidders should have experience in at least one Data Center setup in the last 5 years as on Bid submission date shall include IT Infrastructure related Cooling Rack and UPS solution value not less than 75 Lakhs	Purchase Order/ Project ongoing certificate/ Completion Certificate to be attached
11	Detailed Bill of Materials for all the required components should be mentioned else the bidder will be disqualified.	BOM should be Submitted
12	The Bidder/OEM should have a minimum 1 number of CDCS (Certified Data Center Specialist) and/or CDCP (Certified Data Center Professional) and/or ATD in their roles.	Copy of Valid Certificate to be attached.
13	The Smart Rack OEM should have a certificate of quality CE/ISO.	Certificate copy to be enclosed
14	The bidder/OEM should have presently AMC agreement of minimum one Data Centers in Kerala.	Copy of work order(s) / Purchase Order/ contract agreement to be attached
15	Smart Rack OEM should have a valid ISO 9001:2015, ISO 14001:2015, OHSAS 18001:2007 Certification.	Certificate copy to be enclosed
16	a) Certificate by authorized signatory of the bidder confirming acceptance of all tender terms and conditions and undertaking for the Total responsibility of design, procurement and implementation of the total solution b) In case an Authorized Signatory signing the Bid on Behalf of the Bidder, he/she should be duly authorized by the Bidding Company to sign the Bid and the Agreement on their behalf.	a) As per **Appendix – B** Declaration of acceptance of terms and conditions in RFP b) As per **Appendix -C** Power of Attorney
17	**PRE-BID Meeting and Site Visit Mandatory**	Sign off document for site survey should submitted along with the Technical Proposal as per the **Annexure-D**
18	The OEM from a country which shares a land border with India will be eligible only if they are registered with the competent authority as per Govt. of India order, issued by Ministry of Finance vide No.F.No.6/18/2019-PPD dated 23/07/2020	Copy of document of registration with DPIIT, Govt. of India

3.2 SUBMISSION OF THE PROPOSAL

1) The proposal shall be submitted online in two parts in, Part-I "Technical cum General Bid" and Part-II "Commercial Bid". Technical cum General Bid will consist of two parts; "Pre-Qualification Bid" & "Technical Proposal".
2) The proposal should be signed by an authorized signatory (having power of attorney/authorized by board resolution) on each page of the proposal document including enclosures.
3) Copy of board resolution and / or power of attorney shall be submitted along with technical proposal. Failing of which the Bid will be rejected.
4) The proposal shall contain no interlineations, erasures or overwriting, in order to correct error made by the Bidder. All corrections shall be done & initialed by the authorized signatory after striking out the original words / figures completely.
5) Please note that Prices should not be indicated in the Technical Proposal but should only be indicated in the Commercial Proposal. Any proposal with Commercial Proposal submitted along with Technical Proposal will be summarily rejected

3.3 PREPARATION OF BIDS - DOCUMENTS COMPRISING THE BID

3.3.1 TECHNICAL BID – COVER 1

- Upload Relevant documents against Bidders Eligibility Criteria
- Manufacture Authorization Form
- Technical Compliance
- Datasheet
- Unpriced Bill of Materials
- Technical Proposal
- Annexure –A, B, C, D

3.3.2 COMMERCIAL BID – COVER 2

- Commercial Bid for the Schedule of Items quoted in the prescribed format (BOQ)

3.4 DEADLINE FOR SUBMISSION OF PROPOSALS

1. The proposal shall be submitted in online, along with Tender fee, EMD and Technical Presentation within the due date and time.
2. At any time, prior to deadline for submission of RFP, KUDSIT may modify any of the terms & conditions and technical specifications at its sole discretion and the same will be published in e-tender website and the amendments shall be binding on them. No separate communication will be passed to the bidders in this regard.

3.5 PROPOSAL PRICES

1. The total price quoted must be inclusive of cost of supply, installation, commissioning and testing of the Solution and support, all applicable taxes, duties, levies, charges etc.,

2. The Bidder cannot quote for the project in part.

3. The Bidder may visit the all-proposed site/location, which will be part of Data Center at KUDSIT before bidding to assess the actual physical & technical requirement. Site visit may be facilitated on mail request to the Contact Officer as mentioned in invitation of bid section.

4. The bidder must submit a detailed Bill of material including Make & Model and Bill of quantity

5. KUDSIT will have in its discretion to increase and decrease in quantity and items in case of need arises.

6. Any other items required for the successful completion of the work other than mentioned in the BOQ should be considered. KUDSIT will not pay any additional amount in the later stage for the successful completion of work.

3.6 TENDER DOCUMENT FEES AND EARNEST MONEY DEPOSIT (EMD)

1. The Bidder shall pay a tender document fee and Earnest Money Deposit as mentioned in this RFP. The Bid security is required to protect the purchaser against risk of Bidder's conduct, which would warrant the forfeiture of security.

2. Online Payment modes: The tender document fees and EMD can be paid in the following manner through e-Payment facility provided by the e-Procurement system:

3. State Bank of India (SBI) Internet Banking: If a bidder has a SBI internet banking account, then, during the online bid submission process, bidder shall select SBI option and then select Internet banking option. The e-Procurement system will re-direct the bidder to SBI's internet banking page where he can enter his internet banking credentials and transfer the tender document and EMD amount.

4. National Electronic Fund Transfer (NEFT)/ Real Time Gross Settlement (RTGS): If a bidder holds bank account in a different bank, then, during the online bid submission process, bidder shall select NEFT / RTGS option. An online remittance form would be generated, which the bidder can use for transferring amount through NEFT / RTGS either by using internet banking of his bank or visiting nearest branch of his bank. After obtaining the successful transaction receipt no., the bidder has to update the same in e-Procurement system for completing the process of bid submission. Bidder should only use the details given in the Remittance form for making a NEFT / RTGS payment otherwise payment would result in failure in e-Procurement system.

5. As NEFT payment status confirmation is not received by e-Procurement system on a real-time basis, bidders are advised to exercise NEFT mode of payment option at least 48 hours prior to the last date and time of bid submission to avoid any payment issues.

6. For RTGS the timings that the banks follow may vary depending on the customer timings of the bank branches and settlement from RBI. Bidders are advised to exercise RTGS mode of payment at least 24 hours prior to the last date and time of bid submission to avoid any payment issues.

3.7 NEFT / RTGS payment should be done according to following guidelines:

1. The Bidder shall furnish, as part of its bid, a bid security as EMD (Earnest Money Deposit) for an amount as specified in the Invitation for Bids. The Bid Security shall be submitted along with technical bid.

2. EMD of all unsuccessful bidders would be refunded by KUDSIT within 60 days after selection of successful Bidder. The EMD of successful Bidder would be returned upon submission of Performance Bid Security.

3. EMD amount is interest free and will be refundable to the unsuccessful bidders without any accrued interest on it.

4. The proposal submitted without tender fee and EMD in the prescribed format mentioned above, shall be summarily rejected.

5. The EMD may be forfeited:

    a. If a Bidder withdraws its proposal within the validity period.

    b. In case of a successful Bidder, if the Bidder fails to sign the contract in accordance with this RFP.

    c. Fails to deliver as per the Terms & conditions of RFP & deliverables.

    d. Any material breach of contract

6. Micro, Small & Medium Enterprises (MSME) registered with the National Small Industries Corporation Limited, New Delhi and in respect of which competency certificates are issued by the Corporation may be exempted from the payment of Tender fee and Earnest Money Deposit (EMD). MSMEs having DGS &D registration also shall be considered for such exemptions

3.8 BID VALIDITY PERIOD

1. The EMD submitted along with the bid will remain valid for entire validity period of the bid as mentioned in the fact sheet.

2. In exceptional circumstances, prior to expiry of the bid validity period, KUDSIT may request the bidders to extend the period of validity for a specified additional period at bidder's cost. The request and the responses to the request shall be made in writing. A bidder may refuse the request without risking forfeiting the EMD, but in this case, the bidder will be out of the competition for the award. Bidder agreeing to the request will not be required or permitted to modify its bid, but will be required to ensure that the bid remains secured for a correspondingly longer period.

3. On completion of the validity period, unless the Bidder withdraws his bid in writing, it will be deemed valid until such time that the Bidder formally (in writing) withdraws bid

3.9 COMPLIANT /COMPLETENESS OF RESPONSE

Bidders are advised to study, examine all instructions, forms, appendices, terms, conditions and deliverables in the RFP document. Failure to furnish all information required by the RFP documents or submission of a RFP offer not substantially responsive in every respect to the RFP documents will be at the bidder's risk and may result in rejection of its RFP offer. The RFP offer is liable to be rejected outright without any intimation to the bidder if complete information as called for in the RFP document is not given therein, or if particulars asked for in the forms / Proforma in the RFP are not fully furnished.

The RFP offer is liable to be rejected outright without any intimation to the bidder if complete information as called for in the RFP document is not given therein, or if particulars asked for in the forms / Proforma in the RFP are not fully furnished

Bidder must:

- Include all documentation specified in this RFP, in the bid.
- Follow the format of this RFP while developing the bid and respond to each element in the order as set out in this RFP
- Comply with all requirements as set out within this RFP.

3.10 PRE-BID MEETINGS / QUERIES CLARIFICATION

KUDSIT shall organize a virtual pre-bid meeting, if any, on the scheduled date, time and venue as mentioned in Invitation of Bid section. KUDSIT may or may not incorporate any changes in the RFP based on acceptable suggestions received during the Pre-Bid Conference. The decision of KUDSIT regarding acceptability of any suggestion/request shall be final in this regard and shall not be called upon to question under any circumstances. The prospective bidders shall submit their queries in writing only in prescribed format below not later than date and time indicated in sheet. Bidders' queries should reach as on or before 06-01-2024 through E-mail: purchaseoffice@duk.ac.in

Sl. No	Page No	Clause No	Clause Header	Clause details as in RFP	Query/ Clarification Required	Justification/Reason for changes required (If any)

Once the similar queries shall be answered, same queries will not be entertained further.

3.11 RESPONSES TO PRE-BID QUERIES AND ISSUE OF CORRIGENDUM

1. Bidder may seek clarification on this RFP document not later than the date specified in the Invitation of Bid section. KUDSIT reserves the right to not to entertain any queries post that date and time. The bidders are requested to submit their queries in MS –Word as well as MS-Excel editable format.

2. At any time prior to the last date for receipt of bids, KUDSIT may, for any reason, whether at its own initiative or in response to a clarification requested by a prospective bidder, modify the RFP document through a corrigendum.

3. Any modifications of the RFP Documents, which may become necessary as a result of the Pre-Bid queries, shall be made by KUDSIT exclusively through a corrigendum. Any such corrigendum shall be deemed to be part of this RFP and incorporated into this RFP. However, in case of any such amendment, the bid submission date may be extended at the discretion of KUDSIT.

4. The corrigendum or clarifications (if any) to the queries from any bidder will be published on the website, https://etenders.kerala.gov.in in the form of modified RFP/corrigendum etc.

5. In order to provide prospective bidders reasonable time for taking the corrigendum / modifications into account, KUDSIT may, at its discretion, extend the last date for the receipt of Bids.

6. It is the responsibility of the bidder to check the above websites time to time for updates.

3.12 AMENDMENT OF PROPOSALS

1. RFP Proposals once submitted cannot be amended. However, in case of some administrative exigencies, KUDSIT may decide to take fresh proposals from all the bidders before opening of the Technical Proposal.

2. KUDSIT in its discretion may ask for clarification in terms of letter, declaration, datasheets, brochures etc. during technical evaluation. It will be binding on the bidders to submit the same

3.13 OPENING OF PROPOSALS BY KUDSIT

1. The technical bids of those bidders who are all met the Eligibility Criteria will be opened, evaluated and shortlisted. All documents in support of technical qualifications shall be submitted online. Bids shortlisted by this process will be taken up for opening the financial bid.

2. Bids of the qualified bidder's shall only be considered for opening and evaluation of the financial bid.

3.14 EVALUATION PROCEDURE

1. KUDSIT may constitute an Evaluation Committee to evaluate the responses of the bidders

2. The Evaluation Committee constituted by KUDSIT shall evaluate the responses to the RFP and all supporting documents / documentary evidence. Inability to submit requisite supporting documents / documentary evidence, may lead to rejection.

3. The interpretation of the bids and the decision made by the Evaluation Committee in the evaluation of responses to the RFP shall be final. No correspondence will be entertained outside the process of evaluation with the committee.

4. The Evaluation Committee may ask for meetings with the bidders to seek clarifications on their bids.

5. The Evaluation Committee reserves the right to reject any or all bids on the basis of any deviations.

6. Each of the responses shall be evaluated as per the criterions and requirements specified in this RFP.

7. Initial Proposal scrutiny will be held and incomplete details as given below will be treated as non- responsive. If Bids;

   a) Are submitted without tender fee or EMD in prescribed format.

   b) Are not submitted as specified in the RFP document.

   c) Received without the Letter of Authorization (Power of Attorney)

   d) Are found with suppression of details

   e) With incomplete information, subjective, conditional offers and partial offers submitted

   f) Submitted without the documents requested in the Proforma.

   g) Have non-compliance of any of the clauses stipulated in the RFP

   h) With lesser validity period

Evaluation Committee will prepare a list of responsive bidders, who comply with all the Terms and Conditions of the RFP. All eligible bids will be considered for further evaluation by a committee according to the Evaluation process define in this RFP document. The decision of the Committee will be final in this regard. All responsive Bids will be considered for further processing as below:

a) Evaluation committee will examine the bids to determine whether they are complete, whether any computational errors have been made, and whether the bids are generally in order. The interpretations made by the evaluation committee will be final and binding on the bidders.

b) Reasonableness of Prices: Prices quoted by bidders must be reasonable with prevalent market rates. AHR (Abnormally High Rates) and ALR (Abnormally Low rates) shall not be accepted and KUDSIT shall have to the right to reject the bid.

c) In case an item has been left out in the BOQ/BOM/Price bid by a particular bidder but required for the successful implementation of project and/or it is mentioned in the solution document of the bidder, KUDSIT will have the right to reject the bid OR ask the bidder to supply the item free of cost.

d) It is mandatory for bidder to submit detailed BOQ and BOM (Bill of material with quantity) as unpriced bid in technical bid. Any discrepancy in price and unpriced bid will lead to disqualification of the bid OR KUDSIT will have the right to consider the highest amongst the BOQ/BOM and the price bid.

e) If there is a discrepancy between words and figures, the amount in words will prevail.

f) Further, the scope of the evaluation committee also covers taking any decision with regards to the RFP Document, execution/ implementation of the project including management period.

g) Proposal document shall be evaluated as per the following steps

- Preliminary Examination of Eligibility Criteria documents: The Eligibility document will be examined to determine whether the Bidder meets the eligibility criteria, whether the proposal is complete in all respects, whether the documents have been properly signed and whether the bids are generally in order. Any bids found to be non-responsive for any reason or not meeting the minimum levels of the performance or eligibility criteria specified in various sections of this RFP Document will be rejected and will not be considered further.

- Technical Evaluation: A detailed evaluation of the bids shall be carried out in order to determine whether the bidders are competent enough and whether the technical aspects are substantially responsive to the requirements set forth in the RFP document.

- The Bids of the technically qualified bidders shall be considered for opening and evaluation of the financial bid.

3.15 GENERAL CONDITIONS OF CONTRACT

If the service provided by the bidder is found unsatisfactory or if at any time during the period of contract it is found that the information provided by the bidder or any claim is false or if irregularities shown by the bidder for applying for the Contract is detected, KUDSIT reserves the right to cancel the contract as a whole or part after giving notice to the bidder.

KUDSIT reserves the right to accept / reject any or all offers submitted in response to this advertisement without assigning any reason whatsoever and decision will be final in this regard.

If KUDSIT is not satisfied with the technical specifications and the feasibility of the technical offers submitted by any bidder, the commercial offers of that bidder will not be opened. Technically disqualified offers will not be evaluated any further and no discussions / interactions will be entertained from such bidders.

Those bidders who did not have satisfactory performance in delivering goods and services with KUDSIT as per earlier contracts during the last 3 years, such bidders will be disqualified during the evaluation process.

Those bidders who claim EMD Exemption shall submit the necessary documents and the same will be evaluated during technical evaluation. In case the EMD exemption claim document uploaded by the bidder is found to be different /invalid or doesn't convey the required details, the bid is liable to be rejected.

Taxes shall be paid by KUDSIT at actual rates applicable at the time of billing.

Any dispute/ differences arising between the parties out of the terms of this contract shall be settled through Indian Arbitration and Conciliation Act 1996. The place of arbitration shall be the place of issue of purchase order

Special tools and tackles, if any for maintenance and handling of the device/equipment/instrument shall be supplied along with the equipment. No extra payment shall be applicable in this regard.

Bidder shall provide hands on training/capacity building and knowledge transfer process on the operation of supplied devices/equipment/instrument at site for the selected operational crew/team of the Purchaser. The schedule of such training shall be duly intimated. No extra payment shall be made for the hands-on training

The bidder may be required to make detailed presentations before the duly constituted technical committee as part of providing clarifications/confirmations with respect to various provisions/Specifications in the submitted bid.

3.16 WARRANTY AND AMC

The entire system should be OEM warrantied for a period of 5 Years from the date of completion of work and 3 years AMC support after the warranty period along with consumables. It has to be included in MAF by the bidder. The cost for L1 has to be calculated including the AMC cost. After 10 years, further support may be considered on demand.

The Supplier warrants that all the Goods are new, unused, and of the most recent or current models, and that they incorporate all recent improvements in design and materials, unless provided otherwise in the Contract.

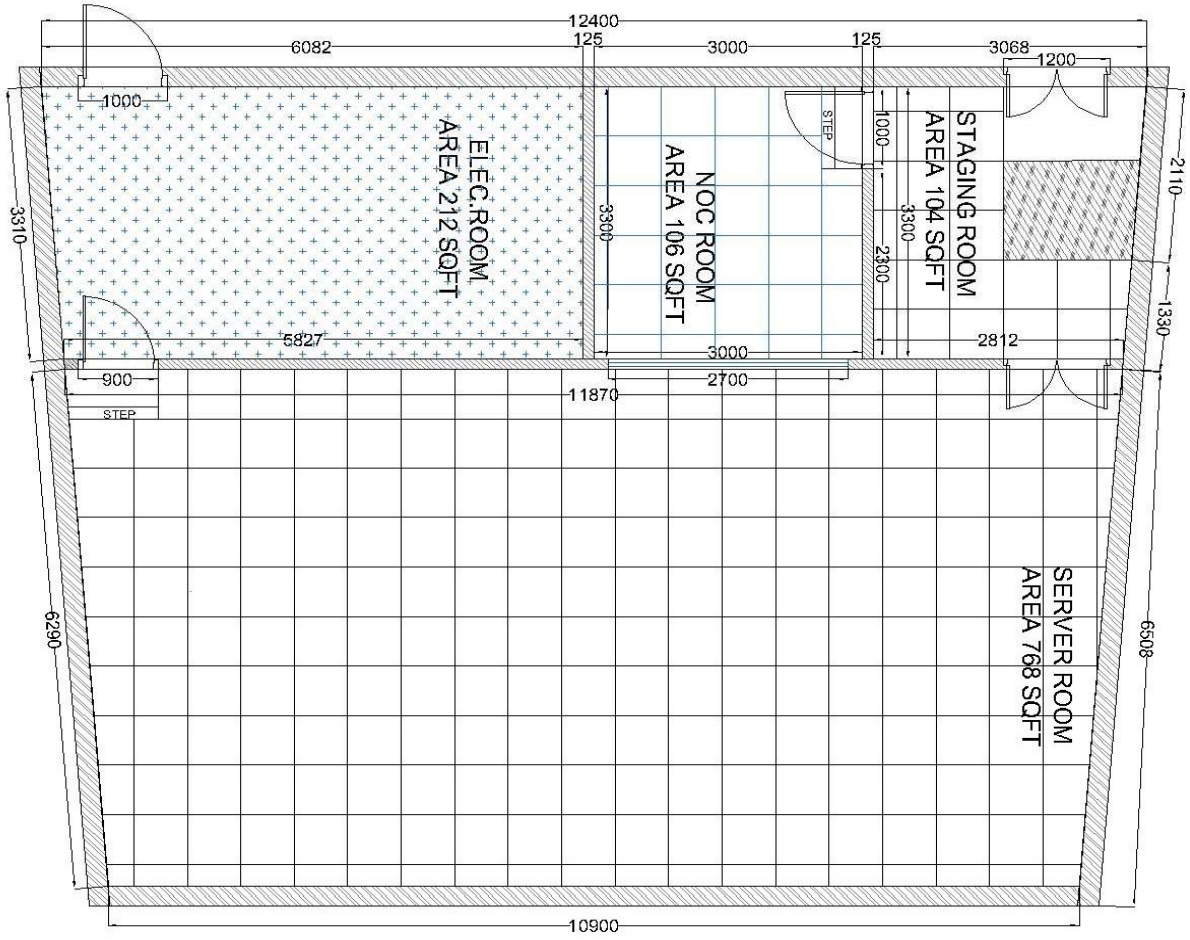
3.17 PAYMENT TERMS

1. 60% of the payment shall be released after successful supply of materials and verification at site as secured advance and will be adjusted against the running account bill.

