



9th Floor, Statesman House,
Barakhamba Road,
New Delhi
Tender Document for Non-IT Infrastructure for
Tripura State Data Centre at Agartala

NIXI-CSC Requirement

This tender document is being issued to select an agency for delivery, installation, and commissioning of “for Upcoming State Data Centre at Agartala with uptime of 99.8%”. Bids (Technical & Financial) are invited from eligible bidders which should be valid for a period of 180 days from the last date of submission. Below are the timelines:

Cost of Tender Documents

INR 5000/- to be deposited at
NIXI-CSC DATA SERVICES LTD.,
A/c No. 921020024655044,
IFS Code – UTIB0000007,
AXIS BANK LTD., Branch – Barakhamba Road,
Connaught Place,
NEW DELHI- 110001

Earnest Money Deposit (EMD)

The Bidder will furnish, as part of its bid, an Earnest Money Deposit (EMD) of **INR 45,00,000/-** which should be deposited at
NIXI-CSC DATA SERVICES LTD.,
A/c No. 921020024655044
IFS Code – UTIB0000007, AXIS BANK LTD., Branch – Barakhamba Road, Connaught Place,
NEW DELHI- 110001

except those who are registered with the Central Purchase Organization, National Small Industries Corporation (NSIC) or the concerned Ministry or Department only (if they are registered for relevant categories/ products/ services under this tender). The bidder must submit the certification of registration with one of the given authorities along with the eligibility documents.

The EMD will be denominated in Indian Rupees and will be accepted only in form of Online line deposit via by a Nationalized/ Scheduled Bank, in favour of NIXI-CSC, New Delhi. (as mentioned above)

Unsuccessful Bidder’s EMD will be discharged/ returned after award of contract to the successful Bidder. **No interest will be paid by the Purchaser on the EMD.**

The successful Bidder’s EMD will be discharged upon the bidder executing the Contract. **No interest will be paid by the Purchaser on the EMD.**

Further, if for any reason, the tender floated by the purchaser is scrapped/ cancelled, EMD of the bidder’s will be discharged/ returned.

Any fraudulent measures may result in cancellation of the bid response and appropriate legal action will be taken by the purchaser.

The EMD may be forfeited:

- i. If a Bidder withdraws its bid during the period of bid validity specified by the Bidder in the Bid; or
 - ii. In the case of a successful Bidder if the Bidder fails.
- To sign the Contract in accordance with the tender; or
 - To furnish online deposit for the EMD and bank guarantee for contract performance in accordance with the tender
 - If a bidder quotes unrealistically high/ low rates in its financial bid.

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INVITATION TO BID

This invitation to Bid is for **“Expansion & Revamping of Non-Computing Infrastructure of Tripura State Data Centres (TSDC)”**.

The Bidders are advised to study the tender document carefully. Submission of Bids shall be deemed to have been done after careful study and examination of the tender document with full understanding of its implications. This section provides general information about the Issuer (i.e. NiXi-CsC), important dates and addresses and the overall eligibility criteria for the Bidders.

DUE DILIGENCE

The Bidder is expected to examine all instructions, forms, terms, and specifications in this RFP and study the RFP document carefully. Bid shall be deemed to have been submitted after careful study and examination of this RFP with full understanding of its implications. The Bid should be precise, complete and in the prescribed format as per the requirement of this RFP. Failure to furnish all information required by this RFP or submission of a Bid not responsive to this RFP in each and every respect will be at the Bidder 's own risk and may result in rejection of the Bid and for which NiXi-CsC shall not be held responsible.

ISSUER

The joint venture of National Internet Exchange of India (NIXI) and CSE e-governance services Ltd herein after refers as “NIXI-CSC Data Services Centre” invites proposals for **“Expansion & Revamping of Non-Computing Infrastructure of Tripura State Data Centres (TSDC)”**. Issuer and Address for Bid Submission & Correspondence.

The Director/CEO

**9th Floor, B-Wing, Statesman House Barakhamba Road,
Connaught place Delhi
New Delhi DL 110001 IN**
E-Mail: pdns@NIXI.in.