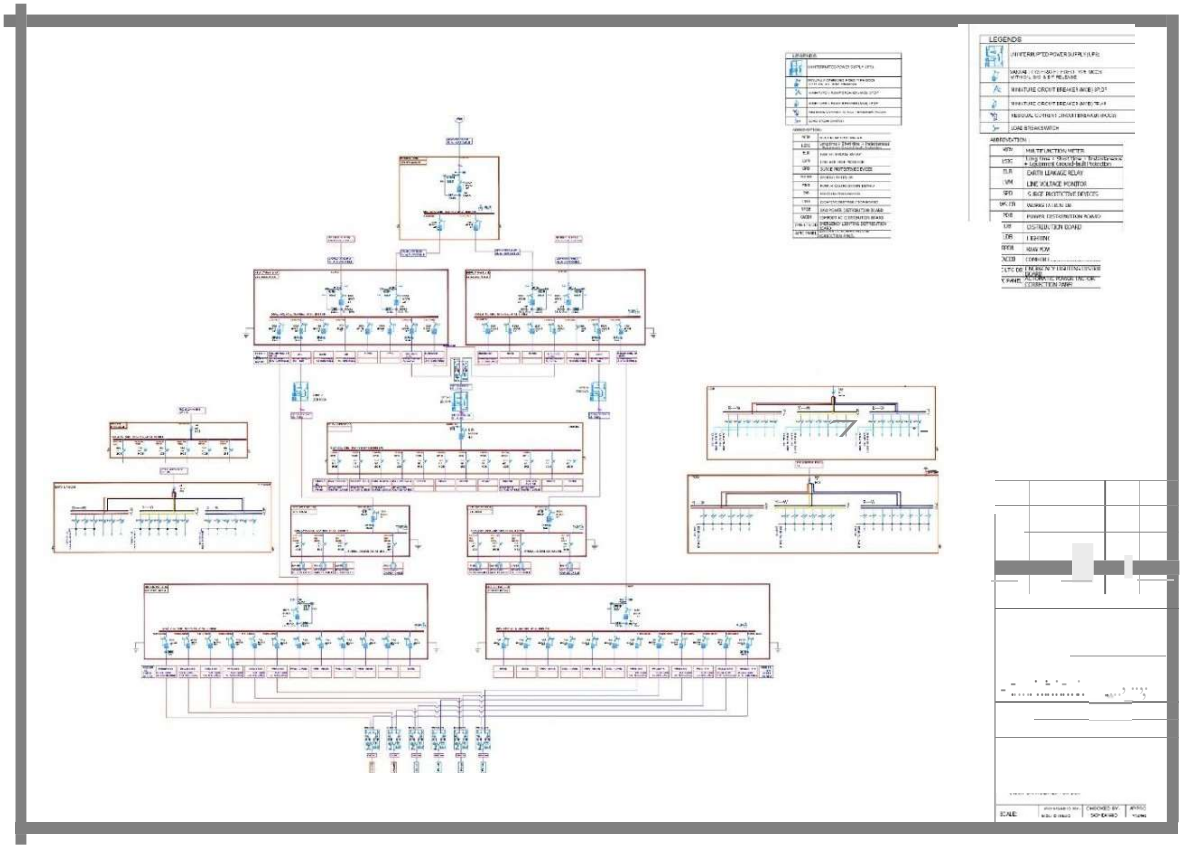
2. Next 35% of the payment shall be released after the successful installation and commissioning of the device/equipment/instrument at site and after the issue of acceptance and completion certificate.

3. Balance 5% of the amount shall be released after the submission of Bank Guarantee for 5% contract value as performance warranty with a validity of 60 days from the date of completion of warranty period and the warranty certificate from the Original Equipment Manufacturer (OEM).

4. TENTATIVE LAYOUT AND ELECTRICAL SLD OF THE PROPOSED DATACENTER (ROOM No. 215, SECOND FLOOR, DIGITAL UNIVERSITY BUILDING)



Note: The bidder can modify the layout as per their solution without compromising the basic requirement of housing 20 nos 42 U IT racks (each of size 800mm x 1200mm) and complying to Tier III requirements of Uptime Institute.



Note: The bidder can modify the Electrical SLD as per their solution without compromising the basic requirements and complying to Tier III requirements of Uptime Institute.

5. TECHNICAL SPECIFICATIONS AND COMPLIANCE – NON-IT

5.1 SERVER /NETWORK SMART RACKS

Server/Network Racks: 800 Width X 2000 Height (42U) X 1500 Depth: 10 Nos.

Note: The bidder has to provision 20 racks in the space in total. The depth of the rack mentioned above is indicative. Bidder to consider the depth of the rack as per their solution and RFP requirements.

These racks will be used to mount and house all server / network / storage devices in the Data Center. The rack has to be designed to meet the safety requirements of the modern Data Center. Both the front and rear door should have a handle with locking options. The rack should be suitable for baying to a high- performance cooling rack. Cable entry should be entered via the roof plate/cable cutout and via the gland plate/brush grommets without affecting the climatic conditions inside the rack.

TECHNICAL SPECIFICATIONS:

Sl.No:	Parameter	Description	Compliance Yes/No
1	Basic Structure:	Frame of sturdy frame section construction, consisting of multi folded rolled hollow / CRCA frame section punched in 25mm DIN pitch pattern. All profile edges should be radius. The corners to be welded. Removable top & bottom cover with Cable entry provision. Frames should be buyable, scalable and modular.	
High Performance Cooling Area Racks			
2	Type	Server/Network /HPC Rack	
3	Dimensions	Width: 800 mm Depth: Not more than 1800 mm total (including any plenum/Containment if required) Height: 42 U`	
4	Doors	Fitted with Front Glass door & Rear Sheet Steel Door with 3-point locking system and comfort handle with locking	
5	Design	Rack Design should support closed loop High performance cooling	
6	Side Panels	Side panel should be with PU gasket with screw fixing to avoid air leakage Side panel required only at the end of the row, on each side	
7	Rack Accessories	19” angles front and back	
		Top cover with cable entry	
		Bottom cover with cable entry	
		Adjustable Leveling feet / fixed base plinth mounting	
		Vertical cable managers with cable loops 2 per rack.	
		Horizontal 1U Cable manager with PVC cable loops and cover2 Per rack.	
		Horizontal Earthing Busbar per cabinet, 20 points for earth connection.	
		Captive Hardware pack 40 Nos per rack.	
		Baying kit.	
		Blanking panels 20 Nos per rack.	
		Brush Strips	
		Cable management panel as per standard design	

		Gland plate	
		Component Shelf-19"	
8	Protection	IP 20 or higher protection rating when installed (joined to neighboring cooling unit for closed loop).	
9	Certification	All Racks should be certified according to ISO 9001, 14001, 18001. Complying EIA 310, DIN 41494 and IEC 297 standards	
10	Load bearing capacity:	Minimum 1000 KGs on 19"mounting angles and Minimum 1400 KGs on frame.	
11	Surface Finish:	Nano Ceramic Coated, electro-dip coat/ Epoxyployester powder coated primed to 20 microns and powder coated with textured polyester paint to 80 to 120 microns.	
12	Side throw	The OEM should provide solution for side wise/front throw in the SMART rack as per OEM design	
13	Other Terms	Manufacturer Authorization Form (MAF) from the OEM to be provided	

5.2 INTELLIGENT PDU FOR SERVER RACK

2 Nos of Intelligent PDU to be provided with each rack. The PDU should be connected to the UPS out put through industrial plug and socket.

TECHNICAL SPECIFICATIONS

Sl No:	Parameter	Description	Compliance Yes/No
1	Infeed	3x32 Amps three phase	
2	No of Sockets	IEC C13: 24Nos IEC C19: 6 Nos	
3	Measurement	Current/voltage per phase	
4	Options	switching the slots (individually)	
5	Web interface	HTML, SSL v3	
6	Connectivity	TCP/IP, DHCP, FTP, Telnet, SSH, SNMP,connection	
7	Network	1 G Ethernet Port.	
8	Syslog messages	via e-mail or SNMP	
9	Protection/security	User rights administration/password protection	
10	Other features	Group formation with switchable outputs	
11	Naming of outputs	Max. 24 characters	
12	Connection cable	with CEE connector (3 m, 3-phase) - 32 A x 5 Pin 240-	
13	Mains connection	400 V/ 50 – 60 Hz	
14	Display	TFT/LED	
15	Approvals	CE	
16	Other Terms	Manufacturer Authorization Form (MAF) from the	

5.3 CLOSED LOOP COOLING SOLUTION

5.3.1 CHILLERS-60 TR (2 Nos)

The Data Center cooling system should be design as per Uptime Institute Tier III guideline. Complete chilled water distribution system for in rack units. Air Cooled Chiller should be designed with closed coupled cooling system to provide the maximum efficiency.

Complete cooling system should be designed for continuous cooling keeping in mind the application of high- density IT Racks.

The Chiller system should be scalable and should accommodate one more chiller in future without any shutdown or down time requirements of working system.

Supply and installation of Air-cooled Chiller, Factory assembled, factory charged, factory run tested of various capacities. Chiller should consist of multiple Scroll compressors, EC fans, condenser coils, electronic expansion device (EXV), Quick start feature, refrigerant direct expansion shell & tube heat exchanger/Brazed plate heat exchanger, Low GWP HFO refrigerant (R410a), Quick Restart Feature, steel base frame for mounting the above components, refrigeration piping, fittings, valves, refrigerant and oil, controls and ancillaries with on board variable speed Pump. Sound pressure levels for the units should not exceed 60 dBA at 10M from the unit.

Capacity	:	60 TR
Actual Capacity Chilled Water in / out temp	:	20°C / 13°C
Design Ambient temperature	:	40.0°C
Fouling Factor	:	0.044 m2. k/kW

❖ OPERATION PRINCIPLE

The system should operate on DX Mode & also should be capable of producing chilled water using external air instead of direct expansion operation.

❖ COMPRESSORS

The compressors are fixed to the base on anti-vibration supports to prevent the transmission of vibrations to the structure to ensure that the unit keeps stresses in the tubing connecting the compressors at reasonable levels; compressors are mounted as close as possible to each other in models. Each chiller should have multiple compressors.

Energy efficient Semi-hermetic scroll type compressors. It shall be constructed of composite material designed for extended life. The compressor motors shall be equipped with protection on all the three phases and are started by their three-pole contactors.

The compressor shall have following protections and controlling.

- The temperature of the motor windings
- The oil temperature
- Minimum oil level
- High and low pressure
- Overcurrent, over and under voltage, phase failure
- Warnings (or cut out) communication close (or on excess) to the application limits
- Oil heater automatic smart control

The compressors are fixed to the base on anti-vibration supports to prevent the transmission of vibrations to the structure to ensure that the unit keep stresses in the tubing connecting the compressors at reasonable levels; compressors are mounted as close as possible to each other in models. Each chiller should have multiple compressors. The compressor box is designed to reduce to the maximum the levels of noise through the use of sound absorbing/damping materials.

Motor starting arrangement shall be of "**Soft Starter**" type only.

❖ QUICK RESTART FEATURE

Unit controls should be designed such that during power failure and restart, chiller should be able to provide full load capacity (100% loading) maximum within 150 secs.

❖ COOLING CIRCUIT

The unit should be equipped with minimum two refrigerant circuit designed for R410A refrigerant, conforming to EC Directives (PED 97/23/CE) in copper tubing including filter dryer, liquid sight glass, electronic expansion valve, high- and low-pressure switches and high-pressure transducers & gauges.

Multiple hermetic scroll compressors with a high level of energy efficiency and low noise levels shall be installed in total two circuits. The compressors shall be fitted with internal thermal protection, anti- vibration supports and crankcase heaters. The main components should be:

- Electronic expansion valve
- High- and low-pressure switches

❖ INTEGRATED CHILLER PLANT MANAGER

Chiller has inbuilt plant manager feature which can control operation of multiple chillers on plant. Configurations like sequencing, scheduling, load sharing between chillers etc., will be controlled by chillers. Onboard primary variable flow pumps shall be controlled by chiller plant manager which is a part of chiller controller. This will avoid need of any 3rd party chiller plant manager. However, if the OEM does not has inbuilt chiller plant manager, the bidder can opt for a third party product that must be certified by the Chiller OEM.

❖ MICRO-PROCESSOR CONTROL PANEL INDICATING FOLLOWING:

- Suction and Discharge pressures.
- Chilled water inlet / outlet temperature.
- System voltage.
- Current drawn by each compressor.
- The complete framework shall be mounted on anti-vibration isolators or suitable rubber pads.

❖ EVAPORATOR

The brazed plate type evaporator should be made entirely of stainless steel, with direct-expansion and counter-current flows. The heat exchange surface is configured so as to maximize the exchange coefficient with minimal load losses. Input and output connections are fitted with air bleeder valves. The covering in closed-cell neoprene sponge prevents the formation of condensation and reduces thermal wastage. The evaporator shall be protected by a water flow differential pressure switch. The water flow differential pressure switch which stops refrigerator operation in the event of a break in the water flow, protecting the chiller from dangerous operating conditions.

Water side pressure drop of evaporator shall not exceed 0.8 at actual conditions

❖ CONDENSER

The condenser should be generously proportioned in order to function at high ambient temperatures. It is composed of coil/s equipped with aluminium fins and mechanically expanded copper tubing in order to obtain optimum metallic contact for maximum exchange efficiency.

Sickle-blade axial fans, statically and dynamically balanced and made from composite materials for high efficiency and low acoustic impact with internal and external safety protection grilles.

Fan speed shall be driven by a modulating condensation control system based on the condensation pressure

CONDENSOR FANS

Fans shall be axial type, with die-cast aluminum blades statically and dynamically balanced and directly coupled to an EC motor with external rotor. Fans have Electronically Commutated motors (EC-Fans) with IP54 protection, Class F winding insulation and internal thermal protection.

Fans shall be complete with safety protection grilles and high efficiency nozzles with a specific design to eliminate cross and recycling airflow. The stator blades should allow the redirection of the air flow with a consequent increase in efficiency and noise reduction.

Fan speed control are achieved by means of a continuous fans speed regulation, managed directly by controller for higher energy saving and lower sound emission spectrum.

The Fan discharge should be at least one- meter above the chiller level. IP protection shall be suitable for outdoor conditions.

❖ ELECTRICAL PANEL

The electrical panel should be housed on the chiller package structure and should include starters for the compressor motors. The panel, IP54 protection degree, should be done in compliance with EC standard (EN60204-1), for low ambient application an electrical heater to be included inside and it should be provided mainly with:

- Auxiliary transformer at 12 / 24 V and 230V
- Supply 400+/- 10% V/3/50HZ
- Lockable general door cut off switch
- Thermo-magnetic protection for the compressors, fans and auxiliaries
- Remote control switches for the compressors
- Sequence phase control
- Quick start feature: Chiller to Ramp up to its 100% Capacity in 150 seconds.
- In case of UPS power failure, the controller shall be power by internal capacitor or battery.

❖ MICROPROCESSOR CONTROL SYSTEM

The microprocessor control should be integrated with the local user terminal where the regulation software is housed. This control should include:

- Local control terminal with LCD display with signal
- Outlet chilled water temperature regulation by means of an exclusive PID
- Electronic expansion valve managed by the control system
- Monitoring of the absorbed current and checking of eventual malfunctions advanced anti-freeze protection on evaporator
- Integrated LAN card for local network connection of a group of chillers integrated Clock Card
- Rotation of pump group setting functioning and start of pump in stand-by in the event of pump
- Break down Loss of Chilled water flow
- Phase loss, phase reversal, phase imbalance and under and over voltage protection

❖ MICROPROCESSOR CONTROL SYSTEM IN ADDITION ALLOWS MANAGEMENT OF DOUBLE SET-POINT FROM REMOTE CONTROL

- Free-contact for general alarm and 2 for addressable alarms
- Remote ON-OFF switch
- Auto Sequencing of Chillers.
- Ability to interface with Modbus protocol directly on RS485 serial card
- Ability to interface with main external communication protocols: BACnet, , TCP/IP and SNMP

❖ REFRIGERANT CIRCUIT

Sufficient valves should be included to allow a compressor to be removed for service & to allow the refrigerant to be pumped in to and contained in the condenser. The unit should be equipped with a liquid line shut off valve, filter drier, liquid line sight glass, and solenoid valve & insulation where required to prevent condensation forming.

❖ CONTROLS AND INTERLOCKS

Control Panel should be housed on the chiller package structure and should include starters for the compressor motors. The panel should have a Temperature controller to control the leaving chilled water temperature at the required set point. The panel should have IP 54 protection for outdoor operation and should have following minimum features of safety:

- Discharge and suction pressure indication for each compressor.
- High discharge and low evaporator pressure cut out.
- Anti-freeze protection for chilled water.
- Loss of Chilled water flow.
- Phase loss, phase reversal, phase imbalance and under and over voltage protection.
- Motor protection for each compressor motor.

❖ HIGH TEMPERATURE OPERATION

On Evaporator side: Chiller should be capable of delivering the high chilled water temperature up to 20°C which will provide higher EER.

On condenser side: Chiller should be able to operate up to 50°C without tripping.

❖ INVERTER DRIVEN PUMPS

The pumping station should include inverter driven pump after the evaporator to supply the chilled water to plant at desired temperature & head pressure.

Pump shall be operated from chiller microprocessor panel itself without any need of external controller. The chiller should be equipped with double factory-connected water circulation pumps. The electronic pump regulation algorithm allows to modulate the pump speed so as to keep the flow rate constant through the evaporator even when the hydraulic load changes.

The inverter pump should also be regulated according to the “variable flow” logic managed according to determined by plant requirements.

The pumps should be of the Monobloc centrifugal type, with two-pole electric motor with IP54 protection, Class F insulation and at least IE3 efficiency class.

The pump housings are made of cast iron, All the wetted parts part to be made of SS or Bronze material or any other corrosion resistant material

The hydraulic circuit of the pump includes an external check valve on the delivery of eachpump. Each pump is also equipped with an automatic electrical protection switch.

The microprocessor controls manage the rotation and stand-by of the pumps and automatically start the pump.

The pumps should be suitable for outdoor environmental use, without any problem of corrosion.

❖ TESTING

The units are factory tested and supplied complete with oil and refrigerant.

Computer Software generated technical data sheet should be attached with the offer. If required the same needs to be demonstrated during the time of final approval.

The load testing can be done at site by using dummy load of 100KW for 10 racks (8 racks x 7.5KW and 2 racks x 20KW).However full load test for 200KW for 20 racks with each rack of 10 KW must be provisioned for future.

The heat exchanger (air side) must consist of heat exchange coils with aluminum fins and internally grooved copper tubes mechanically expanded in order to obtain optimum metallic contact for maximum exchange efficiency. The coil must be fitted with an integrated sub-cooling circuit to increase energy efficiency and the refrigerant distribution across the heat exchanger

TECHNICAL SPECIFICATIONS:

Sl. No:	Parameter	Description	Compliance Yes/No
1	Air cooled Chiller Cooling Capacity (TR / KW)	60TR	
2	Compressor Type	Scroll Type	
3	Chilled Water IN & OUT	20 deg C and 13 deg C	
4	Required media temperature	15 Deg. Cel.	
5	Refrigerant	R410/R407c or any equivalent eco-friendly refrigerant	
6	Chilled Water Pipe	PPR (poly propylene random) or Stainless Steel	
7	Piping insulation thickness	Minimum 19 mm.	
8	Chilled Water Flow Rate	Minimum 170 LPM @ 3 Bar head pressure OR as per OEM recommendation considering the site.	
9	Supply and return piping and fitting material	PPR (poly propylene random) material only. MS & GI (Galvanized Iron) pipes are not allowed. All possible fittings also should be in SS or PPR material	
10	Piping insulation MOC	Nitrile foam insulation	
11	Other Features	All pipes shall be insulated using nitrile rubber sleeves of adequate thickness to avoid condensation on pipes. All piping Accessories, like Flow Switch, Balancing Valves, Ball valves, Strainers are with Reputed make.	
12	Other Terms	Manufacturer Authorization Form (MAF) from the OEM to be provided	

5.3.2 HIGH DENSITY CLOSED LOOP IN RACK PRECISION AIR COOLING UNIT

❖ GENERAL

The Data Center and server racks should be equipped with cooling units to provide closed loop precision cooling system which should be able to cool the equipment uniformly right from 1st U to 42nd U of rack through row/rack-based cooling.

The AC Units should have high sensible heat ratios, to match high sensible loads of Computer/Server Rooms/ Switch room. A Microprocessor controlled, chilled water Precision package AC system shall be suitable to take thermal and air qty. inputs from the server and adjust its operation accordingly so as to achieve highest levels of performance and efficiency.

The Indoor unit shall comprise of Chilled water-based Evaporator coil with hydrophilic coating,

EC fans, Microprocessor controllers, internal power and Control wiring, Power and Control contactors, water leak detectors and Other Electrical accessories. **N+1 REDUNDANCY TO BE PROPOSED**

❖ THE UNIT SHALL BE DESIGNED AS PER FOLLOWING CONDITIONS

1. Unit return air temperature : 37 Deg C
2. Chilled water In/Out : 13 / 20 Deg C
3. Sensible Cooling Capacity : 30 KW or Above
4. Air Flow Direction : Horizontal-in front of the racks
5. Air inlet Temp & RH : Set point ± 1°C (DB)
6. Air Quantity : Modulating as per server load requirement
7. Units should be able to work for fixed supply/return air logic instead of return air control logic. Units should also have sensors to record temperature feedback. This must regulate the fans for required airflow in the cold aisle.
8. The Units shall be designed with all moving parts mounted on anti-vibration mounting and carefully balanced to ensure minimum vibration.
9. If required, the unit shall be tested at site for performance rating before acceptance. Performance test shall be a heat load test using heater supplied by the Precision unit supplier.
10. It's mandatory to submit software selection output of the proposed unit. The specific power consumption and other performance details shall be as mentioned in BOQ.

❖ DESIGN REQUIREMENTS

The environmental control system shall be a factory assembled unit. It shall be floor mounted, optimized for maximum cooling capacity in a minimum footprint. It shall be specifically designed for service from the front and rear of the unit. The system shall be designed for blow-through air arrangement to insure even air distribution to the entire face area of the coil. The unit shall be capable to be mounted between the racks or at the end of row. The unit shall modulate cooling capacity and airflow based on requirements.

These units are to be supplied with 400 Volt, 3 phase, 50 Hz power supply.

❖ QUALITY ASSURANCE

The specified system shall be factory end of line tested (functionality test) before shipment and designed to meet Industry best standards. The system shall be designed and manufactured according to world-class quality standards. The manufacturer shall be ISO 9001 certified.

❖ COOLING CIRCUIT

The water circuit shall include a cooling coil and 3-way or 2-way modulating valve. The Microprocessor based controller positions the valve in response to room conditions. COOLING COIL The chilled water coil shall have sufficient face area. It is constructed of copper tubes and aluminium fins. A stainless- steel condensate drain pan should be provided.

❖ FAN SECTION

Units shall be with variable speed EC Fans, High efficiency, external rotor electronically commutated (EC) motor with integrated electronics, True soft start characteristics (inrush current lower than operating current), Backward curve, corrosion resistant fan wheel, Maintenance free design and construction. The fan section shall be designed for higher air flow. The fan shall be protected over temperature of motor, electronics, locked rotor protection, short circuit of motor output. Fans are IP54, Protection class F.

❖ CABINET AND FRAME

The frame shall be painted with a powder coat finish to protect against corrosion. The unit is to be totally front and rear accessible including any component removal. Unit shall be provided with levelling feet for an easy unit placement into the row of racks.

❖ MICROPROCESSOR CONTROLLER

The controller is microprocessor based. It consists of the Main Board and a distributed intelligence of devices able to collect thermodynamic data (sensors) and activation of refrigerant circuit components (compressors, valves, etc...)

The controller allows setting and monitoring of the following space parameters:

- Air inlet Temperature
- Air supply Temperature (remote sensors at rack inlet)
- Supply Temperature set-point
- Supply Temperature band
- Rack Min, Max and Average temperature
- CW temperature

The example of available warnings / alarms:

- High supply temperature
- Low supply temperature
- High CW Temperature

Following features to be incorporated in the controller:

- Status Report of the latest minimum 400 event-messages of the unit.
- LAN management: functions provided as standard include stand-by (in case of failure of the unit in operation, the second one starts automatically), and automatic rotation.
- Automatic restart after a power failure.

❖ **MONITORING**

Suitable provision to be made for SNMP/Modbus connectivity.

The unit shall also include input for remote on-off and volt-free contacts for simple remote monitoring of low and high priority alarms: high/low temperature, fan/control failure and others are available.

❖ **CONDENSATE PUMP**

Pump is complete with integral dual float switch, pump - motor assembly and reservoir. External condensate pump with accessories will be accepted subject to approval from OEM for integration.

❖ **ELECTRICAL WORK**

❖ **Each Precision AC unit should be provided with in-built electrical panel. Necessary 415 Volts +/- 10%, 3 Phase, 4 Wire (With Neutral), 50 Hz +/- 5% Power shall be provided by Customer at each unit's electrical panel. Balance distribution of Power is in the Scope of Bidder. All Electrical cabling should be of armored Copper or as per OEM design recommendations OEM'S QUALIFICATION CRITERIA:**

- Manufacturer should have experience in manufacturing & installation of Precision AC units in India for last 10 (Ten) years;
- Manufacturer should have ISO 9001, ISO 14001 Certification;
- Manufacturer should have installation base in the respective location for such Units and fully equipped Service center (For Precision AC units) to give prompt & efficient service. Alternatively, the OEM must have authorized service center or authorized service engineer with sufficient spares, at Thiruvananthapuram.
- Bidder to submit units' installation list – Top 20 large installations in India
- Software generated output of proposed unit is must

TECHNICAL SPECIFICATIONS:

Sl No:	Parameter	Description	Compliance Yes/No
1	In-rack Cooling Capacity (TR / KW)	30 KW or above	
2	Chilled Water In / Out Temperature	13°C / 20°C	
3	Unit Return Air Temperature	37 dec C	
4	Air inlet Temp & RH	Set point ± 1°C (DB)	
5	Sensible Cooling Capacity	30KW	
6	Air Flow Direction	Horizontal in front of the Rack	

7	Air Quantity	Modulating as per server load distribution	
8	Connectivity	SNMP / Modbus	
9	Other Features	The Indoor unit shall comprise of Chilled water-based Evaporator coil with hydrophilic coating, EC fans, Microprocessor controllers, internal power and Control wiring, Power and Control contactors, water leak detectors and Other Electrical accessories.	
10	Other Terms	Manufacturer Authorization Form (MAF) from the OEM to be provided	

5.4 TEMPERATURE, HUMIDITY, AND WATER LEAK MONITORING SYSTEM

The goals of safety & monitoring system are to efficiently protect people, assets, data and the environment from the dangers and effects of fire, and to minimize material damages, loss of data, operational interruptions and the consequent loss of business.

The system should monitor all IT racks enclosures for temperature humidity and water leak. The unit should be the central unit of the monitoring system. The unit should have TCP/IP connection to the data network

via Ethernet, configured via Web / USB. The unit should send alarms via an e-mail server and connect to the Network Management System of a company via SNMP/OPC.

TECHNICAL SPECIFICATIONS:

Sl No:	Parameter	Description	Compliance Yes/No
1	Sensors	Sufficient sensors for measuring the temperature, humidity, Water leakage, Access in the contained and cooled areas of the server racks should be provided	
2	Rack Biometric access control	Rack Biometric access control : Minimum 1 Biometric reader for each row of rack with door control modules to be provided which is integrated to the rack monitoring system OR Common biometric access control system controlling all door (front & rear) of the integrated smart rack solution	
3	Emergency Door Opening	Emergency automatic Front / Rear door opening kit in case of cooling failure/high temperature alarm must be provided for all the racks..	

All piping should be installed and tested in phase 1 itself so that future-cooling units does not requires any additional piping during installation other than connection pipes/accessories of the cooling unit. The piping should be provisioned to connect future cooling units with minimum interruption to the active cooling units

5.5 SAFETY & SECURITY SYSTEMS

5.5.1 FIRE ALARM AND FIRE SUPPRESSION SYSTEM FOR RACKS

The integrated infrastructure solution should be designed as a complete stand-alone unit with security, fire detection and fire suppression systems. Each of the systems is inter-operable and inter connected. Environmentally friendly clean agent should be used to ensure that no harm to human beings and environment is caused. Following systems should be installed.

1. NFPA approved Clean Agent for fire suppression system
2. Fire detection and alarm systems, with detectors and panel.
3. VESDA
4. Protected area: The entire volume of the server racks shall be protected with fire detection and fire suppression system. The doors should be secured by Access Control system
5. The clean agent system shall be designed and installed as per NFPA latest Edition. SMPV, Petroleum and Safety Explosives Organization (PESO) approved cylinder filled with clean agent is installed.
6. The integrated Data Center area should be covered by Rodent Repellent System

5.5.2 RODENT REPELLENT SYSTEM

Rodent repellent system shall be provided in the Server Room and UPS room to protect the premises against any rodent infestation. The technical specifications of rodent repellent system are given below:

1. VHFO system shall transmit high frequency sound waves (above the 20 KHZ frequency) which are inaudible and harmless to humans but a u d i b l e and painful to pests thus driving them away.
2. VHFO system shall consist of one Master Console and Satellites / Transducers to serve raised floor void, room and false ceiling in the Data Center and electrical room.
3. The sound waves propagated shall be linear sine waves with constantly varying frequencies
4. Operating frequency: Above 20 KHz (Variable)
5. Power supply: 230 V AC, 50 H
6. Power output: 800 mill watt per Satellite
7. Manufacturer Authorization Form (MAF) from the OEM to be provided

5.5.3 AUTOMATED MODULAR FIRE SUPPRESSION SYSTEM FOR SERVER ROOM

The automated modular fire suppression system should be provided sufficient in quantity for serving the requirement of the Server Room

Sl No:	Parameter	Description	Compliance Yes/No
1	Gas Type	Hazard-free clean agent or Seal Fire	
2	capacity	5 kg	

3	WORKING PRESSURE	15 BAR	
4	Labels	Clear Instruction Label & No	
5	Working Type	Automatic Modular Types Fire	
6	Approval for the GAS	FM & UL Certified	
7	Mounting type	Ceiling Mounted	
8	Other Terms	Manufacturer Authorization Form (MAF) from the OEM to be provided	

5.6 DG SET

Supply installation testing and commissioning of 3 phase 415V, 50 Hz, 1500 RPM, 500KVA (minimum) to meet the load requirements. Salient type (having acoustic enclosure canopy approved by CPCB as per specifications attached). The DG set to have following:

1. The engine: Shall have water/coolant cooled multi-cylinder diesel engine capable of delivering minimum 625.00 BHP complete with fuel filter, air filter, by pass filter starter, Dynamo flywheel, coupling guard, governor, battery charger alternator, fuel/feed pump. Electric hour meter either on the instrument panel or on the control panel etc. complete as per specifications and required.

2. DG sets shall include all accessories item, protections, safety parameters, control panel base frame with anti-vibration mount pad , fuel tank with indicator, fuel pipe with pump, residential type exhaust silencer, required amp-hour battery complete with copper conductor battery leads of required length and socket/clamps including M.S. stands for battery with wooden base, adaptor box etc., complete as required for DG set as per manufacturer recommendations or as per direction of the engineer in charge at site.

3. The alternator: shall be of Three phase, 4 wire, 50 Hz, 0.8 PF at 415 volts, 1500 RPM. Capable of delivering 500KVA (minimum)coupled to diesel engine mentioned above.

4. DG Set along with Civil Foundation, Tinned roof and synthetic insulating mat suitable for required DG Set to be supplied at site

DG TECHNICAL SPECIFICATIONS

Sl No.	Parameter	Description	Compliance Yes/No
1	DG Capacity (KVA)	500 KVA(Minimum) / 3 Phase 415V,	
2	RPM (Revolutions per minute)	1500 RPM	
3	Engine BHP	Minimum 625.00	
4	Alternator Volts	415 Volts	
5	Internal Fuel Tank	140 – 160 LTR	
6	External Fuel Tank	990 LTR	

7	Other Features	The engine: Shall have water/coolant cooled multi-cylinder diesel engine capable of delivering minimum 625.00 BHP complete with fuel filter, air filter, by pass filter starter, Dynamo flywheel, coupling guard, governor, battery charger alternator, fuel/feed pump. Electric hour meter either on the instrument panel or on the control panel etc. completes as per specifications and required. DG sets shall include all accessories item, protections, safety parameters, control panel base frame with anti-vibration mount pad, fuel tank with indicator, fuel pipe with pump, residential type exhaust silencer, required amp-hour battery complete with copper conductor battery leads of required length and socket/clamps including M.S. stands for battery with wooden base, adaptor box etc	
8	Other Terms	Manufacturer Authorization Form (MAF) from the OEM to be provided	

Note:

1. 500KVA Datacenter continuous rated diesel generator set is the minimum requirement. In case the bidder's technical solution requires a higher capacity Diesel generator, the same must be considered. Bidder must submit a detail load sheet as per Tier III requirements.

2. First time oil fill will be in the scope of the bidder. Also oil required during testing (including uptime certification testing) will be in scope of the bidder.

5.7 ACCESS CONTROL

Biometric finger print and proximity card readers shall be installed at the entrance of Datacenter, Server Room, Console room and UPS room to restrict entry of unauthorized persons and to enforce access control policies. The technical specifications of the access control system are given below:

- The biometric finger print and proximity card reader's transactions are to be stored in the storage of access controller.
- The reader should have certifications like FCC/ CE
- All the necessary hardware, software with its cabling is to be supplied and installed
- The access control mechanism must have biometric as well as proximity card readers

5.8 MODULAR UPS SYSTEM with N+N REDUNDANCY

The Uninterruptible Power Supply (UPS) systems are required to provide continuous, regulated AC power to the equipment's installed in the Datacenter, irrespective of any disturbances or disruptions occurring on the main power supply. 200 KW modular UPS module either 25W/30KW/40KW/50KW power module (Minimum 2 Modules to be provided).

This specification describes the modular UPS, a modular uninterruptible power supply system for critical equipment

applications. It defines the electrical and mechanical characteristics and requirements for a continuous-duty three-phase, solid-state, uninterruptible power supply system. The uninterruptible power supply system, hereafter referred to as the UPS, shall provide high-quality AC power.

Should support the following standards

1. Safety Standard: IEC/EN 62040-1
2. Electromagnetic Compatibility Standard (EMC): IEC/EN 62040-2, Emission Class C2, Immunity Class C3
3. Performance Standard: EN 62040-3
4. The UPS shall be a true on-line double conversion, voltage and frequency independent (VFI) technology in accordance with standards EN 62 Wiring 040-3
5. Wiring practices, materials, and coding shall be in accordance with the requirements of the EN 62040-1
6. Output Voltage Distortion with Non-linear Load (EN 62040-3)
7. Certification - CE, IEC
8. Manufacturing - ISO 9001:2008, ISO 14001:2004, OHSAS18001
9. Degree of Protection –IP 20

The UPS system shall consist of the following main components:

1. UPS frame
2. UPS modules

The UPS frames shall be 2 Nos of 200 KVA/KW. The UPS modules shall be parallel-connected inside the frame, all having the same power rating. Each modular UPS unit shall operate in double-conversion mode and shall be of the VFI-type as per standard IEC/EN 62040-3.

Each UPS module shall have & made up of the following components:

- Rectifier
- Inverter
- Battery charger
- Static bypass
- Control logic
- User interface (display + buttons + mimic diagram)

Sl. No	Parameter	Description	Compliance Yes/No
1	Should support redundant operation	The UPS system will operate in an N+N configuration where N is the capacity component of the UPS units.	

		Day 1 Capacity should be minimum 100 kW with 25KW/30 KW/ 40KW/50KW modules expandable up to 200KW in single frame for each UPS	
		The battery string should consist for Each UPS module or as a common string for all modules as per OEM design.	
		The malfunction of one of the UPS unit's power or control modules shall cause that particular UPS unit to be automatically isolated from the system and the remaining UPS units shall continue to support the load. Replacement or repair of a UPS unit shall be achieved without disturbance to the connected load, while the remaining modules continue operating in online mode (online safe swap ability)	
2	Modes of Operation	The UPS shall be designed to operate as a true on-line, double conversion Voltage and Frequency Independent (VFI) system in the following modes:	
		Normal - The critical AC load is continuously supplied by the UPS inverter. The input converter derives power from the utility AC source and supplies DC power to the inverter. The battery charger shall maintain a float-charge on the battery	
		Battery - Upon failure of utility AC power the critical AC load is supplied by the inverter, which obtains power from the battery. There shall be no interruption in power to the critical load upon failure or restoration of the utility AC source	
		Recharge - Upon restoration of utility AC power, after a utility AC power outage, the input converter shall automatically restart and resume supplying power to the inverter. Also, the battery charger shall recharge the battery. In addition to the input conversion soft start of each UPS module, when a mains recovery occurs, all single input converters shall switch on in a sequential way with a delay of about 5 seconds from each to the other module within the system configuration.	
		Automatic Restart - Upon restoration of utility AC power, after a utility AC power outage and complete battery discharge, the UPS shall automatically restart and	

		resume supplying power to the critical load on inverter	
		Bypass - The bypass shall provide an alternate path for power to the critical load that shall be available UPS modules through common STS, Automatic - In the event of an internal failure or should the inverter overload capacity be exceeded; UPS shall perform an automatic transfer of the critical AC load from the inverter to the bypass source. Manual - Should the UPS need to be taken out of service for limited maintenance or repair, manual activation of the bypass shall cause an immediate transfer of the critical AC load from the inverter to the bypass source	
3	Nominal Input Voltage (V)	380V/400V/415V	
4	Input Frequency (Hz):	40 – 70	
5	Topology	True online double conversion	
6	Classification	VFI - SS – 111	
7	Type of power supply (input/output)	3ph + N / 3ph + N	
8	Input voltage and tolerance	380V/ 400V/415V (line to line) with tolerance of 320 V to 460 V	
9	Dual Input Feed (Mains & Aux mains)	Required	
10	Power factor	PF=0.99 @ 100 % load	
11	Input Distortion THDI	Sine-wave THDi = < 3 % @ 100% load	
12	Output Rated Voltage(V)	3x380/220V or 3x400/230V or 3x415/240V	
13	Output Frequency Hz	50 Hz or 60 Hz	
14	Crest – Factor	03:01	
15	Overload Capability on Inverter	125 % load 10 min. 150 % load 60 sec.	
16	Output Voltage Stability	Static: < +/- 1% Dynamic (Step load 0%-100% or 100%-0%) < +/- 4% Bypass operation: +/- 15%	
17	Output Voltage Distortion	With Linear Load <+/-1 % With Non-linear Load (EN 62040-3) < +/- 4%	
18	UPS Efficiency	The typical overall efficiency (AC/AC, on-line mode) shall be > 95 % @ 100% load 96% @ 75% load 96% @ 50% load, 95 % @ 25% load	
19	Output Frequency Tolerance	Synchronized with mains < +/- 2 % (selectable for bypass operation) or < +/- 4 % Free running +/- 0.1 %	
20	UPS operation ambient	0°C to 40°C	

21	Bypass static switch each	Required	
22	Maintenance Bypass	Required Inbuilt	
23	permissible Unbalanced	100% (all three phases regulated	
24	Batteries	Each UPS should support 20 Minutes backup at 100KW Load. The battery system shall consist of gas recombination, valve regulated, lead acid cells, flame retardant batteries shall be provided The UPS battery charging circuit shall comprise of a separate battery charger and not depend on a charge voltage being derived from the UPS input rectifier. Consequently, the battery charging voltage shall have zero AC (ripple) content. The batteries shall be housed in Rack comprising a floor-standing. A fully discharged battery system shall be capable of being recharged to 80% of the UPS output capacity within a maximum period of 10 times the normal total discharge time period. The battery shall be housed in Rack and sized to support the inverter at rated load and power factor, in an ambient temperature between 20° and 25° C, for a 20 minutes' backup time on total load of 100KW and it has to be divided in each UPS modules according to the UPS capacity. The expected life of the battery shall be 3 years	
25	Environmental conditions	The UPS system shall be designed for operation in altitudes up to 1000 meters, without the need for derating or reduction of the above environmental operating temperatures. The audible noise generated by the UPS system during normal operation shall not exceed 76 dBA per cabinet measured at 1 meter from the front of the UPS. The UPS system shall be able to withstand a minimum 4kV electrostatic discharge without affecting the critical load	
		The UPS system cabinet shall comprise of a floor standing steel enclosure to house the power system, control systems, battery connections and all associated necessary connections for the correct operation of the UPS in accordance with the requirement of the specifications. All switchgear and interconnections must be adequately protected to enable an isolated section to be safely maintained or repaired whilst the remaining system supports the load.	
26	Features required	All materials and components making up the UPS shall be new, of current manufacture, and shall not have been in prior service except as required during	

		factory testing. The UPS shall be constructed of replaceable subassemblies	
		The UPS system comprised of modular, hot swappable and housed in a single free-standing enclosure and meets the requirements of IP20.	
27	Automatic Battery Test	The UPS modules shall be of double conversion, continuous duty (true on-line), plug-in and hot swappable technology, in redundant- parallel operation, accommodated in the UPS system cabinet. Each UPS module shall consist, basically, of a rectifier/charger, a solid-state inverter, a static transfer switch and controller with LCD display. The incorporation of the UPS controller and control panel into every individual module shall be considered as a serious advantage, if one UPS module fails, the UPS system shall have the capability to replace the faulty UPS module without transfer the load on by- pass. Also, one common control panel to monitor all the UPS modules for high availability. The UPS shall be forced air cooled by internally mounted fans. The input converter shall be provided with AC input over current protection. The UPS shall have built-in protection against under voltage, overcurrent, and overvoltage conditions including low-energy surges introduced on the primary AC source and the bypass source. To prolong battery life, the UPS shall contain temperature-compensated battery charging. The battery charger shall be ripple-free avoiding premature battery ageing. To prevent battery damage from over discharging, the UPS control logic shall control the shutdown voltage set point. This point is dependent on the rate of discharge. The front panel shall be an individual panel each UPS module, each UPS modules consist of multiple status LEDs (one for each UPS module), switches, and a two line by twenty-character backlit LCD display for additional alarm/configuration information (one for each UPS module). During normal operation (on- line), all mimic display LEDs shall be green in color. Minimum required indications are Line, Battery, Inverter and Bypass	
		The UPS shall initiate an automatic battery testing sequence periodically (once a month), at a programmed day and time of day, selectable by the end user. The user will be able to able and disable the automatic battery test. Should a failure of the battery occur, the UPS will immediately return to normal mode and fault signals (visual, audible, and remote	

		via serial) shall be communicated. No audible or remote (via serial/contact closures) indication of the battery test shall be communicated during the duration of the automatic battery test. The automatic battery test shall be able to operate only if no alarms conditions affect the UPS and if the battery is at least 90% of its full capacity.	
28	Communications	The UPS shall allow for flexibility in communications. The UPS shall be able to communicate through two communications ports simultaneously; the media of either communications port may change without affecting the operation of the UPS. The use of relay contacts shall not affect the operation of the two communications ports. Serial Communication. The UPS shall be able to communicate through RS232 and USB.	
29	Network Communications	10/100Mbit Ethernet card should be include for SNMP communication over a local area network.	
30	Remote shut down	The function shall allow the user to disable all UPS (Modules) outputs in an emergency situation	
31	User documentation	The specified UPS system shall be supplied with one (1) user's manual. Manuals shall include installation drawings and instructions, a functional description of the equipment with block diagrams, safety precautions, illustrations, step by step operating procedures, and routine maintenance guidelines.	
32	Manufacturer Qualifications	A minimum of 5 years' experience in the design, manufacture, and testing of solid-state UPS systems is required	
33	Factory Testing	Before shipment, the manufacturer shall fully and completely test the system to assure compliance with the specification. Test Reports to be submitted	
34	Other Terms	Manufacturer Authorization Form (MAF) from the OEM to be provided	

5.9 MONOLYTHIC TYPE UPS SYSTEM (20 KW – Minimum Requirement))

Sl. No	Parameter	Description	Compliance Yes/No
1	Manufacture of UPS	Name & Address of manufacturing units to be indicated.	

2(a)	Technology	Double conversion, pulse width modulated with IGBT rectifier and IGBT based Inverter and digitally controlled.	
2(b)		Compliance to IEC 62040 (-1/2/3)	
2(c)		Compliance to classification VFI-SS-III IEC 62040	
2(d)		Insulation group (over voltage) category 2 as per DIN / VDE 019 or as per OEM.	
2 €		Radio interference suppression as per EN 50091-2	
3(a)	Environmental requirement	Storage ambient temperature (-)50 to70deg C	
3(b)		Operating ambient temperature 0 to 40 deg C	
3(c)		Relative humidity	
3(d)		Air requirement with 90% load	
3(e)		Protection class IP 20 as per DIN/VDE 0470 Part-II /IEC 529	
4	System rating		
4.1	System Configurations	As per schedule of quantities	
4.2	Upgradeable	Provision of adding additional UPS units in parallel redundant mode with existing units up to 3 numbers. Tenderer to indicated maximum number of similar rating of units that can be provided in parallel redundant mode.	
5	Operating Parameters		
5.1	Input voltage rating	380/400/415 V (user selectable) 3 phase.	
5.2	Input voltage range	(+/- 20% @ 400V)	
5.3	Input frequency	50 Hz ± 9%	
5.4	Input power factor	Greater than (>0.99 IGBT based rectifier)	
5.5	Input current distortion	Less than (<3% @ 90% load) THD If not, please confirm inclusion of cost of active filter	
5.6	Output voltage rating	380/400/415 V user selectable 3 phase 4 wire + ground	
5.7	Output voltage regulation		
5.7.1		±1% steady state for a static 90% unbalanced load	
5.7.2		Unbalanced load and dynamic at load step 0- 90% (±) 3%	
5.8	Output frequency	± 0.05 Hz	
5.9	Output power factor	1 Unity KVA / KW	
5.1	Output harmonic distortion		
5.10.1		1% THD maximum and 1% any single harmonic for a 90% linear load.	
5.10.2		2% THD maximum for a 90% non-linear load	
5.11	Crest Factor:	03:01	
5.12	Maximum Nonlinear Loading	90%	

5.13	Voltage Transient Response		
5.14		± 1% for a 50% load step.	
5.14.1		±3% for a 90% load step.	
5.14.2		Recovery Time < 20 msec	
5.15	Phase Displacement		
5.15.1		120 degrees ±1 degree for balanced load	
5.15.2		120 degrees ±1 degree for 50% unbalanced load.	
5.15.3		120 degrees ±2 degree for 90% unbalanced load.	
5.16	Overload Capability		
5.16.1		110% for 60 minutes in normal operation.	
5.16.2		125% for 10 minutes in normal operation.	
5.16.3		150% for 60 sec in normal operation	
5.16.4		105% continuously in bypass operation.	
5.16.5		1000% for 20 milliseconds in bypass operation.	
5.17	AC to AC efficiency including at nominal input voltage with batteries fully charged in double conversion mode		
5.17.1		At 90% linear load, (>94%),	
5.17.2		At 75% linear load, (>95%),	
5.17.3		At 50% linear load, (>95%),	
5.18	Operating cost	Calculation for round the clock (7x 24x 365) @Rs. 6/kWH to be furnished.	
5.19	Acoustical Noise with 50% /90% load	< 65 dB (A) of noise, typical, measured at 1 meter from the operator surface.	
5.2	Output waveform	Pure sine wave	
5.21	Heat loses	To be furnished.	
5.22	MTBF of the system	Minimum 200,000 hours	
6	Automatic integral static bypass	To be provided (inbuilt)	
7	Maintenance bypass	To be provided (inbuilt)	
8	Automatic restart	Upon restoration of mains AC power, after a mains AC power outage and complete battery discharge, the UPS shall automatically restart and resume supplying power to the critical load and the battery charger shall automatically recharge the battery.	
9	Display and Control		
9.1	Metered parameters		
9.1.1		Input AC voltage (line-to-line, three-phase simultaneous).	
9.1.2		Input AC Current (line-to-neutral, three-phase simultaneous).	
9.1.3		Output AC voltage (line-to-line, three-phase simultaneous).	

9.1.4		Output AC Current (line-to-neutral, three-phase simultaneous).	
9.1.5		Output frequency	
9.1.6		Battery voltage	
9.1.7		Battery Current (charge/discharge).	
9.1.8		Battery temperature	
9.2	Event log	Display a log of status and alarm events to be provided.	
9.3	Controls		
9.3.1		Set the alphanumeric display language to English	
9.3.2		Display or program the time and date	
9.3.3		Enable or disable the automatic restart feature.	
9.3.4		Transfer to or from static bypass operation.	
9.3.5		Transfer or to from forced battery operation.	
9.3.6		Program the unit for economy operation.	
9.3.7		Program the battery charger	
9.3.8		Calculate battery back-up time	
9.3.9		Test battery condition on demand	
9.3.9		Program the unit to periodically test battery condition	
9.3.10		Program voltage and frequency windows	
9.3.11		Calibrate metered parameters	
9.3.12		Enable or disable adaptive slew rate. Set maximum slew rate.	
9.3.13		Adjust set points for different alarms.	
9.3.14		Program the remote shutdown contact (enable/disable remote shutdown, polarity display).	
9.3.15		Set the delay for the common fault contact.	
9.3.16		Program the unit for soft start for use with a generator.	
9.4	Push buttons	ON/OFF push buttons to connect or disconnect critical loads to be provided	
9.5	Potential free contacts	4 to 6 contacts to be provided.	
9.6	Communication interface board	For following ports. ➢ RS232 serial port. ➢ RS485 serial port. ➢ COM-PORT with the following normally open or normally closed potential free contacts. UPS on. o Static bypass operation o Battery operation o Battery low	

9.7	Temperature compensated charging	To be provided	
9.7.1	Back Feed protection circuit	To be provided	
9.8	Remote UPS monitoring kits	To support following systems to be provided Latest version of Operating System should be provided by the bidder.	
9.9	Protection	Output fully isolated from input	
		Built in overload	
		Built in short circuit	
		MCCB protection at input	
		Over temperature sensing circuit	
9.1	Alarms	Mains fail	
		Low battery	
		Over load	
		UPS on bypass	
		UPS on battery	
9.11	Software capability	The UPS shall be capable to communicate with network operating system and shall be capable of doing safe shutdown of critical load by means of an auto shutdown software.	
9.11	SNMP / Web management	To be provided as standard	
10	Battery Parameters		
10.1	Type	Valve Regulated Lead Acid 12 VRLA SMF	
10.2	Make	As per make list	
10.3	Battery charger	Current limiting max voltage 2.33 volts per cell	
10.4	Battery backup	For each unit as per Schedule of Quantities	
10.5	Max. charging current	10-15 % of AH rating.	
10.6	Battery rating for each UPS In VAH	To be furnished. Calculations in support of rating selected to be provided	
11	Overall weight and dimensions		
11.1	Overall dimensions		
	UPS system	To be furnished	
	Battery bank	To be furnished	
	Floor Loading kg/m2	To be furnished	
11.2	Overall, Weight		
	UPS system	To be furnished	
	Battery bank	To be furnished	
12	Cable connections		
12.1	Cable cross section	□ Input	
		□ Bypass	

		□ Battery	
		□ Output	
12.2	Cable connection	From above	
12.3	Accessibility	From front	
13	Service and After sales service		
13.1		Availability in city of site location	
13.2		Service support available round the clock.	
13.3		Spare parts available round the clock.	
14	Battery Cabinet	Closed Battery cabinet OR battery rack with terminal cover to be provided to house the batteries which is to be placed in the Power room on the second floor near the Data Center room.	

Note: 20KVA is the minimum requirement. In case the bidder's technical solution requires a higher capacity UPS, the same must be considered. Bidder must submit a detailed load sheet as per Tier III requirements.

5.10 CCTV SYSTEM

5.10.1 NETWORK VIDEO RECORDER

Record and monitor up to 16 IP channels at 1920 fps @ 4CIF/VGA or 1920 fps @ 720p HD or 1920 fps @ 1080p (4 Mbps bitrate) HD. Network bandwidth/throughput supported per NSM/NVR with Incoming: 256 Mbps, Outgoing: 425 Mbps providing a Total: 681 Mbps. Native device integrations supporting Series cameras' new features: 4K resolution, H.265 video compression codec, 3D PTZ control, 360° camera support, and intelligence events with 6/8TB Surveillance HDD installed.

5.10.2 SUPPLY AND INSTALLATION OF 4M IP DOME CAMERA:

VIDEO STANDARD- NTSC/PAL, SCANNING SYSTEM- Progressive scan, IMAGE SENSOR- 1/2.8" 4 Megapixel, progressive scan CMOS, NUMBER OF PIXELS (H×V)- 1920x1080, MINIMUM ILLUMINATION Color: 0.001Lux @f/1.6, B/W: 0Lux @f/1.6(IR on), S/N RATIO- 50 dB or more, ELECTRONIC SHUTTER SPEED -Auto/Manual, 1/3~1/100000s, IR DISTANCE- 30m, DAY/NIGHT Mechanical ICR (ON / OFF / AUTO selectable).

5.10.3 OTHER ACCESSORIES:

The Camera CCTV should consist of 43-inch Display 43" 4K UHD (3840 X 2160) LED display, 400 Cd/m2, HDMI X 2, DVI X 1, DP X 1, VGA X CAMERA1, for real time monitoring. All other accessories required for the smooth operation of CCTV system should be considered. CAT6 cable should be used for cabling

5.11 CIVIL WORK

Making of partitioning of the room should be done as per the drawing, which includes three zones.

Zone A: Rack Installation Area,

Zone B: Comprises of UPS / Electrical Area

Zone C: Comprises of NOC room

5.11.1 RAISED FLOOR FOR DATACENTRE:

Providing & fixing steel cementitious raised access floor of Finished Floor height 300mm finished with antistatic high pressure laminate in size 600 x 600 mm x 35 mm with point load 450 kg and uniform distribution load (UDL) 1250 kg per sq. meter as per following specifications: Panel Type - M 1000, Understructure- Edge Support Rigid Grid, Wear resistance (g /cm2) - < 0.08, Bottom profile - Hemispherical shape, Pedestal -all steel construction & silver zinc plated, Exposed surface- Special weather coating on entire surface of the tiles. The same should also be provided with wire manager and tile lifter etc. Providing and fixing 9 mm thick floor insulation below the false flooring and joints should be finished properly as per manufacturer's specification. Provide a tile lifter with 3 Prongs.

5.11.2 RAMP FOR DATA CENTER:

Ramp arrangement at the Entrance with antiskid matting & appropriate support arrangement. Closing off the under floor in area of step to avoid air egress. (Dimension) 1800 (w) x 300 (H) x 3600 (L).

5.11.3 THERMAL INSULATION

Supply & fixing of thermal insulation to base floor/RC slab under the raised floor with 13mm thick, one side aluminum foil faced XLPE / Nitrile rubber of Armflex / Kflex adhered to base floor with manufacturer recommended adhesive.

5.11.4 FALSE CEILING:

Providing and fixing metal false ceiling with powder coated 0.5mm thick hot dipped galvanized steel tiles 595 x 595 mm with regular edge (10mm) suitable for 25mm grid supported on suitable powder coated galvanized steel grid as per manufacturer specification. The same shall be inclusive of cut outs for lighting, AC grills, Fire detectors, nozzles and 25mm thick glass wool of 16kg.sq.m density wrapped on both sides with aluminum foil and placed over each tile etc. The ceiling shall be accessed frequently for cabling, maintenance work and emergency needs. The false ceiling should be properly airtight so that there is no AC loss.

5.11.5 CEMENT/GYPSUM BOARD:

Room partitioning should be done with fire, water and termite resistant wall panel made of two fiber reinforced cement/Gypsum facing sheet on either side of a light weight cement core (50 mm thickness) Wall paneling and partitioning shall made up of two fiber reinforced cement sheets, facing on either side of a light concrete core. The lightweight concrete core shall consist of a mixture of Portland cement, binders, siliceous and micaceous material aggregate that is suitably aerated. Opening in the walls/paneling at required place shall be provided for Electrical and LAN cabling entry to the Data Center and then sealed.

5.11.6 GLASS:

Supply and Installation of 120 Min fire rated 12 mm glass with MS frame for viewing.

5.11.7 DOOR:

Fire rated steel, honeycomb infilled, powder coated, single leaf door (9000x2400mm) with vision glass Fire rated metal door shall be with vision panel of size – 300x200mm, 2 hrs. fire rating and shall have mortice dead lock with one side key and thumb turn, frame shall be made up of 1.6 mm thick galvanized steel with a double rebate (8 bend) profile of 145 x 60 mm with at least 4 nos. holdfasts / anchor fasteners provided on each side for grouting and implementation. Door shall be provided with handle outside and 100 x 300 mm SS plate at internal side, door closures, tower bolts and all required accessories all complete

5.11.8 PAINTING:

Preparing the surface and applying cement-based putty followed by first coat primer and two coat of fire- resistant paint:

Wall finishing shall be with paint of two coats including two coats putty + 2 coats primer, inside wall of

Data Center. Finishing with light color shall be provided to enhance the illumination. All material required for the works shall be of specified and approved manufacturer, delivered to the site in the manufacture's containers with the seals, etc. Paint shall be of non-Toxic environmentally friendly high performance acrylic water-based coating with very low VOC content. Paint shall have property of UV resistant, corrosion resistant, Non-toxic and odorless, Anti fungus, Waterproofing property, heat resistance up to 350-degree C, fire resistance up to 30 Min stain resistant.

5.11.9 NOC ROOM

- Half Glass partitioning towards Rack room
- Half Glass partitioning towards Electrical Room
- One Door for Entry to NOC Room,
- One Door for entry to UPS Room,
- False Ceiling Should be done
- 2 Sets of 40-Watt LED Type light for Lighting
- 3 Nos of 6/16 Amps power socket
- 2 Ton split AC

5.11.10 UPS AND ELECTRICAL ROOM

- Half Glass partitioning towards Rack room
- One Door for entry to Server room
- Raised Floor and false ceiling should be done
- 3 Sets of 40-Watt LED Type light for Lighting
- 2 Ton split AC with redundancy using Timer and Sequencing Control

5.11.11 SERVER ROOM

- Raised Floor and false ceiling should be done
- 15 Sets of 40-Watt LED Type light for Lighting
- 2 Nos of 3 Ton split AC should be provided
- Thermal Insulation

5.11.12 FURNITURE FOR NETWORK OPERATIONS CENTER (NOC) ROOM

The seating capacity for the NOC room is 3. Modular Workstation Table required for NOC Monitoring Fame work for computer table, wall cabinet and shoe rack shall be made of Powder coated aluminum extruded built up standard sections of approved make and fixing with dash fasteners of required diameter and size. Aluminum sections shall be smooth, rust free, straight, metered and jointed mechanically wherever required including cleat angle. Body and shutter for the same shall be made using 18 mm thick Multi wood board of approved brand ISI. Wall cabinet should be fixed over wall with M.S. clamp with expansion hold fasteners raw plug & screws etc. All wall cabinet should be provided with required stainless steel handles 100 mm, S.S. Piano hinges Overall width 35 mm ISI marked finished with nickel

plating and fixing with necessary screws, magnetic catcher Double strip (horizontal type) of approved quality in cupboard /ward robe shutters, including fixing with necessary screws. Sliding arrangement for key board, chair shall be provided for computer table.

3 Nos of High-Quality Computer chairs with following specification to be provided

- Revolving chairs
- Caster wheel
- Position adjustment
- Head and Hand rest

5.12 ELECTRICAL WORK

Electrical system should be designed complied to Tier III architecture. The following design approach is to be adopted.

- Fault tolerant Architecture
- Two active paths
- Light fixtures with light emitting diodes (LED) as part of the Data Center lighting system.

Supply and installation of redundant electrical distribution system for integrated Data Center infrastructure with required MCB/MCCB

5.12.1 UPS POWER FOR NOC ROOM.

UPS switch board with four 5-amp sockets, independent controls, wiring in 20 mm steel conduit with 2.5 sq.mm FRLS PVC insulated copper conductor single core cable, modular switch, modular socket, modular plate and suitable GI box. Earthing the point with 1.5 sq.mm. FRLS PVC insulated copper conductor single core cable etc. as required. Include material supply.

5.12.2 GROUNDING

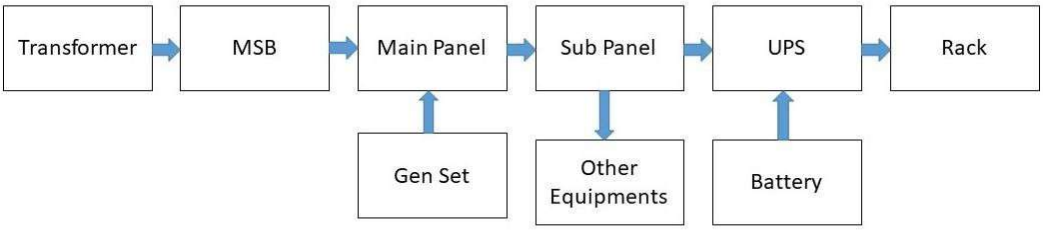
- The Tenderer needs to follow Grounding system that shall be as per UTI Tier III Standard, IS- 3043, IEEE 142-1991 and TIA 942
- The Tenderer shall carry out the grounding of all electrical equipment, steel structures, etc.
- The grounding shall be done by copper conductors / strips of adequate sizes
- In case of site fabricated cable tray/ladder, the runner angles shall be used as ground conductors and shall be made electrically continuous.
- Ground connections shall be made from nearest available station ground grid risers.
- The electrical racks, IT rack, metallic channels will be connected to the earth. The cable channels will be connected to the earth. The entire grounding will converge towards the origin of the grounding of the building.
- Whether specifically shown or not, all conduits, trays, cable armor and cable end box, electrical equipment, such as motors, switch boards, panels, cabinets, junction boxes, lock-out switches, fittings, fixtures, etc. Shall be effectively grounded.

- All equipment, supporting steel structures, panels, boards, switchgears, junction boxes, conduits, etc. shall be grounded in compliance with the provision of I.E. Rules and as per enclosed grounding notes and details.

- All ground connections shall be made from nearest available station ground grid.

5.12.3 ELECTRICAL DESIGN CONCEPTS:

The electrical design will be based on the Tier III design concept. All Electrical cabling distribution boards and connectors should be installed to cater for future racks, PDUs, cooling units etc. planned for future also. Future components should be able to install without any major electrical works/shutdowns. The power flow from the source to load will pass through several stages of equipment. Redundancy and concurrent maintainability are important factors of the design. To achieve this, dual path architecture must be adopted. Electrical flow diagram is mentioned below



5.12.4 MAIN PANEL TECHNICAL SPECIFICATION

Sl No:	Parameter	Description	Compliance Yes/No
1	Main Pannel	Floor or wall mounting, dust and vermin proof, cubicle type MV panel board using following CRCA sheet, powder coated (excluding base frame) and comprising of the following components / devices & complying to IS: 8623. Fabrication of fully partitioned, dust and vermin proof enclosure for panel assembly as per form 4 of IS: 8623 (with latest amendments) using CRCA sheet as per approved design and requirement, with front and rear access facility, bus bar chambers, hinged doors for all switch gear compartments, earthing the doors using 4.00 sq. mm braided copper conductor, etc. as required. CRCA sheet alone be used for the fabrication.	
		2.00 mm CRCA sheet, powder coated	
		SMC sheets in the panel as barriers and shrouding for bus bar interconnections / terminations etc. as Beeding along the periphery of doors / other detachable compartments to make the panel assembly dust and vermin proof including sticking with glue.required.	

		Frame for floor mounting type panel board using channel of class designation ISMC 75 x 40 painting with two coats of synthetic enamel paint over a coat of zinc chromate primer, making good the damages etc. as required.	
		ALUMINIUM strips / rigid conductors conforming to IS: 1867 (with latest amendments) for bus bar arrangement with single strip per phase supported on finger type bus bar supports of adequate size, spacing between supports not exceeding 50 cm and overhang not exceeding 5 cm with all accessories as required.	
		Providing tinned copper earth bus in the panel board.	
2	Other accessories	RYB LED indicators (6 V AC/DC, 12 V AC/DC, 24 V AC/DC, 48 V AC/DC, 63.5 V AC/DC, 110 V AC/DC, 220 V DC, 240 V AC) connections as required	
		6A to 32A rating, 240/415 V, 10 kA, C-curve, single pole MCB conforming to IS/IEC: 60898 in the existing MCB DB	
		Tape wound metering CT of accuracy class 0.5 including giving necessary connections as required.	
		Three phase digital LCD multifunction meter with RS485 of accuracy class 0.5 to read V, A, F, PF, kW, kVA, kVAR, kWh, kVAh, kVARh, run hours, on hours, Phase angle, Interrupts, THD, Events (High-Low), Neutral Current, K Factor including giving connections as required.	
		Aluminium anodised 'DANGER' notice board of size 200 x 150 mm with inscriptions (both in English and Malayalam) and conventional Skull and Bone in Red colour legend plate in the panel assembly.	
		Aluminium anodised legend plate of size 100 x 40 mm with inscription of ‘CABLE ALLEY' in the panel assembly.	
		Aluminium anodised legend plate of size 100 x 40 mm with inscription of 'BUS BAR CHAMBER' in the panel assembly.	
		ISI marked 2.50 mm thick elastomeric fire-retardant insulating mat conforming to IS: 15652 (2006) to withstand 3.3 kV dielectric strength as required.	

5.12.5 SUB PANEL TECHNICAL SPECIFICATION

Sl No:	Parameter	Description	Compliance Yes/No
1	Sub Panel	Floor or wall mounting, dust and vermin proof, cubicle type MV panel board using following CRCA sheet, powder coated (excluding base frame) and comprising of the following components / devices & complying to IS: 8623. Fabrication of fully partitioned, dust and vermin proof enclosure for panel assembly as per form 4 of IS: 8623 (with latest amendments) using CRCA sheet as per approved design and requirement, with front and rear access facility, bus bar chambers, hinged doors for all switch gear compartments, earthing the doors using 4.00 sq. mm braided copper conductor, detachable covers for bus bar chamber and cable alley, powder coating the assembly after subjecting to 9 tank process etc. as required. CRCA sheet alone be used for the fabrication.	
		1.60 mm CRCA sheet, powder coated	
		SMC sheets in the panel as barriers and shrouding for bus bar interconnections / terminations using required bolts and nuts including cutting to shape etc. as required.	
		Beeding along the periphery of doors / other detachable compartments to make the panel assembly dust and vermin proof including sticking with glue.	
		Base frame for floor mounting type panel board using channel of class designation ISMC 75 x 40, making good the damages etc. as required.	
		ALUMINIUM strips / rigid conductors conforming to IS: 1867 (with latest amendments) for bus bar arrangement with single strip per phase supported on finger type bus bar supports of adequate size, spacing between supports not exceeding 50 cm and overhang not exceeding 5 cm, with all accessories as required.	
		Tinned copper earth bus in the panel board.	
2	Other accessories	RYB LED indicators (6 V AC/DC, 12 V AC/DC, 24 V AC/DC, 48 V AC/DC, 63.5 V AC/DC, 110 V AC/DC, 220 V DC, 240 V AC)	
		6A to 32A rating, 240/415 V, 10 kA, C-curve, single pole MCB conforming to IS/IEC: 60898 in the existing MCB DB complete with connections as required.	
		Tape wound metering CT of accuracy class 0.5 including giving necessary connections as required.	

		Three phase digital LED multifunction meter with RS485 of accuracy class 0.5 to read V, A, F, PF, kW, kVA, old energy, On and Run hours, site selectable kWh/ kVAh including giving connections as required.	
		Aluminium anodised 'DANGER' notice board of size 150 x 100 mm with inscriptions (both in English and Malayalam) and conventional Skull and Bone in Red colour legend plate in the panel assembly.	
		Aluminium anodised legend plate of size 100 x 40 mm with inscription of 'CABLE ALLEY' in the panel assembly.	
		Aluminium anodised legend plate of size 100 x 40 mm with inscription of 'BUS BAR CHAMBER' in the panel assembly.	
		Aluminium anodised legend plate of size 100 x 40 mm with inscription of 'BUS BAR CHAMBER' in the panel assembly.	
		ISI marked 2.50 mm thick elastomeric fire-retardant insulating mat conforming to IS: 15652 (2006) to withstand	

5.12.6 DISTRIBUTION BOARD TECHNICAL SPECIFICATION

Sl No:	Parameter	Description	Compliance Yes/No
	DB	450 mm, single phase, heavy duty, 1440 rpm exhaust fan in metal frame.	
		Supply and drawing the following sizes of multi-core PVC insulated and PVC sheathed 1.1 kV grade copper conductor round flexible cables conforming to IS: 694 Part-1 (2010) in the existing surface / recess conduit as required including giving necessary connections of the following sizes.	
		3-core x 1.50 sq.mm (Light fittings)	
		2 x 1.50 sq. mm + 1 x 1.50 sq. mm earth wire	
		Supply and drawing the following sizes of ISI marked 1.1 kV grade PVC insulated stranded single core FRLS copper conductor cables conforming to IS: 694 Part-1 (2010) in the existing surface / recess conduit including giving necessary connections etc. as required.	
		3 x 1.50 sq. mm (6A circuit)	
		3 x 2.50 sq. mm (16A circuit)	
		3 x 4.00 sq. mm (AC circuit)	
		25A 3-pin socket	

		3 module mounting box in CMS (For laptops)	
		Supply and providing 20 mm corrugated PVC flexible conduit as required at site.	

5.12.7 GLANDING AND EARTHING

Minimum 4 numbers of Earth Pit should be provided with resistance of less than 0.5 Ohms

Sl No:	Parameter	Description	Compliance Yes/No
	Glands and termination	Making end termination with brass compression gland and aluminium /Copper lugs for suitable size of PVC insulated and PVC sheathed / XLPE aluminium conductor cable of 1.1 kV grade as required.	
	Earthing	Providing Copper Plate Earthing as per IS: 3043 with 600 x 600 x 6 mm copper earth plate, 20 mm 2.7 metre long GI watering pipe with drilled holes and fixed to the earth plate with 20 x 3 mm GI clamps, GI funnel with weld mesh at the top, filling with required quantity of charcoal, salt, chemical compound etc. including providing masonry enclosure with cover plate having locking arrangement and the construction of inspection chamber shall be with a bed concrete of 1:4:8 PCC using 40 mm broken stone (10 cm thick), brick work in cement mortar 1:6, plastering the surface of brick masonry and the exposed surface of PCC bed with cement mortar 1:4, 12 mm thick, (the finished inside dimension shall be 300 x 300 x 300 mm) but excluding test joint and earth continuity conductor to the plate (in ordinary soil).	
		Providing test joint for the earthing system using 2 numbers of the following size of strips as required. 25 x 3 mm tinned copper strip.	
		Providing earth lead from the test joint to the earth electrode using the following size of conductors / strips as required.	
		25 x 3 mm copper strip tinned at the points of contacts.	
		Clamping the following sizes of strips on surface of wall / parapet / existing cable tray using clamps fabricated from 20 x 3 mm GI flat duly painted or heavy-duty GI spacer saddles, spacing of clamps not exceeding 1 metre, making good the damages, etc. as required 25 x 3 mm copper strip tinned at the points of contacts.	
		Clamping the following sizes of strips on surface of wall / parapet / existing cable tray using clamps fabricated from 20 x 3 mm GI flat duly painted or heavy-duty GI spacer saddles, spacing of clamps not exceeding 1metre, making good	

		the damages, etc. as required. 25 x 3 mm copper strip tinned at the points of contacts.	
		Fixing the following size of strip as earth bus on the surface of wall using necessary finger type supports, connecting all the earths, tinning the points of contacts, making good the damages, etc. as required. 25 x 3 mm copper strip tinned at the points of contacts.	
		Supply and drawing bare earthing conductors of the following sizes along with wiring / cables, interlinking etc. as required.	
		3.15 mm copper conductor (10 SWG).	
		4.00 mm copper conductor (8 SWG).	
		4.75 mm copper conductor (6 SWG).	
		Supply of superior quality copper earth socket for the following sizes of earth conductor including crimping etc. as required.	
		3.15 mm copper socket (10 SWG).	
		4.00 mm copper socket (8 SWG).	
		4.75 mm copper socket (6 SWG).	

5.12.8 LED LIGHT FITTINGS SUPPLY AND FIXING:

40 W, LED type light fixture with all mounting accessories and switch control. 10% of the regular lighting should be provided from UPS emergency lighting system. All the emergency lighting shall have MCB control at UPS Emergency lighting DBs.

5.12.9 6/16 AMPS POWER SOCKET:

15 amps power point in 20 mm steel conduit with 2.5 sq.mm FRLS PVC insulated copper conductor single core cable, modular switch, modular plate and suitable GI box. Earthing the point with 1.5 sq.mm. FRLS PVC insulated copper conductor single core cable etc. as required. Include material supply.

5.12.10 CABLE SCHEDULE:

The bidder has to submit a detailed schedule of cables and bus bars in the following format

Sl. No	From	To	Max Amp	Cable Ampacity	Cable Size in sq. mm	No of cores	Type of core	No of runs	Insulation	Length	Qty

The bidder must submit the following in various stages of the project:

Complete unpriced BOQ according to the bidder's solution- To be submitted along with technical bid. Single line diagram – To be submitted along with bid. The single line diagram has to be in detail showing

unique notations for each and every component such as breakers, indicators, CTs, bus bars, cable rating etc. Cable schedule as per the format. – To be submitted along with bid.

5.12.11 COMFORT AIR-CONDITIONING SYSTEM

The Server Room, NOC room and the UPS room to be equipped with air Condition system for SERVER ROOM, UPS ROOM & NOC ROOM the long life of equipment, Supply and installation of drain Line Piping for Room Air conditioner should be considered. AC power point wiring for 2 tons AC with suitable wire conduit and controls, etc. as per CPWD standards

Sl No:	Parameter	Description	Compliance Yes/No
1	Capacity	3 Ton (Server Room) 2 Ton (UPS Room & NOC Room)	
2	Technology	Split inverter type	
3	Features Required	Turbo mode, Anti-corrosive blue fins, Hydrophilic blue fins, Night Glow Function On Remote Button, Hidden display	
4	Warranty	5 Year	
5	Voltage	230 V	
6	Frequency	50Hz	
7	Phase	Single	
8	Noise Level	Outdoor in dB(A): 59	

Timer and Sequencing Control for Air Conditioner

Sl No:	Parameter	Description	Compliance Yes/No
1	Technology	Latest micro controller-based technology	
2	Display	LCD fully digital display model, User friendly setting	
3	Operating Type	Both AC works equal time	
4	Mounting Type	Wall Mounting	
5	Programmable Time	Option to set Time programmable 2Hrs, 4Hrs, 8Hrs, 10Hrs and 12 Hrs.	
6	Feature	Facility of Set AC-1 manual / AC-2 manual. Facility of Set AC-1 Automatic / AC-2 Automatic Auto Switch over feature for the AC unit at the time of Unit failure or over temperature	

5.13 SPECIFICATION FOR DATACENTER INFRASTRUCTURE MONITORING (DCIM)

S#	SPECIFICATIONS	COMPLIANCE (YES/NO)
A	**SUPPLY SCOPE**	

A1	Bidder to supply, install, configure, implement, and train the proposed DCIM solution including Hardware/ Virtual Instance, DCIM Application, DCIM Perpetual Licenses. The DCIM vendor should only supply embedded platforms where application, web, operating system & database are unified to run on a single server for simplicity in deployment & management of overall infrastructure to run the DCIM Application. The vendor has to provide DCIM solution inside the rack and the vendor has to provide DCIM solution including the server.	
C	**DCIM Connectivity Architecture**	
C1.1.1	Gateway/Convertor Devices: Required for connecting to third party BMS/ third party BMS controllers/field devices and building side device Integrator system as per site requirements.	
C1.1.2	Monitoring layer: Responsible for polling all infrastructure monitoring points. OEM is free to create the following independent Polling Systems: Polling System 1: SNMP base infrastructure devices inside the datacenter like Rack Mount PDU, EMS systems. Polling System 2: Building side devices operating on core Building side protocol like MODBUS TCP/IP.	
C1.1.3	Operations Layer: Responsible for analytics and insightful data analysis of DCIM data points such as, operations management, capacity planning.	
C2	**Redundancy**	
C2.2	Redundancy architecture for both Monitoring & planning layer should come at no additional cost of licenses, and should be a default property of the applications, as redundancy (DC/DR setup) relates to the reliability & availability aspects of the solution.	
C2.3	The DCIM vendor should include all necessary hardware & software required as per proposed architecture, to configure redundancy in the application, without quoting for any additional licenses of any kind, such as additional node-based, rack-based or user-based.	
D	**Monitoring Layer**	
D1	**Monitoring Points**	
D1.1	DCIM OEM should propose a Monitoring System that operates on Ethernet network at the least and talks to Building side device aggregators using MODBUS TCP/WEBAPI/REST and it should support SNMP v1 and v3 for devices that have SNMP NMC systems for monitoring them. Owing to criticality aspect of Building side field devices and polling cycles at times required to be at seconds, it is recommended to have a separate Monitoring server/VM to manage and monitor them. This system should be able to pull and push data of these field devices to Core Monitoring system which is managing SNMP based devices.	
D1.2	It is required that the DCIM OEM shares a list of KPI for the client datacenter which will be depicted on the dashboard and/or reports.	
D2	**Device Discovery & Configuration**	
D2.1	The Monitoring Application shall be capable of auto discovering devices when connected to the private LAN Network .	

D2.2	The Monitoring Application shall also be capable of discovering devices with static IP addresses on the private LAN Network B, defined by its IP address and subnet mask.	
D3	**Alarm Status Tracking**	
	DCIM Monitoring layer should have Alarm filters in the Monitoring dashboard. The solution should provide alert compression and advanced alerting algorithms including deviation from normal and time over threshold to help reduce false positive alarms.	
D4	**Email Server Integration**	
	DCIM Monitoring Layer server/VM system should allow integration of client email server via SMTP channel.	
D5	**Trend Analysis**	
	Should offer Graphical trending analysis for historical data pertaining to day, week, month, year and user defined durations.	
D6	**Customizable Thresholds**	
	Proposed DCIM solution should allow for custom logics for creating Rules of Escalation and Email alerts for various devices based on alarm severity and priority. The monitoring layer should allow users to create thresholds based on - minimum/maximum values, range of values, rate of change of parameters, parameter above/below certain value for certain time. There should not be any limit on the number of thresholds the users are able to create for the devices / device parameters.	
D7	**Auto Timed Reporting**	
	DCIM Monitoring Layer should allow for Auto Timed/Scheduled Report Emailing to selected audience on required key performance indicators. These Reports should be mailed to relevant users as CSV format.	
E	**Security**	
E6	OpenLDAP and Active Directory: The Monitoring Application shall have Open Lightweight Directory Access Protocol and Active Directory support.	
E7	The log in to the user interface of Monitoring Application shall use Secure Socket Layer (SSL) or Secure Socket Handling (SSH) authenticate.	
E8	The web launch to devices shall occur through a HTTP or HTTPS connection. To increase security, the HTTP or HTTPS connection and the HTTP or HTTPS port shall be user configurable for each device, through the Monitoring Application user Interface.	
F	**User Management and Access control**	
F1	The Monitoring Application shall allow the user to create user accounts ranging from Administrator Access to View Only Access with unique login username and password.	
F2	An administrator shall have full read/write access to all the Monitoring Application's functionality.	
G	**OPERATIONS LAYER**	
G1	Operations Layer of DCIM should facilitate the complete Lifecycle approach for Datacenter management involving:	
G1.1	a. Analysis b. Design c. Implement d. Operate e. Evaluate	

G1.2	DCIM Operations Layer will have the capability to configure a bird's eye view of the room layout to ensure the layout in the data center model accurately represents the real-world physical environment of the room. This includes any physical attributes of the room such as size, shape, doors, windows, aisles, containments, false floor creations, false ceiling creation and ability to duct the Racks, Containments and CRAC units to False ceiling as per site requirement.	
G1.6	Web client view of the DCIM should offer at least the following functionalities: a) Perform simple rack inventory edits. b) Perform quick search and view simultaneous rack front/ rear view for the datacenter c) User access control and license management d User experience customization like logo e) Customize the language of operation f) Network management tasks g) 3D navigation h) Ability to assign tags to the equipment's & racks i) Ability to color code equipment j) Ability to assign images on IT equipment, depicting front and rear side of the IT equipment as per real image k) Dashboards - PUE and Capacity - Power, Cooling, Space, Network consumption over time l) Workflow management ticket information and ability to resolve tickets m) Ability to browse equipment by any attributes and to be able to create & save customized search queries	
G1.7	DCIM Operations Layer will be able to provide a product catalog that contains up-to-date floor and rack mounted data center equipment having drag & drop functionality to populate devices & design DC floor layout within the system as per physical layout/actuals. This product catalog should be periodically updateable with new devices map repository.	
G1.8	DCIM Operations Layer should offer inventory and mapping of Direct Current Powered devices like Fuses, Rectifiers along with AC powered. This means that user should be able to create a Power path with both types of sources at the same time if required.	
G2	User-defined attributes for Devices - As a part of Asset Management, the custom attributes within DCIM should allow users to store information on items in the system relevant to their setup in addition to the standard device properties provided by the OEMs.	
G2.2	The user should be able to use custom properties to store information about assets in minimum following formats and validations:	
G2.2.1	Links: Hyperlinks to external information, such as links to files, service-desk, web pages, and general URLs.	
G2.2.2	Lists: The List and List Values fields enable users to create customized drop-down list with options to select from when applying custom properties to equipment.	
G2.2.3	Email ID: Exclusive validated filed for verified email addresses	
G2.2.4	IP Address: Exclusive validated filed for verified IP addresses	
G2.2.5	Text, Integers: Data validation for text or integer formats	
G2.2.6	Mandatory: To be able to define certain customized fields associated with the assets as mandatory, such as 'Asset ID', and notify in case not filled up by the users	

G2.2.7	Unique: To be able to define certain customized fields associated with the assets as unique, such as 'IP Address', and detect with warning in case duplicate values are entered within the properties defined as unique	
G2.3	There should not be any limit on adding as many of custom properties as required by the user to manage their data center assets. The users should be able to create different templates from these custom properties to be able to associate with certain groups of equipment, such as 'Network Properties', 'Storage Properties', to be applied to the respective assets while planning.	
G3	**Capacity Planning**	
G3.1	Space Capacity Planning	
G3.1.1	DCIM should offer complete information on the layout view for the following parameters: a. Empty Racks b. Filled Racks: stating the Racks are being used by a Process/Client c. Reserved: Racks reserved for a specific Process/Client d. Internal Use: Racks reserved for some Internal requirements	
G3.1.2	With reference to Space Management in Datacenter, DCIM should offer following information on the layout view for the following parameters: a. Room Area b. Reserved Area: For specific Process/Client c. Closed: Area filled already and is not available d. Internal Use: Area used by Internal Racks e. Space Efficiency: Ratio between Room Area and sum of Reserved Area, Closed Area and Reserved Area.	
G3.1.3	The proposed solution must offer intuitive, color-coded drawings in both plan and rack elevation views which allows users to: - View Rack U-space availability - View Rack Power availability - View Rack weight/Floor Loading - View Raised Floor & Rack space utilization	
G3.2	**Power Capacity Planning**	
G3.2.1	The DCIM application should use the estimated loads of IT equipment derived from equipment OEM nameplate values to calculate how much capacity is used, and guide user on how much capacity is available.	
G3.2.2	DCIM application should be able to provide overview of power capacity in minimum but not limited to following aspects:	
A	To be able to derive estimated load of IT Equipment from their nameplate values.	
B	Measured & Estimated loads trade-off at rack PDU levels and also across the phases & banks within rack PDUs.	
C	Measured & Estimated loads trade-off at floor mounted PDU levels.	
D	Measured & Estimated load trade-off at UPS and distribution level.	
G	Measured & Estimated load trade-off at breaker and panel leave feeding the rack PDUs.	
F	Failover load impact on the redundant path, and it's capacity consideration for power reservations from upstream path up to rack PDU level.	
G3.3	**Cooling Capacity Planning**	
G3.3.1	The proposed DCIM application to be able to assist users planning capacity based on cooling within data centers with following aspects.	
A	To be able to integrate into CRACs dedicated to whitespace to perform cooling analysis.	

B	To be able to integrate into EMS or temperature and humidity sensors at rack level.	
C	To be able to arrive at heat load calculation for the IT equipment used for capacity planning.	
D	DCIM should be able to show a color-coded heatmap over the racks in bird's eye view to understand the hotspot within data center, or appropriate are to host next equipment.	
E	The DCIM should be able to estimate airflow calculations at perforated tile level to help user understand the available CFM levels within the area to host IT requirement	
F	The tool should allow users to read estimated Cooling Capture Indices at rack level to understand cooling efficiency.	
G	The tool should provide recommendations to improve cooling efficiency within data center based on the data measured from sensors and cooling machines.	
H	The DCIM should be able to measure essential data from cooling machines to help users under various cooling parameters such as Supply Air Temperature, Cooling machine capacity at certain return air temperature, existing cooling capacity on the machine, airflow of the cooling machine.	
G4	**Power Path Map**	
	The System should offer mapping capability from UPS to individual Rack within the datacenter. This mapping should be made available as a Power Layout Map within the system.	
G6	**Equipment Placement Automation**	
G6.1	The proposed DCIM application should automatically recommend the best location for a server in the room and rack layout, using available data for space, cooling, network, and power capacity to optimize capacity utilization and avoid stranded capacity.	
G6.2	The DCIM application should have built-in decision engine to consider following aspects for equipment placement automation:	
G6.2.1	Equipment fits into the rack – dimension analysis	
G6.2.2	Rack supports weight of the equipment	
G6.2.3	Rack supports equipment's Watt per U-height	
G6.2.4	UPS supports equipment's load – power analysis	
G6.2.5	Rack supports equipment's redundancy	
G6.2.6	Rack airflow supports equipment	
G6.2.7	Floor supports weight of the equipment	
G6.2.8	Rack PDU support's equipment's voltage	
G7	**Recommendation Engine**	
	As a part of the Management Layer, it is expected that DCIM tool helps Datacenter Manager with insights into day-to-day activities for the datacenter including and not limited to: 1. U space occupancy details for an equipment 2. Floor loading of the Racks 3. Airflow across the perforated tiles 4. Power path configurations 5. Power Draw configurations across Supply Breakers 6. Redundancy of Power supply to Racks 7. Rack's estimated and Peak Load values 8. Associated Device Data Communication Lost 9. UPS Load imbalances 10. Upstream limitations for all power consumers, not limited to rack	

	mounted assets The Recommendation Engine is expected to support site manager with firm optimization efforts for the data center & facilities.	
K	**Dashboard**	
K1.1	Proposed platform should offer Dashboard & Reporting System on data center key performance indicators, displaying customizable information for a high-level overview of data center operations.	
K1.2	It should have a dedicated Access control system for creation of Users/User Groups exclusive to Reporting server.	
K1.5	As a part of the Dashboard & Reporting System it should allow auto scheduling of these Reports to user defined email ids via client's SMTP server attaching reports to the email.	
K1.7	Dashboard & Reporting System should offer capability to depict any report generated through the same as a Dashboard widget which can show the data trend on polling cycle defined by user.	
K1.8	Proposed platform should offer custom Dashboard with provision to 1. Customize Logo 2. Customize / Ribbons (Horizontal & Vertical) 3. Customize Color themes – Dark/Light 4. Customize Dashboard Layout	
K1.9	Users have the ability to customize their own dashboard layout to a certain degree, depending on their desired monitoring priorities.	
K1.10	The dashboard should include internal user management, allowing for the possibility of integrating with AD/LDAP.	
K1.11	The dashboard should incorporate a log maintenance section.	
K1.12	The dashboard should include a login/logout feature.	
K1.13	Mathematical tools should be provided within the dashboard to manipulate data, enabling users to apply formulas, perform addition, multiplication, averaging, and other operations on specific parameters.	
K1.14	Data Center Management software to be integrated via API	
K1.15	Data Center Management software data to be pulled- 1. Rack PDU Data, UPS Data, Cooling unit data 2. Temperature 3. Humidity 4. Power 5. Current 6. All other sensor data from Data Center Management software 7. Alarms with all detailed descriptions – Alarm Type, Reporting Sensor, Severity, custom description, Alarm Acknowledgement message 8. Alarm Trends – Daily, weekly, monthly, annually, user sortable dates, trends should be sortable by device type, trends, bar charts 9. All sensor data to be trended by table, charts, graphs, dials etc. 10. All sensor data to be filterable by various sensor parameters such as,	

	sensor/device type, DC halls, rooms, rows, Date Ranges, Folder Structure inherited from Data Center Management software	
K1.16	DCIM integration using RESTful APIs 1. Capacity Data- Cooling, Space, Network, Power 2. Asset Data – all data center assets in DCIM, to be sortable by asset type 3. Equipment Browser data from DCIM to be displayed on dashboard 4. Inheriting DCIM device properties of different types, Standard & Custom 5. Enlisting custom properties in tabular view, sortable by different criteria – Table, Charts, Graphs etc. E.g. If there is a custom property called 'Asset Warranty' of type 'Date', the dashboard should provide the capability to sort the data in a tabular format based on the 'Warranty Expiry Status'. Additionally, the dashboard should display the type of assets that are expiring and their respective warranty expiration dates. 6. Assets with expired warranties should be displayed as "Red" in the dashboard. Assets that are approaching their warranty expiration in a few months should be shown as "Amber". Assets that are still under warranty should be displayed as "Green". In a nutshell, dashboard should have ability to manipulate the data that is coming from any matrix that is taken from these tools integrated into dashboard	
K1.17	Users should have the flexibility to plot a wide range of charts, graphs, and tabular analyses using the data obtained from sensors in the Data Center Management software or information from the DCIM system within the dashboard. Additionally, the dashboard should offer the ability to customize color selections, providing users with a personalized visualization experience.	
K1.18	Users should have the ability to plot these graphs as widgets on the dashboard, which can be freely dragged and placed anywhere on the screen. The dashboard should come with a default layout, but users should also have the option to customize the layout according to their preferences.	
K1.19	Users should be provided with the option to create multiple tabs on the dashboard, allowing them to organize and categorize their custom widgets. However, certain default admin tabs such as administration, user management, settings, etc., should be pre-defined and not editable by the user.	
L1	**Capacity History**	
	The DCIM software shall generate a capacity history report that shows the capacity change history for one or more data centers over a user-specified period. Allow users to choose data from various capacity categories including power, cooling, space, network, and energy efficiency, etc.	
L2	**Contiguous Free U-Space**	
	Provides information about contiguous free u-space per rack.	
L3	Customer Inventory Report	
	Reports all customer inventory (server, rack DPU, racks, cages, PDUs, etc.) for one or multiple customer accounts. Customer names and accounts can be selected at the time of report generation.	
L4	**Executive Power**	
	Provides a summary of total capacity, free capacity, measured peak, failover load, and power sold/all coated data in a report format. The report is sorted by data center sites and rooms.	

L5	**Executive Space**	
	Provides space usage stats in terms of total, sold, open, reserved, etc. square footage and rack counts information. It is sorted by data center sites and then data center rooms.	
L6	**Network Summary**	
	The DCIM software shall generate a network report that lists the usage of network ports on each server and network devices. It shall also present all network routes in the data center.	
L7	**Panel Schedule**	
	The DCIM software shall generate a report showing the configuration of the breaker panels including breakers and power consumers.	
L8	**Rack U-Space**	
	The DCIM software shall generate a rack space report that displays the number of available positions in specified racks for equipment that takes up one or more U positions.	
L9	**Device Communication Status**	
	The DCIM software shall generate a Report showing Communication status for all monitored Infrastructure devices.	
L10	**Device Sensor Report**	
	The DCIM software shall generate a Report showing status of the User selected Device sensor across daily, monthly, weekly period.	
N	**Servicedesk Integration**	
N1	The DCIM platform should have capabilities to integrate with customer's ServiceDesk platform, such as ServiceNow, and to be implemented via at least 1 method:	
N1.1	Email integration to service desk platform - in case of any events, alerts, errors occurring with the connected equipment with the monitoring layer, a ticket is to be autogenerated within ServiceNow.	
N1.2	API based integration - DCIM tool to have capability to integrate with customer's ServiceDesk tools via APIs, and to be able to customize based on the ServiceDesk implementation.	

5.14 TECHNICAL SPECIFICATION FOR ACCESS CONTROL SYSTEM

SL. NO.	REQUIREMENT	COMPLIANCE (YES/NO)
1	The Integrated Access Control System's (ACS) primary function shall be to regulate access through specific doors, gates or barriers to secured areas of the facility.	
2	An Intelligent System Controller (ISC) shall link the ACS software to all other field hardware. It shall provide full distributed processing for access control and alarm monitoring operations. Controller should be 8 doors, 40,000 cards capacity,10000 events. Interface on RS232,RS485 and TCP/IP.	
3	A Dual Reader Interface Module (DRIM) shall be available for each controlled door and provide the ability to connect up to two card readers or entry devices	

SL. NO.	REQUIREMENT	COMPLIANCE (YES/NO)
4	Smart card readers at every Critical door for Entry and Exist. Biometric finger print Card reader for Critical door of Server room Door only for Entry Point and exist Smart card readers.	
5	Enterprise Version Server Software for Access control &Time and Attendance with capability to service Minimum 1 concurrent clients, Inclusive of One Server & One Client License.	
6	Shall be capable to communicate with centralized command software (BMS).	
7	Software shall Programmable functions, controller downloads and uploads, multi-level local and global anti-pass-back, integration with fire systems, grouping of escape routes, door security clearance, import and export utilities, etc.	
8	• Multiple layers of maps with interactive icons;	
9	• Alarm recognition and treatment;	
10	• Scheduled times for door clearance;	
11	• Send emails and SMS to selected users; • Multiple card formats and facility codes;	
12	• Flexible commands for card users such as temporary access level (shift changes) and provisional cards, card lock, penalties, card and event tracking, Double custody of access cards, etc.; • control, multi-level locker and rack control with required Hardware controller	
13	SITC of Multi Format Card Readers	
14	SITC of Biometric + Smart Card Readers, shall have 2" IPS (In Plane Switching) touch screen LCD with Corning Glass scratchproof protective glass with Smart card reader module. Authentication shall be done in 1 second and the 1GB memory on board for user storage of minimum 5000 users with a card & 25000 events transaction log capability.	
15	SITC for Panic Bar with alarm for emergency exit doors.	

5.15 TECHNICAL SPECIFICATION FOR HIGH SENSITIVITY SMOKE DETECTION SYSTEM (VESDA OR EQUIVALENT)

Sl. No	Requirement	COMPLIANCE (YES/NO)
1	The panels shall be mounted inside the risk protected and there shall be a network of air sampling pipe work.	

2	The High Sensitivity Smoke detection consist of highly sensitive Laser-based Smoke Detectors with aspirators connected to networks of sampling pipes. The alarms are generated once the laser sensor receives smoke at a pre-determined obscuration level to activate and alert, Fire 1, Fire 2 and alert signal.	
3	The signal is extended to the Fire Alarm monitor Modules / BMS through Volt free contacts for further investigation.	
4	When required, it shall be possible to connect an interface card for open Protocol output to BMS system for online Monitoring with Software level integration.	
5	When required, an optional remote Display unit shall be provided to monitor each detector, and a Programmer shall be supplied to configure the system.	
6	The system shall include all equipment's, appliances and labour necessary to install the system, complete with high sensitive LASER-based 7Smoke Detectors with aspirators connected to network of sampling pipes.	
7	The Bidder shall also make provision in the Aspirating Smoke Detectors to trip AHU and to shut fire dampers in the event of fire through the relay contacts.	
8	Codes and standards The entire installation shall be installed to comply one or more of the following codes and standards : NFPA Standards, British Standards, BS 5839 part :1	
9	Approvals All the equipment's shall be tested, approved, and/or listed by : o LPCB (Loss Prevention Certification Board), UK FM Approved for hazardous locations Class 1,Div 2 UL (Underwriters Laboratories Inc.), US ULC (Underwriters Laboratories Canada), Canada o Vds (Verband der Sachversicherer e.V), Germany	
10	The System shall consist of a high sensitive LASER-based smoke detector, aspirator, and filter.	
11	It shall have a display featuring LEDs and Reset/Isolate button. The system shall be configured by a programmer that is either integral to the system, portable or PC based.	
12	The system shall allow programming of: Multiple Smoke Threshold Alarm Levels	

	Time Delays. Faults including airflow, detector, power, filter block and network as well as an indication of the urgency of the fault. Configurable relay outputs for remote indication of alarm and fault Conditions. It shall consist of an air sampling pipe network to transport air to the detection system, supported by calculations from a computer-based design modelling tool. Optional equipment may include intelligent remote displays and/or a high level interface with the building fire alarm system, or a dedicated System Management graphics package.	
13	Performance Requirements Shall provide very early smoke detection and provide multiple output levels corresponding to Alert, Action, and Fire 1 & 2. These levels shall be programmable and shall be able to set sensitivities ranging from 0.025 – 20% obscuration / meter Shall report any fault on the unit by using configurable fault output relays or via the graphics Software. Shall monitor for filter contamination. Shall incorporate a flow sensor in each pipe and provide staged airflow faults.	
14	Materials and Equipment's Both Light Scattering and Particle Counting shall be utilized in the device as follows: The Laser detection Chamber shall be of the mass Light Scattering type and capable of detecting a wide range of smoke particle types of varying size. A particle counting method shall be employed for the purposes of Preventing large particles from affecting the true smoke reading. Monitoring contamination of the filter (dust & dirt etc.) to notify automatically when maintenance is required. The Laser Detection Chamber shall incorporate a separate secondary clean air feed from the filter; providing clean air barriers across critical detector optics to eliminate internal detector contamination.	

	The detector shall not use adaptive algorithms to adjust the sensitivity from the set during commissioning. A learning tool shall be provided to ensure the best selection of appropriate alarm thresholds during the commissioning process.	
15	Detector Assembly The Detector, Filter, Aspirator and Relay Outputs shall be housed in a mounting box and shall be arranged in such a way that air is drawn continuously from the fire risk area by the Aspirator and a sample passed through the Dual Stage Filter and then to the detector. The detector shall be LASER-based and shall have an obscuration sensitivity range of 0.025 – 20% obs/m. The detector shall have four programmable smoke alarm thresholds across its sensitivity range with adjustable time delays for each threshold between 0 - 60 seconds. The detector shall also incorporate the facility to transmit a fault through a relay. The detector shall have a single pipe inlet that must contain an ultrasonic flow sensor. High flow fault (urgent and non-urgent) and low flow fault (urgent and non-urgent) can be reported. The filter must be a two-stage disposable filter cartridge. The first stage shall be capable of filtering particles in excess of 20 microns from the air sample. The second stage shall be ultra-fine, removing more than 99% of contaminant particles of 0.3 microns or larger, to provide a clean air barrier around the detector's optics to prevent contamination and increase service life. The aspirator shall be a purpose-designed rotary vane air pump. It shall be capable of allowing/ supporting for a single pipe run / multiple sampling pipe runs with a transport time of less than 90 seconds. Detectors shall be capable of supporting a single pipe run of 25m with a maximum transport time of 120 seconds or as appropriate standards dictate. The Assembly must contain relays for fire 1, Action and fault conditions. The relays shall be software programmable (latching or non-latching). The relays must be rated at 2 A at 30V DC. Remote relays shall be offered as an option and either configured to replicate those on the detector or programmed differently.	

	The Assembly shall have built-in event and smoke logging. It shall store smoke levels, alarm conditions, operator actions and faults. The date and time of each event shall be recorded. Each detector (Zone) shall be capable of storing up to 18000 events.	
16	Displays on the Detector Assembly The detector will be provided with LED indicators. Each Detector shall provide the following features at a minimum. Alert, Alarm, Fire 1 and Fire 2 corresponding to the alarm thresholds of the detector. o Smoke Dial display represents the level of smoke present. Fault Indicator. Disabled indicator. Buttons supporting the following features shall be accessible to authorized personnel. Reset – Unlatches all latched alarm and faults. Disable – Disables the fire relay outputs from actuating and indicates a fault.	
17	Sampling Pipe The sampling pipe shall be smooth bore with an outside diameter of 25mm and internal diameter of 21mm should be used. The pipe material should be suitable for the environment in which it is installed, or should be the material as required by the specifying body. All joints in the sampling pipe must be air tight and made by using solvent cement, except at entry to the detector The pipe shall be identified as Aspirating Smoke Detector Pipe along its entire length at regular intervals not exceeding the manufacturer's recommendation or that of local codes and standards. All pipes should be supported at not less than 1.5m centres, or that of the local codes or standards.	

	The far end of each trunk or branch pipe shall be fitted an end cap and drilled with a hole appropriately sized to achieve the performance as specified and as calculated by the system design.	
18	Sampling Holes Sampling Holes of 2mm, or otherwise appropriately sized holes, shall not be separated by more than the maximum distance allowable for conventional detectors as specified in the local codes & standards. Intervals may vary according to calculations. Each sampling point shall be identified in accordance with Codes or Standards. Consideration shall be given to the manufacturer's recommendations and standards in relation to the number of Sampling Points and the distance of the Sampling Points from the ceiling and roof structure and forced ventilation systems.	

5.16 TECHNICAL SPECIFICATION FOR WATER LEAK DETECTION SYSTEM

Sl.No	Requirement	COMPLIANCE (YES/NO)
1	Control Panel with 4 x 20 LCD	
2	4 / 8 zones	
3	Sensing technology shall be only AC	
4	Isolate facility for each zone	
5	Common fire interface relay	
6	Fault relay	
7	Hooter output	
8	Zone alarm & fault LED Indication	
9	MODBUS RTU for BMS integration	

5.17 TECHNICAL SPECIFICATION FOR RODENT REPELLENT SYSTEM

Sl.No	Requirement	COMPLIANCE (YES/NO)
1	2x16 LCD panel	
2	System Healthy relay	
3	Mini Exhaust Fan	

4	RS485 MODBUS RTU for BMS Integration	
5	Test Transducer Menu	
6	Programmable Sweep Time & delay	

5.18 TECHNICAL SPECIFICATION FOR INTEGRATED BUILDING MANAGEMENT SYSTEM

Sl.No	Specification	Compliance (Yes/No)
1	**Description of requirements**	
	Agency shall design & provide a full Building automation system on the basis of truly distributed intelligence and shall comprise of the following general functional sub systems.	
	- Air Conditioning Management & Control	
	- Precision AC Units	
	- Temperature monitoring and controls at all specified positions/locations	
	- Energy Management	
	- LT Panel Energy Monitoring	
	- UPS Monitoring	
	- Fire Alarm System Integration	
	- VESDA (Very Early Smoke Detection Alarm) System Integration	
	- Gas System Integration	
	· DG Set on MODBUS Protocol with RS 485 Communication Port	
	· Energy Meter on MODBUS Protocol with RS 485 Communication Port, Energy meter and BMS software should be integrated on IEC 61850 protocol	
2	Intelligent BMS system & connectivity for monitoring & control equipment with SMS / Mail Alerts provisioning on set limit violation.	
3	Minimum two set of temperature, humidity and vibration sensors should be considered in all critical areas such as server farm, teleco room , UPS area etc.	
4	**BMS system will interface with DCIM software on ope protocol.**	
	Specifications as follow	
a	As per Bill of Material	
b	Integrator for Precision AC Units and Chiller on MODBUS RTU protocol	
c	Integration for UPS on MODBUS RTU protocol	
d	Integration for Electrical switchgears (Electrical panels) on MODBUS RTU protocol	
e	Integrator for Energy Meter Units on MODBUS RTU protocol	
f	Integrator for DG set on MODBUS RTU protocol	

g	Building management software shall include alarm handling, scheduling, trending, reporting engine, database system, system activity log, historical data management, real time vector graphics, system backup and restore, HTML based documentation and help .Graphical user interface based software for IBMS monitoring with BMS points, 1 installed client licenses & 1 Web license.	
h	Building Management Seamless integrating all utilities	
i	Fire alarm system Integration Software and Integration	
j	Third party- Fire Alarm system,WLD, Rodent repellent, UPS, Load manager/Energy meter, Precision AC, DG set, integration on Modbus TCP/IP/ RS485 RTU,/BACnet TCP/IP License.	
k	DDC (Direct Digital controller)	
	DC Controller with I/O module etc., The controllers shall be 32 bit microprocessor based standalone and net workable type with real time clock and historical database of min 3600 events, with port for Portable Operator Terminal & peer to Peer communication. The selection of DDC controller shall be as per I / O summary.	
	Networkable DDC Controller	
	Inside Temperature + RH sensors	
	Low/high level switch for DG tank and U/g Tank integration	

BILL OF MATERIALS

6.1. NON – IT COMPONENTS

CIVIL AND INTERIOR WORKS				
Sl No	**Description**	**UOM**	**QTY**	**Amount**
1	**Flooring**			
a)	**Vitrified Tiles flooring** 12 mm thick (mirror polished) of approved quality and shade for corridor flooring, with 4"skirting & wall in required position with readymade tile adhesive mortar of approved quality, including backing coat of cement mortar 1:3 (1: cement, 3: fine aggregate), joint filling with white slurry, cleaning, curing complete all as directed by the Engineer. The levelling of base floor to be included, laid in pattern in desired shade with adhesive 600 x 600 with pigmented additives to match shade of the stone, cleaning, cost to be inclusive of chemical treatment of approved AQUA SEALANT on surface etc. complete as per directed.	SQR MTR	RO	

b)	**Raised Flooring:** Providing and fixing Access Floor panel of 600x600x32 mm medium grade Filled Steel anti-static high-pressure Lamination of 800H grade (FS800H). Access Floor panel shall be steel welded construction with an enclosed bottom pan with uniform pattern of 64 hemispherical cones. The top and bottom plates of Steel Gauges: top 0.6 mm and bottom 0.7 mm fused spot welded together (minimum 64 welds in each dome and 20 welds along each flange). The panel should be corrosion resistant epoxy coated for lifetime rust protection and cavity formed by the top and bottom plate is filled with Pyro grip non-combustible Portland cementitious core mixed with lightweight foaming compound. The access floor shall be factory finished with Anti-static High-Pressure laminate with non-Warp technology up to 1mm thickness for superior adhesion and Surface flatness within 0. 75mm.The panel is to withstand a Concentrated Load of 363 kgs applied on area 25mm x 25mm without collapse in the centre of the panel which is placed on four steel blocks. The panel will withstand and Uniformly Distributed Load (UDL) minimum 1250 kg/sq.mm. And, an impact load of 50kg all complete as per the approved manufacturer's specification and as per the direction of Engineer-in- charge. All specification must be printed on the side of the panel to ensure the quality of the product. 300/400 mm Finished Floor Height (FFH)	SQR MTR	78	
2	**FALSE CEILING**			
	Modular False Ceiling			
a)	Providing and fixing mineral fibre false ceiling tiles at all heights of size 595X595mm of approved texture, design and pattern. The tiles should have Humidity Resistance (RH) of 99%, Light Reflectance ?85%, Thermal Conductivity k = 0.052 - 0.057 w/m K, Fire Performance as per (BS 476 pt. – 6 &7) in true horizontal level suspended on interlocking T-Grid of hot dipped all round galvanized iron section of 0.33 mm thick (galvanized @120 gsm) comprising of main T runners of 15x32 mm of length 3000 mm, cross T of size 15x32mm of length 1200 mm and secondary intermediate cross T of size 15x32 mm of length 600 mm to form grid module of size 600x600 mm suspended from ceiling using galvanized mild steel item (galvanised@80gsm) 50 mm long 8mm outer diameter M-6 dash fasteners, 6 mm diameter fully threaded hanger rod up to 1000 mm length and L-shape level adjuster of size 85x25x2 mm, spaced at 1200 mm centre to centre along main 'T'. The system should rest on periphery walls /partitions with the help of GI perimeter wall angle of size24x24X3000 mm made of 0.40 mm thick sheet, to be fixed to the wall with help of plastic at 450 mm centre to centre & 40 mm long dry wall S.S. screws. The exposed bottom portion of all T-sections used in false ceiling support system shall be pre-painted with polyester baked paint, for all heights. The work shall be carried out as per specifications, drawings and as per directions of the engineer-in-charge	SQR MTR	22	
3	**Steel Fire rated door**			
	FIRE RATED DOORS: Providing and fixing single or double steel door with 45mm thick flush design shutter comprising of two outer sheets of 18-gauge steel sheets rigidly connected and reinforced inside with continuous vertical 20-gauge stiffeners, spot welded in position at not more than 150mm on centres including void filled with mineral wool (density as per specification), all fittings, mortice lock with handle on both sides, tower bolt, stopper, shop and final painting etc. all complete. Each door to have 300mm x 200mm vision panel fitted with wired fire rated glass			
	a) Door Size- 1200 x 2400	QTY	1	
	b) Door Size - 1000 x 2400	QTY	1	

	c) Door Size - 900 x 2400	QTY	1	
4	**FIRE RATED GLASS DOORS**			
	FIRE RATED GLASS DOORS: Providing and fixing 12 mm thick 2HR Fire Rated Glass Door shutter of approved brand and manufacture, including providing and fixing top & bottom pivot & spring type fixing arrangement and making necessary holes etc. for fixing required door fittings, all complete as per direction of Engineer-in charge			
	a) Door Size- 1200 x 2400	QTY	1	
	b) Door Size- 1000 x 2400	QTY	1	
5	**PAINTING and POP**			
a	Providing and applying white cement-based putty of average thickness 1 mm, of approved brand and manufacturer, over the plastered wall surface to prepare the surface even and smooth complete.	SQR MTR	245	
b	Wall painting with acrylic emulsion paint, having VOC (Volatile Organic Compound) content less than 50 grams/ litre, of approved brand and manufacture, including applying additional coats wherever required, to achieve even shade and colour. Two coats	SQR MTR	245	
c	Fire Rated paint	SQR MTR	245	
6	**Miscellaneous items**			
6.1	Providing Tile puller with suction cup, wooden door ramp of required size and height, wooden steps of required dimensions as per direction of Project-in-charge	NOS	1	
6.2	Nitrile Rubber insulation of 19mm on server room roof and floor	SQR MTR	138	
6.3	Ramp made up of GI angle and MDF board with antiskid laminate	LOT	1	
6.4	Vinyl flooring of 2mm thickness on all other area	SQR MTR	20	
6.5	**DG Set Area Foundation**			
a)	Foundation for DG Area: - Earth work in excavation by mechanical means (Hydraulic excavator) /manual means in foundation, including dressing of sides and ramming of bottoms, also Soil Compacting, including getting out the excavated soil and disposal of surplus excavated soil as directed, within a lead of 50 m. Including the Centring and shuttering including strutting, propping etc. and removal of formwork for DG Foundation.	SQM	15	
b)	Steel reinforcement for R.C.C. work (for DG Set area) ready to use "cut and end" rebars of approved make from factory/workshop to construction site including placing in position and binding all complete up to plinth level (Thermo-Mechanically Treated bars of grade Fe-500D or more.)	SQM	15	
6.6	**Chiller Area Foundation**			
a)	Foundation for Chiller Area: - Earth work in excavation by mechanical means (Hydraulic excavator) /manual means in foundation, including dressing of sides and ramming of bottoms, also Soil Compacting, including getting out the excavated soil and disposal of surplus excavated soil as directed, within a lead of 50 m. Including the Centring and shuttering including strutting, propping etc. and removal of formwork for Chiller Foundation.	SQM	40	

b)	Steel reinforcement for R.C.C. work (for Chiller Area) ready to use "cut and bend" rebars of approved make from factory/workshop to construction site including placing in position and binding all complete up to plinth level (Thermo-Mechanically Treated bars of grade Fe-500D or more.)	SQM	40	
ELECTRICAL WORKS				
Sl No.	**Description**	**UOM**	**QTY**	**Amount**
1	**MAIN LT PANEL**			
	Design, fabrication, assembly, wiring, supplying, installation, testing and commissioning of front operated cubicle type compartmentalised front access free standing, dust and vermin proof (IP 20 ingress protection) switchboards suitable for use at 400 volts +/-10%, 3 phase 4 wire 50 Hertz system suitable for fault level of required value symmetrical at 400 volts +/-10%, fabricated from 2 mm thick CRCA MS sheets with hinges, gasket (metal-based neoprene) and lockable doors having structural reinforcement with suitable angle/channel/T/flat sections including 3 mm thick gland plates on top and bottom and including lifting hooks and GI earth strip of required size with 2 nos earthing terminals and powder coated paint finish of approved shade over metal surface cleaned and treated with seven tank process complete with interconnections etc. as per specifications, as required and as below. MCCB and MCB operation at 415V AC, and the insulation need to be at 690V AC, all Panels shall be duly labelled with schematic diagram and Danger marks. Complete as required.			
	All Panel/Switchboards shall have provision for entry of cables from the top and bottom as required			
	All live accessible parts shall be shrouded and all equipment shall be finger touch proof. The Busbar insulation shall be with heat shrinkable sleeves. SMC/DMC shrouds and Busbar supports shall be used.All meters shall be digital type with LED display.			
A	Main LT Panel 1 as per SLD	NOS	1	
B	Main LT Panel 2 as per SLD	NOS	1	
C	Critical UPS output panel as per SLD	NOS	2	
D	20KVA UPS output panel as per SLD	NOS	1	
E	Chiller Panel as per SLD	NOS	2	
F	DG output Panel as per SLD	NOS	1	
G	160Amp ATS	NOS	2	
H	20Amp ATS	NOS	4	
2	**CABLE AND TERMINATIONS**			
2a	Supply, storing, handling, laying, testing and commissioning of 1100 Volt grade XLPE insulated and sheathed aluminium conductor armoured cables, ISI marked, including providing required gap between adjacent cables (minimum one cable dia.) including providing identification tags in shaft/ cable trays etc. complete as per specifications, SLD as required (Low v/d losses) for multi core of various size. Bidder must add all cables cost line item wise as per site survey.	Lot	1	

2b	Supply, storing, handling, laying, testing and commissioning of 1100 Volt grade XLPE insulated and sheathed Aluminium conductor flexible cables, ISI marked, including providing required gap between adjacent cables (minimum one cable dia.) including providing identification tags in shaft/ cable trays etc. complete as per specifications, SLD as required (Low v/d losses) for multi core of various size. Bidder must add all cables cost line item wise as per site survey.	LOT	1	
	Cable Termination:			
3	Termination for Aluminium Cables with all glands and lugs as required complete in all respect	LOT	1	
4	Termination for Copper Cables with all glands and lugs as required complete in all respect	LOT	1	
5	***PERFORATED TYPE CABLE TRAYS (GI TRAYS)/ WIREWAYS***			
5a	Termination for Copper Cables with all glands and lugs as required complete in all respect	1		
6	***PERFORATED TYPE CABLE TRAYS (GI TRAYS)/ WIREWAYS***			
6a	Supplying and installing following size of perforated painted with powder coating M.S. cable trays with perforation not more than 17.5%, in convenient sections, joined with connectors, suspended from the ceiling with M.S. suspenders including bolts & nuts, painting suspenders etc., as required including bends etc., **INDOOR**			
	300mm WIDTH X 50mm DEPTH X 2.0mm THICKNESS	RO		
	450mm WIDTH X 50mm DEPTH X 2.0mm THICKNESS	LOT	1	
	600mm WIDTH X 50mm DEPTH X 2.0mm THICKNESS	RO		
6b	Ladder type Cable Tray including Bends, nut bolts, connectors, suspenders etc., complete in all respect 450MM WIDTH	LOT	1	
7	**Distribution Board**			
	S/F of following ways MCB DB including incoming and outgoing MCB connection as required:			
A	UPS output DB for supply to racks	NOS	2	
B	Lighting and raw power DB	NOS	1	
8	**INDOOR LIGHT FIXTURES**			
A	Supply and installation of 2'x2' recess mounted LED light panel in the entire area in such a manner that the lux level in the server farm area must be 500 lux measure at 1 meter from floor level at all places. For other area it must be 300 lux measured in a similar manner	NOS	20	
B	Supply and installation of 9" dia round recess mounted LED light panel in the entire area	NOS	15	
9	**EARTHING**			
	Supply & installation of the following with clamps, inspection chambers, excavation maintenance free compound as per technical specifications & IS: 3043 standards. Complete. The cost shall include excavation, backfilling, compaction, construction of chambers, tools and tackles for excavation & all required civil works. Testing earth resistivity and electrode resistance **(Maintenance free earthing)**			

A	Providing and fixing 25 mm X 5 mm G.I. strip on surface or in recess for connections etc. as required.	MTR	100	
B	Providing and fixing 25 mm X 5 mm copper strip on surface or in recess for connections etc. as required.	MTR	100	
C	Earthing with copper earth plate 600 mm X 600 mm X 3 mm thick including accessories, and providing masonry enclosure with cover plate having locking arrangement and watering pipe of 2.7 metre long etc	NOS	6	
D	Earthing with GI place including accessories, and providing masonry enclosure with Earthing with G.I. earth plate 600 mm X 600 mm X 6 mm thick cover plate having locking arrangement and watering pipe of 2.7 metre long etc	NOS	6	
10	**POINT WIRING: FOR LIGHT FIXTRURES**			
A	**POINT WIRING WITH FRLS PVC CONDUITS:**			
	(False / Non-False Ceiling Area)			
	Wiring for light point/ fan point/ exhaust fan point/ call bell point with 1.5 sq.mm FRLS PVC insulated copper conductor single core cable in surface / recessed steel conduit, with piano type switch, phenolic laminated sheet, suitable size MS box and earthing the point with 1.5 sq.mm FRLS PVC insulated copper conductor single core cable etc. as required.	LOT	1	
	(SWITCHES & SOCKETS SHALL BE OF MODULAR TYPE)			
B	Single point controlled by 6 Amps switch (conduit / wires / switches)	NOS	8	
C	2 - 3 point controlled by 6 Amps switch (combined rate for 2 / 3 points)	NOS	8	
11	**INDUSTRIAL TYPE SOCKETS AND PLUG TOPS**			
	Supply, store, erection, testing and commissioning of factory-made metal clad totally enclosed with cast aluminium housing with industrial socket/interlocked combined rotary switch and socket with scrapping earth connection and plug top. In case of interlocked socket, the interlocking should ensure that the plug cannot be inserted or withdrawn while the switch is in 'ON' position. (All switches & sockets shall be housed in painted MS boxes). The erection rate shall include supply of angle iron frame work and fixing accessories such as grip bolts/grouting/ welding to steel structures etc., All the MCBs shall be of 'D' Curve specifications.			
A	32A, 230V, 2P+E, IP 44 Male top with socket, Plastic moulded industrial socket with suitable straight plug, Surface mounted / Raceway mounted type. The pricing shall include to make the required supports on the floor/Raceway along with required accessories.	NOS	40	
12	**MODULAR TYPE**			
	Supply, erection, testing and commissioning of power points by providing following switches/sockets mounted on suitable size metal coated boxes fixed flush/surface on to the wall with all fixing and wiring accessories.			
A	6/16 Amps, 3-pin (250 Volts) single phase universal socket with 16 Amps single pole switch with indicating lamp. The pin configuration shall be round type. Plug tops are excluded from the scope of supply. (Normal Power)	NOS	8	
B	6/16 Amps, 3-pin (250 Volts) single phase universal socket with 16 Amps single pole switch with indicating lamp. The pin configuration shall be round type. Plug tops are excluded from the scope of supply. (UPS Power)	NOS	8	
13	**SUB-MAINS/CIRCUIT MAINS/POWER WIRING**			

	Supply and running of 1100 V grade FRLS PVC insulated copper conductor wires in 2mm thick FRLS PVC/ MS conduits as per technical specification. The rate shall include all wiring & conduit accessories as applicable.			
A	Supply and running of 2Rx2.5 Sq.mm + 1Rx1.5 Sq.mm FRLS PVC insulated multistrand copper conductor wire in 25mm dia FRLS PVC conduits for lighting circuits from DB to switch boards & emergency lighting circuits from MCB DBs to SBs and light fixtures	MTR	120	
B	Supply and running of 2Rx2.5 Sq.mm + 1Rx1.5 Sq.mm FRLS PVC insulated multistrand copper conductor wire in 25mm dia FRLS PVC conduits for Raw power circuits (1x6/16A) from DB to Sockets and looping between the sockets	MTR	220	
C	Supply and running of 2Rx4 Sq.mm + 1Rx2.5 Sq.mm FRLS PVC insulated multistrand copper conductor wire in 25mm dia FRLS PVC conduits for UPS power circuits (3x6/16A) and CAC units from DB to Sockets and looping between the sockets	MTR	100	
D	Supply, running and termination of 1C x 10 Sq.mm Flexible FRLS PVC insulated multistrand copper conductor wire in existing conduits/raceways.	MTR	50	
E	Lightning arrestor system as per IS /IEC 62305-3 and IS-3043	No	1	
DIESEL GENERATOR				
Sl. No.	**Description**	**UOM**	**QTY**	**Amount**
1	Supply, installation, testing and commissioning of 500 KVA Diesel generator with 140 – 160 Litre Fuel tank (Internal) and all accessories including exhaust stack	NOS	1	
2	Fuel tank (External) of 990 Litre with all piping and valves	NOS	1	
3	DG foundations	NOS	1	
4	Control Cabling	NOS	1	
UPS FOR CRITICAL LOAD and EC FANS plus SSS LOAD				
Sl. No.	**Description**	**UOM**	**QTY**	**Amount**
1	UPS: Supply, fixing and commissioning of 200KW double conversion Modular construction UPS as per specifications.	NOS	2	
1a	Batteries: Supply, interconnection and commissioning of 12V monoblock VRLA SMF batteries suitable for approx. 20 minutes backup on full load.	Set	2	
2	**UPS:** supply fixing of 20KW UPS FOR EC FANS and safety security package critical lighting load	NOS	1	
2a	Batteries: Supply, interconnection and commissioning of 12V mono block VRLA SMF batteries suitable for approx. 20 minutes backup on full load with Closed Battery Cabinet with doors.	Set	1	
INTEGRATED BUILDING MANAGEMENT SYSTEM				
Sl. No.	**Description**	**UOM**	**QTY**	**Amount**
A	**Fire Alarm System**			

1	Fire alarm Control panel Comprised of the following system components: ƒ Operating units, Periphery boards, Power supplies, System enclosures, 170Watt power supply. The panel must support or comply to : -one (1) to four (4) 'Class B'; one (1) to two (2) 'Class A' -Includes one (1) 'Class A', or two (2) 'Class B' notification appliance circuits (NACs) - Resettable and non-resettable 24VDC, [nominal] auxiliary power - Digital alarm communication transmitter (DACT) - Detailed information about the nature and location of the events can also be displayed, via a backlit, 2"─x─4- 3/4"(5.1 cm.─x─12.1 cm.) LCD screen and the four-way navigation push button at the top of the FACP - UL 864 9th Edition Listed, ULC Listed; FM, CSFM & NYC Fire Department Approved	Nos	1	
2	**Intelligent Addressable Multi-Sensor Smoke Detector:** Multi-criteria addressable fire detector shall incorporate photoelectric and thermal sensors, Polarity insensitive utilizing SureWireTM technology, Tri-colour detector status LED with 360° viewing, Field-selectable application profiles, Superior EMI immunity, Remote sensitivity- measurement capability, Automatic environment compensation, UL Listed and ULC Listed; FM (#3230, 3210), CSFM (#7272-0067:0258) Approved,	Nos	14	
3	Intelligent Addressable Heat detector: Provides seven (7) field-selectable settings in the 135° í 174°F (57.2° í 78.9°C) temperature range, Tri-colour detector-status light-emitting diode (LED) with 360° viewing, Polarity insensitive utilizing SureWireTM technology, Superior EMI / RFI Immunity, UL521 Listed and ULC Listed; FM (#3230, 3210), CSFM (#72720067:0258) Approved.	Nos.	RO	
4	Intelligent Addressable Type Manual Call Point: Intelligent Manual Fire Alarm Box is constructed of durable, moulded and polycarbonate material that is matte finished in red with raised white lettering Single-action, Pull-down lever shall remain down, until manually reset connectivity shall be Polarity insensitive via SureWireTM technology device programming vide Electronic programming with self-test facility UL Listed, FM, CSFM & NYC Fire Dept. approved	Nos.	4	
5	Short circuit Isolator Base: Requires no programming Does not occupy a device address Local light-emitting diode (LED) indicator UL 864 9th Edition Listed and ULC Listed; FM, CSFM & NYC Fire Department Approved	Nos.	2	
6	Conventional Type Hooter with Strobe: The Series Z Notification Appliances feature an easy Snap-On base that is designed to simplify the installation and testing of horns, strobes, and horn/strobes. Wall Mount models feature field selectable candela settings of 15/30/75/110cd and 135/185cd. Ceiling Mount models feature field selectable candela settings of 15/30/75/95cd and 115/177cd. UL Listed, ULC, CSFM, and FM approved. ADA/NFPA Compliant. Red.	Nos.	2	
7	Response Indicator for below false floor detector	Nos.	8	

8	**Intelligent Addressable Relay control module for Hooter+ Control module for 3rd Party equipment (Precision AC unit)** Interfacing and supervising normally open (N.O) or normally closed (N.C) contacts, Integral single-pole, double-throw (SPDT) relay (up to 4 amps), multi-colour light-emitting diode (LED) indicates system status: § GREEN / AMBER / RED, UL Listed & ULC Listed; FM, CSFM and NYC Fire Dept. Approved	Nos	6	
9	**Intelligent Addressable Monitor module for VESDA:** Interfacing and supervising normally open (N.O) or normally closed (N.C) contacts, Integral single-pole, double-throw (SPDT) relay (up to 4 amps), multi-colour light-emitting diode (LED) indicates system status: § GREEN / AMBER / RED, UL Listed & ULC Listed; FM, CSFM and NYC Fire Dept. Approved	Nos	2	
10	2 core x 1.5 sq.mm Armoured FRLS cable	MTR	400	
11	Supply & Installation of CO2 Type Extinguishers - 2 Kg	Nos.	3	
12	Supply & Installation of GLOW SIGNAGE	Nos	3	
B	**Public Address System**			
1	6-Watt Ceiling speaker: The loudspeaker can be used for reproducing music as well as speech. The speaker assembly consists of a single-piece, dual cone loudspeaker and frame, with a 100 matching transformer mounted on the back. A circular metal grille is an integrated part of the front. 1.5W,3W,6-Watt various tapping	Nos	4	
2	9-Watt Ceiling speaker: Rated voltage 100V, 1.5W,3W,6- Watt various tapping	Nos	4	
3	Voice Alarm Controller having features like announcement to 6 zones expandable up to 60 zones, built in 240W Power Amplifier, input port of emergency microphone on the front panel, 16 priority levels including emergency, music to selected zones can be played, up to 255 messages can be stored in the internal 16MB flash ROM, individual BGM volume control for each zone, Digital pre-recorded messages can be merged complete as required (in built amplifier) for Container GF & FF (Data Hall)	Nos	1	
4	Mixer Amplifier with Microphone	Nos	1	
5	240Watt Amplifier	Nos	1	
6	2 core 1 sq.mm Armoured	MTR	100	
7	RACK 12U	Nos	1	
C	**CCTV SYSTEM**			
1	IP based Dome camera with fixed lens,4Megapixel Full HD Network IR Dome Camera as per specification	Nos	8	
2	NVR: 16 CH Network Video Recorder	Nos	1	
3	43" LED Monitor	Nos	1	
4	24 Port 10/100/1000 Mbps L2 Managed switch	Nos	1	
5	CAT6 Armoured Cable	MTR	300	
6	Video data storage for 3 months at min 12FPS	Nos	1	
D	**ACCESS CONTROL SYSTEM**			
1	Intelligent 8 Reader Door Master Access Controller, via a 10/100Mb Ethernet connection, Support for 500,000 cardholders - Operating voltage 8 to 40 VDC, 8 to 30 VAC -	NOS	1	

	Operating temperature 0 to +50 °C (32°F to122°F) Card capacity 40,000			
2	Dual Reader Interface (DRI): Interface module for up to two card readers, supports all popular reader technologies, Auxiliary 12VDC power source (min. voltage input 18VDC), Lock / door strike output (relay driven), Request-to-exit input, Door contact input, Communications status LED, Activity status LED, Power status LED	NOS	1	
3	Eight Reader Interface (ERI): Interface module for up to eight card readers, supports all popular reader technologies, Auxiliary 12VDC power source (min. voltage input 18VDC), Lock / door strike output (relay driven), Request-to-exit input, Door contact input, Communications status LED, Activity status LED, Power status LED	NOS	1	
4	Power Supply Unit with battery back-up for Controller and Door Interface modules	NOS	3	
5	Biometric Reader for Server room	Nos	1	
6	iCLASS SE R10 Reader (Entry/Exit): iCLASS Seos: 2.4" (6 cm), indoor/Outdoor IP55; IP65 if installed with optional gasket, Wiegand, Clock-and-Data, Open Supervised Device Protocol (OSPD) via RS485, UL94 Polycarbonate	Nos	5	
7	Electromagnetic lock - 600 lbs with ZL / UL bracket, as required - Single Leaf ► Voltage Input:12 VDC /24 VDC ► Current Draw: 12V / 500mA; 24V/250mA (±5%) ► Holding Force: Up to 600 lbs (272 kg)	Nos	2	
8	Electromagnetic lock - 600 lbs with ZL / UL bracket, as required - Double Leaf	Nos	2	
9	Resettable Emergency Release Switch	Nos	1	
10	Magnetic Contact	Nos	4	
11	Access Control Software & time attendance: l Anti-pass back 3 wrong PIN mode Time scheduling Manual system override capabilities Enrolment reader support Multi-user, multi-tasking environment	Lot	1	
12	PC for Access control software	Nos	1	
13	6 core x 1 Sq.mm - Armoured	MTR	150	
14	4 core x 1 Sq.mm - Armoured	MTR	150	
15	2 core x 1 Sq.mm - Armoured	MTR	150	
16	Cat6 cable – Armoured	MTR	50	
17	Exist Switch	Nos	2	
E	**Gas Based Fire suppression system -Server room (EXTERNAL TO SMART RACK) and UPS room**			
1	SITC of CCOE Approved Seamless NOVEC1230 Cylinder and Valve Assembly, 100 Litres. Capacity, OEM Factory filled with Novec 1230 Suppression Liquid, pressurized to 42 bar.	Nos	2	
2	Master Completer Kit complete with Solenoid, Pneumatic actuators, Pressure Gauge, Low pressure supervisory switch, Discharge hoses, Flexible actuation hoses and connectors. For Multiple cylinder system - VDS/UL approved	Lot	1	
3	Slave Completer Kit complete with Pneumatic actuators, Pressure Gauge, Low pressure supervisory switch, Discharge hoses,	Lot	1	

	Flexible actuation hoses, manual actuator and connectors. - VDS/UL approved			
4	SITC of Gas Agent -NOVEC1230 Fire Protection Fluid, OEM Factory Filled per Kgs.	Kgs	178	
5	SITC of type UL / Vds Listed Nozzles, 360 Deg / 180 Deg Throw, selection as per approved hydraulic flow calculations.	Nos	5	
6	Manifold to cater Multiple Cylinder Bank	Nos	1	
7	MS Powder coated 2"x2" hollow box frame Cylinder(s) support assembly with manifold support system duly fastened to the slab floor & wall / Ceiling complete with cylinder brackets / U clamps etc. Need to distribute the floor load	Nos	4	
8	SITC of NOVEC Piping & Manifold as required, Sch 40; ASTM A106 Gr B, as per flow calculations for the specific hazard volume and stand to hold, position & Support the Manifold and Piping properly. Complete with Pressure testing for piping with nitrogen as per NFPA 2001 & Flushing with Nitrogen prior to handover.	Lot	2	
	Detection Systems			
1	Supply installation Testing & commissioning of Single zone Gas Release Panel facility to connect Manual Abort/Release switches. The Panel shall provide Potential free contacts for First knock, second knock, Trouble / Fault Status. The Panel shall be Complete with Red Colour Housing, Power supply unit, Battery charger & batteries	Nos	1	
2	Manual Release Switch	NOS	1	
3	Abort Switch	NOS	1	
F	**Rodent VHFO system**			
1	VHFO master controller can drive up to 20 transducers.	Nos	2	
2	TRANSDUCERS	Nos	10	
3	Wire Bundle	MTR	200	
4	PVC Conduit 20mm	MTR	200	
G	**Water leak detection**			
1	Conventional 6 Zone Water Leak detection panel with Modbus RS485	Nos	2	
2	Water leak detection cable sensor	MTR	54	
3	Electronic Hooter	Nos	2	
4	2 core x 1.5 sq.mm Armoured cable	MTR	30	
H	**Aspiration Detector / VESDA (Early warning Detection)**			
1	Single channel Aspirating Detector, coverage 500 SQM (2*25 M Pipe length maximum) for server room only	Nos	2	
2	Single channel Aspirating Detector, coverage 800 SQM (2*60 M Pipe length Maximum)	Nos	4	
3	Power Supply with Battery backup Unit	Set	2	
4	Air termination Nozzles with Capillary set	Nos	5	
5	Aspiration 25mm OD CPVC Sampling Pipes with accessories	MTR	50	
6	Electronic Hooter with mounting arrangement	MTR	2	
7	2C x 1.5 sq.mm PVC insulated sheathed FRLS copper conductor armoured cable.	MTR	100	
I	**Building Management System**			
1	Server class workstation - The vendor may provide the specification of servers as per their solution for smooth functioning of the BMS solution with all upgrades for 5 years operation.	Nos	1	

2	19" colour, Flat Screen Type Professional HD monitor for above client workstation	Nos	1	
3	A 4 size LaserJet Printer suitable for the application, with driver software.	Nos	1	
4	**Proposed Integrated Software for BMS & FAS (Graphic Software)**			
	Building management software shall include alarm handling, scheduling, trending, reporting engine, database system, system activity log, historical data management, real time vector graphics, system backup and restore, HTML based documentation and help. Graphical user interface-based software for iBMS monitoring with 200 BMS points (including Soft +Hard)	Set	1	
J	**Third Party Integration**			
	Third Party Integration: The Protocol Integrator/ Convertor shall be Capable to Integrate Open protocol systems on BACnet /Modbus/LONWORKS/M-Bus/J-Bus Protocol Made available on IP, or on serial RS 485 / 232 interface. (Separate Integrator for each system)			
1	Integrator for PAC for Server room (20Soft Points considered for each PAC Unit) on MODBUS RTU PROTOCOL.	Set	1	
2	Integrator for UPS (20Soft Points considered for each UPS) on MODBUS RTU PROTOCOL.	Set	1	
3	Integrator for DG (20Soft Points considered for each DG) on MODBUS RTU PROTOCOL.	Set	1	
4	Integrator for PDU (20Soft Points considered for each PDU) on MODBUS RTU PROTOCOL.	Set	1	
5	Integrator for WLD (20Soft Points considered for each WLD) on MODBUS RTU PROTOCOL.	Set	1	
6	FAS soft integration (100 Soft Points)	Set	1	
K	**Direct Digital Controllers: BACnet/IP**			
	Networkable 32 Bit DDC Controllers with I/O points as per enclosed IO List, inbuilt real time clock, Battery backup. The controllers shall be capable of standalone operation with real time clock and historical database. The DDC's shall be capable of peer-to-peer communication without help of system interface controller or PC. The DDCs shall be with suitable IP 54 enclosure complete with all wiring and accessories. BTL Approved			
1	DDC for Server room Temperature & RH, WLD, Gas release status.	Set	1	
L	**Field Sensors**			
1	Temperature and RH sensor for server room	Nos.	4	
2	Diesel level switch	Nos.	2	
3	H2 sensor for Battery room	Nos.	1	
M	**Cable and Conduit**			
1	2 Core x 1 sq. mm FRLS Armoured Cable for control cabling	MTR	100	
2	4 Core x 1 sq. mm FRLS Armorer Cable for control cabling	MTR	500	
3	Communication cable: FRLS Armoured CAT6 Cable	MTR	500	
N	**Datacenter Infrastructure Monitoring System (DCIM)**			

1	DCIM software with 100 user lic, operating in HA mode with integration of all devices through IP network for monitoring critical parameters. Bidder to consider supplying and installing all hardware (if required) for communication between field devices and DCIM through IP protocol. (No extra payment will be made for any additional hardware or cabling or termination for commissioning and smooth functioning of DCIM tool) The vendor has to provide DCIM solution inside the rack and the vendor has to provide DCIM solution including the server.	Lot	1	
O	**COMFORT AIR CONDITIONING SYSTEM**			
1	Wall split inverter type BEE 5 star rated 3-ton AC units with stabiliser	Nos	4	
2	Wall split inverter type BEE 5 star rated 2-ton AC units with stabiliser	Nos	2	
3	Refrigerant copper pipe with insulation for supply and return	MTR	80	
4	Drain pipe	MTR	60	
5	Outdoor stand as per site Conditions	Nos	6	
6	Power cable (between IDU to ODU)	MTR	100	
INTEGRATED SMART RACK SYSYEM				
SI. No.	**Description**	**UOM**	**QTY**	**Amount**
1	8 nos 42U height racks with each rack capacity of 7.5KW and 2 nos 42 U height Rack with 20KW	LOT	1	
2	In rack units of minimum 30KW or above each 4 nos (N+1/ N+N) units alongside rack as per OEM design			
3	Intelligent redundant PDU for each rack			
4	Fire, smoke detection and suppression system inside rack units			
5	Biometric access for racks			
6	Environmental Monitoring system			
7	Internal lighting			
8	All internal and external cabling and piping complete in all respect			
9	Outdoor installation as per site conditions including fabrication work if required.			
CHILLER, ACCESSORIES AND LOW SIDE WORK				
SI. No.	**Description**	**UOM**	**QTY**	**Amount**
1	**Air Cooled Inverter Scroll Chillers**			
	Supply, Installation, Testing & Commissioning & Handing over of the following:			
1.1	Chiller Package			
	Supply of 60TR (212 kW) Actual capacity, Air Cooled inverter scroll chiller with scroll compressor/s, The Unit should be equipped with Integrated, Microprocessor Controller. The unit shall be supplied with all auxiliary equipment's, controls centre, inter connecting piping, water flow safety trip, electrical power panel, control wiring including insulation, painting etc. The above chiller is to be selected for Ambient temp condition of 400C. Chilled Water in / out temperature shall be 13 ºC / 20 ºC. Chiller operating voltage is 380 V to 440 V. The Chiller shall have inbuilt BMS card.	Nos	2	
	The unit mounted starter panel shall be complete with IP- 55 protection consisting of power disconnecting switches with fuses, star-delta starters, for compressor motors, under/over voltage trip, single phase preventers, communication card which can accept 4-20 mA or 2-10 Vdc analog signal.			

	All components shall be mounted on welded steel base frame, structural steel profiles/panels made out of galvanized sheet steel, protected with primary coat & finished with acrylic paint.			
	The chiller shall be mounted on the Vibration isolators.			
	Necessary Computer Selection with model / catalogue shall be attached			
	Commissioning of the Chiller after installation			
	Actual Capacity: 60 TR (1W+1S) @ 13^{0}C leaving Water condition & 20^{0}C entering water condition.			
	Location - Trivandrum, Ambient - 40^{0}C			
	Chiller should have the provision to provide Modbus RS485 for BMS			
	Chiller should have the provision to provide NO/NC pfc for Run status and TRIP status.			
	Chiller Should have the provision to accept NO/NC pfc for Remote ON/OFF through BMS.			
1.2	Lifting, Shifting & Erection of Chillers at Ground Floor	Lot	1	
1.3	Chiller Plant manager	Lot	1	
2	Chilled Water Centrifugal Pump Sets			
	Primary Chilled Water Pumpsets			
	End Suction Pumps Factory assembled Primary Water circulation pump set with mechanical seal including SS 316 gland plate, TEFC induction motor, Base Plate, Bronze Impeller as per Specifications. Cost of Pump set should be inclusive of Starter Panel for each pump set separately as detailed in technical specification. Pumps shall have inbuilt VFD	Nos	2	
	The Pump set shall be placed on the inertia block with vibration isolators. GI sheet cover/Shed shall be provided for the pumps			
	Chilled Water Flow Rate: As per site requirement.			
	Casing / Impeller: CI / Bronze			
	Qty: 2 Nos (1 W + 1 S)			
3	Chilled Water Piping with Insulation			
	Providing and fixing in position SS/PPR heavy class pipes cut to required lengths and installed with all welded joints. Providing and fixing in position the necessary fittings like elbows, tees, reducers, Flanges, Nut & bolt, support arrangements, PUF saddles & etc.			
	Insulation of Chilled Water Piping SS / PPR			
	Class 'O' closed cell Nitrile rubber insulation of suitable thickness (Min 25 mm Thk) to prevent condensation and finished with 26G AL. Cladding.			
	The quote shall include water for flushing pipes until they are clean, water required for pressure testing and RO water for final filling of pipes.			
	100 mm dia / 5.4 mm Wall Thickness / 32 mm Thk Insulation	Mtr	320	
	50 mm dia / 4.5 mm Wall Thickness / 25 mm Thk Insulation	Mtr	30	
	25 mm dia / 4.0 mm Wall Thickness / 25 mm Thk Insulation	Mtr	30	
4	Valves and other Accessories			
4.1	Butterfly Valves - PN16 or greater rating			

	Providing and fixing in position the following wafer type Butterfly Valves complete with companion slip on flanges, nuts, bolts, gaskets etc. as required with pressure rating. The valve shall be insulated with Class 'O' closed cell Nitrile rubber insulation of suitable thickness (Min 25 mm Thk) to prevent condensation and finished with 26G AL. Cladding.			
	100mm dia	Nos	78	
	80 mm dia	Nos	RO	
	50 mm dia	Nos	16	
4.2	Ball Valves - PN16 or greater rating			
	Providing and fixing in position the following wafer type Ball Valves. The valve shall be insulated with Class 'O' closed cell Nitrile rubber insulation of suitable thickness (Min 25 mm Thick) to prevent condensation and finished with 26G AL. Cladding.			
	32 mm dia	Nos	RO	
	25 mm dia	Nos	16	
4.3	`Y' Strainer - PN16 or greater rating			
	Providing and fixing in position the following 'Y' strainer. The valve shall be insulated with Class 'O' closed cell Nitrile rubber insulation of suitable thickness (Min 25 mm Thk) to prevent condensation and finished with 26G AL. Cladding.			
	100 mm dia	Nos	4	
	80 mm dia	Nos	RO	
4.4	Semi-Automatic Balancing Valves - PN16 or greater rating			
	Balancing Valve shall be of factory calibrated direct, balancing valves of complete with companion slipon flanges as per the specifications. The valve shall be insulated with Class 'O' closed cell Nitrile rubber insulation of suitable thickness (Min 25 mm Thk) to prevent condensation and finished with 26G AL. Cladding.			
	100 mm dia	Nos	2	
4.5	Automatic Air Vents - PN16 or greater rating			
	Automatic Air Vents shall be installed at chiller supply and return header and at all high sections of piping.	Nos	8	
4.6	Thermometers - Dial Type - 4" Dia (ALL SS TYPE) - PN16 or greater rating / IP 65 rated			
	Thermometers of approved make & shall be of mercury in steel type with range suitable for the temperature services. It should be installed in the thermowells as explained in the tender specifications. The valve shall be provided with isolation valve. Range 0 - 500 C	Nos	4	
4.7	Bourdan Tube Pressure Gauges (ALL SS TYPE) - PN16 or greater rating / IP 65 rated.			
	Pressure gauges shall be of Bourdon (100 mm) type with range selected so that normal operation is near to middle of the scale. Syphons and cocks to be provided along with SS snubber. The valve shall be provided with isolation valve. Range 0 - 10 Kg/sqcm	Nos	8	
4.8	Flexible connections at Chiller and pump Outlet & inlet - PN16			
	Providing and fixing in position the following flexible connection with limiting bolts.			
	100 mm dia	Nos	8	
4.9	Non-Return Valves - PN16 or greater rating			

	Providing and fixing in position the following Non- Return Valve. The valve shall be insulated with Class 'O' closed cell Nitrile rubber insulation of suitable thickness (Min 25 mm Thk) to prevent condensation and finished with 26G AL. Cladding.			
	100 mm dia	Nos	2	
4.10	Flow Switch - PN16 or greater rating	Nos	2	
4.11	provision of threaded short pipe of 1/2" mm dia for installing DP sensor. One number on suction line of pump and one number on discharge line of pump with isolation valve.	Set	2	
4.12	provision of threaded short pipe of 25mm dia for installing thermowell. One number on return header and one number on supply header.	Set	2	
5	Motorized Butterfly Valves for Chillers - PN16 or greater rating / Actuator IP67 and Input power 230V.			
	Motorized Butter Fly Valves for Chillers, Supply & Installation of Motorized valve with electronic actuator and linkage including control wiring. (Suitable for BMS application, actuator shall receive and send ON and OFF status to BMS) .The motorized valve with actuator drive with positioned having suitable pushing force for the application and limit and torques switches and protections based on them shall also be supplied .Motorized butterfly valves of sizes as listed below with cast iron (IS210 Gr.FG260) body, black nitrile/EPDM rubber seat stainless steel (SS410) PTFC coated shafts, complete with matching flanges, locking devices, extended flow control level, insulation. The valve shall be suitable for outdoor installation.			
	100 mm dia (160 US GPM) 10 L/s - For Air Cooled Chillers	Nos	2	
6	Closed Type Expansion Tank - - PN16 or greater rating			
	Closed Water Expansion Tank of SS construction with interchangeable EPDM Butyl rubber membrane bladder complete with 32 mm thick class 'O' closed cell nitrile rubber insulation, and finished with 26G aluminium cladding. Tank to be minimum 100 Ltrs capacity and tank shall be mounted on MS stands (The capacity may change as per site conditions)			
	The tank shall have 25 mm system connection and 25mm drain and over flow and 25mm quick fill and makeup connection, provision for pressure gauge and switches etc. Tank shall be insulated as per specifications and provided with pressure switches. The expansion tank shall be supplied and installed with all accessories required for proper functioning of the system			
	Tank shall be complete with Pumps required in the configuration of N + 1 (1 working + 1 Stand By). The cost shall include necessary valve package & control logic panel out door type / Canopy	Lot	1	
7	Inline Air Separator with super Air vent- PN16 or greater rating			
	Air cum sediment Separator – 100 mm dia, Flow Rate 160 USGPM (10 L/s), Air separator shall be supplied with super air vent.	Nos	1	
8	Chemical Dosing Pot			
	Supply, Installation, testing & Commissioning of SS Fabricated Doser pot with Chemical for pre-cleaning designed to withstand system pressure of at least 5 Kg/cm². The dosing equipment shall be installed across the high pressure and low-pressure headers at the suitable location. The required chemicals for first dose to be considered. The dosing pot shall be of atleast 5 Liter capacity with required valves, piping and accessories	Nos	1	
9	Steel Supports for piping and other accessories.	kg	500	
10	Pedestals for Chiller, Pupmp sets, Chemical dosing pot & Expansion tank	lot	1	
11	De-humidifier			

	Supply, Installation, testing and Commissioning of de humidifier (Nominal Capacity 96 ltrs/day) with supporting arrangement, drain pipe (32mm dia CPVC Pipe with 9mm Nitrile rubber Class 'O' insulation, 20Rmt), Cabling, sensors and other required accessories	Nos	2	
12	Make-up water Tank			
	Supply and Installation of SS Make-up water tank of 1000 litres capacity. The Quote shall include supporting arrangement, Float valve, CPVC pipe at inlet with isolation valve (25mm dia, 10Rmt). Outlet pipe shall be PPR/SS Pipe with isolation valve (25mm dia, 10Rmt). the outlet pipe shall connect to suction pipe of pressurization pump.	Nos	1	
CLOSED LOOP COOLING SOLUTION				
IN-RACK CRAC UNITS, LOW SIDE AND ACCESSORIES				
Sl. No.	**Description**	**UOM**	**QTY**	**Amount**
1	Supply, installation, testing and commissioning of Microprocessor based chilled water In-rack cooling unit. The cooling capacity shall be at least 30kW or net sensible or above at below mentioned parameters. The unit shall have inbuilt control valve, BMS card and sequential controller. Chilled Water In 13 ^{0} C Chilled water out 20^0 C	NOS	4	
2	Supply and Installation SS Flexible hose of 32mm Dia with threaded connections at both sides. Each set shall include both supply and return pipe.	SET	8	
3	Pressure testing of RC: It includes the pressure testing and flushing and cleaning of RC unit at 125 psig, piping associated to the unit, and completing the work as per the guidelines and instruction of Project Engineer.	NOS	8	
4	Supply and Installation of Drip Tray: It includes the supply and installation of GI Drip tray (of 20G) with proper MS/High-tech supports as per guidelines and insulating the tray with 13mm thick Closed Cell nitrile rubber Insulation. Work to be completed as per Project Manager guidelines.	SQM	15	
5	Supply & installation of GI Class "B" pipe for humidifier makeup water line with nitrile rubber class "O" of 9 mm thick complete with fittings, accessories, bends, elbows, tees, flanges, tapping's, wall sleeves, hangers supports, anchors & etc.	RMT	RO	
	25 mm dia	RMT	RO	
	32 mm dia	RMT	RO	
	50 mm dia	RMT	RO	
6	Supply & installation of CPVC pipe for condensate drain with nitrile rubber class "O" of 13 mm thick complete with fittings, accessories, bends, elbows, tees, flanges, tapping's, wall sleeves, hangers supports, anchors & etc.			
6.1	25 mm dia	MTR	25	
6.2	32 mm dia	MTR	RO	
6.3	50 mm dia	MTR	30	
7	Cat 6 straight cable for Grouping of ACRC units	MTR	40	
8	RJ 45 connectors for CAT 6	NOS	16	
9	Misc (Cable Tie, Insulation Tape, Sticker)	lot	1	

10	Coupler with Union Joint to connect chilled water pipe and flexible hose (32mm Dia) SS304 material. Each set consist of two number one for supply and one for return.	Set	8	
11	Supply installation of 19mm thick rubber insulation inside the In-rack RC cooling unit	MTR	16	
12	Supply installation of 19mm thick tube rubber insulation for 32mm flexible hose including all material for insulation	MTR	32	
13	Dummy Plug for tapping of future unit -32mm dia	NOS	8	
CERTIFICATION CHARGES				
	Uptime Tier III Design and Certification Charges.	Nos	1	
AMC CHARGES				
1	Post warranty AMC charges for all items for 3 years	NOS	1	

NOTE: ANY OTHER ITEM ACCESSORIES IN ANY PACKAGE NOT COVERED ABOVE WILL BE PART OF THE SCOPE OF WORK. BIDER HAS TO TAKE CARE WHEN PREAPREING THE DRAWINGS, BOQ, SLD, LAYOUTS OF COMPLETE SOLUTION. NO ADDITIONAL PAYMENT WILL BE DONE FOR ANY ITEM REQUIRED TO COMPLETE THE PROJECT THAT IS NOT PART OF THE BOQ MENTIONED ABOVE. HENCE IT IS SUGGESTED THAT THE BIDDER MUST QUOTE FOR SUCH ADDITIONAL ITEMS.

7. ANNEXURES

7.1. ANNEXURE – A

DECLARATION TO BE SUBMITTED BY THE BIDDERS

REF TENDER NO.

NAME OF BIDDER:

To,

Registrar,
Kerala University of Digital Sciences Innovation and Technology,
Technocity Campus, Mangalapuram,
Thonnakkal P.O,
Thiruvananthapuram – 695 317,
Kerala

Sirs,

With reference to the notice Inviting Tender, I/We have gone through the tender documents issued to us. I / we hereby declare that we provide onsite support for four hours response time, otherwise we are liable to pay a penalty of 0.5% per day and a maximum of 10% of the total cost of the solution.

Bidders Authorized Signatory

7.2. ANNEXURE – B

ACCEPTANCE OF TERMS & CONDITIONS IN THE RFP

(WITHOUT THIS DECLARATION TENDERS WILL NOT BE ACCEPTED)

REF TENDER NO.
NAME OF BIDDER:

To,

Registrar,
Kerala University of Digital Sciences Innovation and Technology,
Technocity Campus, Mangalapuram,
Thonnakkal P.O,
Thiruvananthapuram – 695 317,
Kerala

Sirs,

I have carefully gone through the Terms & Conditions contained in the RFP document [No----------] for Selecting System Integrator for Supply, Installation, Configuration, Integration, Acceptance Testing, Commissioning, Training and Support of Data Center solution at Kerala University of Digital Sciences. I declare that all the provisions of this RFP/Tender Document are acceptable to my company. I further certify that I am an authorized signatory of my company and am, therefore, competent to make this declaration.

Bidders Authorized Signatory

7.3. ANNEXURE -C

Power of Attorney for signing of proposal

(In non-judicial stamp paper)

Know all men by these presents, we, (*name of the firm &the address of the registered office)* do hereby irrevocably constitute, nominate, appoint and authorize Mr. /Ms……..... *(Name)*, son/daughter/wife of …… .....……. and presently residing at…….....……., who is (presently employed with us/and holding the position of …….....…….), as our true and lawful attorney (hereinafter referred to as the "Attorney") to do in our name and on our behalf, all such acts, deeds and things as are necessary or required in connection with or incidental to submission of our proposal in response to the *proposal for* Selecting System Integrator for Supply, Installation, Configuration, Integration, Acceptance Testing, Commissioning, Training and Support of Data Center solution University of Digital Sciences**,** but for use is limited to signing and submission of all applications, proposal and other documents and writings, participate in bidders'& other conferences and providing information/ responses to the Authority, representing us in all matters before the Authority, signing and execution of all contracts including the Service Agreement and undertakings consequent to acceptance of our Bid, and generally dealing with the Authority in all matters in connection with or relating to or arising out of our proposal for the said project and/or upon award thereof to us and/or till the entering into of the Service Agreement with the Authority.

AND we hereby agree to ratify and confirm and do hereby ratify and confirm all acts, deeds, and things lawfully done or caused to be done by our said Attorney pursuant to and in exercise of the powers conferred by this Power of Attorney and that all acts, deeds and things done by our said Attorney in exercise of the powers hereby conferred shall and shall always be deemed to have been done by us.

IN WITNESS WHEREOF WE,_____, THE ABOVE-NAMED PRINCIPAL HAVE EXECUTED THIS POWER OF ATTORNEY ON THIS_____DAY OF_____, 2024.

7.4. ANNEXURE – D

DECLARATION TO BE SUBMITTED BY THE BIDDERS

(WITHOUT THIS DECLARATION TENDERS WILL NOT BE ACCEPTED)

REF TENDER NO. NAME OF BIDDER:

To,

Registrar,
Kerala University of Digital Sciences Innovation and Technology,
Technocity Campus, Mangalapuram,
Thonnakkal P.O,
Thiruvananthapuram – 695 317,
Kerala

Sir,

With reference to the notice Inviting Tender, I/We have gone through the tender documents issued to us. I/We hereby declare that, I/We have visited, inspected and examined the site and its surroundings and well aware about the prevailing site conditions. I / we have satisfied ourselves before submitting this tender; obtained information about the nature of work, facilities that may be required and obtained necessary information about working conditions, risk contingencies etc., which may influence this tender.

Bidder Details	Kerala University of Digital Sciences
Name of the Person Visited Site:- Phone No: Email ID: Employee ID: Signature	Name: Signature:

7.5. ANNEXURE – E

OEM AUTHORISATION LETTER

To,
Registrar,
Kerala University of Digital Sciences Innovation and Technology,
Technocity Campus, Mangalapuram,
Thonnakkal P.O,
Thiruvananthapuram – 695 317,
Kerala

Ref: Tender No.:

This is to certify that the bidder M/s _____ (name of bidder) is representing us, M/s _____ (name of OEM) for _____ (name of product category) for the above referred tender no….. , for "**Design, Implementation And Commissioning Of Smart Data Center At Digital University Campus** ".

Ref:

WHEREAS <Name of the Original Equipment Manufacturer> who are official producers of <Name of Products intended for this Tender> and having production facilities at <Address of Mfg. Facility> do hereby authorize <Name of the bidder with complete address> (hereinafter, the "Bidder") to submit a bid of the following Products produced by us, for the Supply and Technical Support Requirements during execution period and after sales, service upto minimum 10 years from the date of completion of work (Warranty period of 5 Years from date of completion of work and 3 years AMC support after the warranty period & after 8 years, further support may be considered on demand.).
When resold by <Name of the bidder>, these products are subject to our applicable standard end user warranty terms of 5 years.

We assure you that in the event of <name of the Bidder> not being able to fulfil its obligation as our Service Provider in respect of our standard Warranty Terms we would continue to meet our Warranty Terms as prescribed in the DUK terms.

We confirm that the products quoted are on our current product list and are not likely to be discontinued within 10 years from the day of this letter. We assure availability of spares for the products for the next ten years.
We also confirm that any bidder who offer our products without our authorization as above, DUK at it's discretion may decide to disqualify the bidder and we will have no objection in this regard. Further, in such case we confirm that such bidder will not be authorized to bid for our products in any of the RFP call by DUK in future.

We confirm that the technical compliance submitted by <Name of the bidder> has been duly endorsed by us with stamp and signature.

(Signature of the Bidder)
Printed Name
Designation
Seal
Date:
Business Address:

(Note: This letter of authority must be on the letterhead of the Manufacturer and duly signed by an authorized person not below capacity of General Manager/Business unit head or Equivalent.)