Key Events & Dates

Table I – Key Events & Dates

S. No	Information	Details
1.	RFP release date	18 th Nov
2.	Last date for submission of written queries for clarifications	24 th Nov
3.	Date of pre-bid conference	25 th Nov
4.	Release of response to clarifications	28 th Nov

5.	Bid validity period	30 days from the last date (deadline) for submission of proposals
6.	Last date (deadline) for submission of bids	29 th Nov (11 am)
7.	Opening of technical bids	29 th Nov (4 pm)
8.	Place, time, and date of opening of financial proposals received in response to the RFP notice	Will be intimated later

SCHEDULE OF REQUIREMENT

STATE DATA CENTRES (SDC)

Tripura has been in the verge for digital transformation and has been working recently to become a digital state in the country. The SDC shall host many e-Governance applications covering almost all government departments, Mobile tele-density, Internet penetration etc. Government of Tripura has set up the State Data Centre (SDC) in Agartala to boost the e-Governance activities of the State. Tripura State Data Centre is the Government Data Centre in the country and has been catering operations of smart cities etc since its establishment. For achieving the full capacity of this Data Centre, Government of Tripura will start revamping it to cater 80+ rack solution. The summary status of the Data Centres are shared in the annexures.

PURPOSE

The purpose of this bid is to for **“Expansion & Revamping of Non-Computing Infrastructure of Tripura State Data Centres (TSDC)”** (Refer Annexures for more details) respectively. The layout is given only as reference and the bidders are requested to visit the Data Centres at their own cost for better understanding of the site.

REQUIRED COMPONENTS AND SERVICES

Design, Construction of the server farm area with all required MEPC (mechanical, civil, plumbing, electrical) etc as per the guidelines stated in this RFP adhering to international standards & specifications for the equipment listed below:

PROJECT TIME SCHEDULE

The total duration of the project is for a period of 60 days from the date of release of work order including final acceptance and testing (FAT), training and submission of documentation.

INSTRUCTION TO THE BIDDERS

- **TSDC**” means Tripura State Data Centre
- **“UAT”** means User Acceptance Testing
- **“Bidder”** shall mean an Individual Company registered under the Companies Act 1956 or as defined in this document that participates in the Bidding process
- **“Representative”** shall mean the person appointed by NiXi-CsC from time to time to act on its behalf at the site for overall coordination, supervision, and project management at site
- The **“Successful bidder / Implementation Agency”** means the company with whom the order has been placed for providing Services as specified in this tender/contract and shall be deemed to include the Implementation Agency's successors, representatives (approved by NIXI-CSC),

heirs, executors, administrators and permitted assigns, as the case may be, unless excluded by the terms of the contract

- **“Implementation Agency’s Representative”** means the person, or the persons appointed by the implementation agency from time to time to act on its behalf for overall coordination, supervision, and project management. This definition shall also include any and/or all of the employees of Bidder, their authorized agents and representatives and other personnel employed or engaged either directly or indirectly by the implementation agency for the purposes of the Contract
- **“Contract”** means the Agreement entered into between NIXI-CSC and the “Implementation Agency” as recorded in the Contract form signed by NIXI-CSC and the “Implementation Agency” including all attachments and Annexes thereto, the Tender and all Annexes thereto and the agreed terms as set out in the Bid, all documents incorporated by reference therein and amendments and modifications to the above from time to time
- **“Confidential Information”** means any information disclosed to or by any Party to this Contract and includes any information in relation to the Parties, a third party or any information with regard to any taxpayer, or any other person who is covered within the ambit of any commercial taxes legislation including any such information that may come to the knowledge of the Parties hereto / Bidder’s Team by virtue of this Contract that:
By its nature or by the circumstances in which it is disclosed is confidential; or Is designated by the disclosing Party as confidential or identified in terms connoting its confidentiality; but does not include information which is or becomes public knowledge other than by a breach of this Contract
- **“The Contract Price/Value”** means the price payable to the successful bidder under the Contract for the full and proper performance of its contractual obligations
- **“Parties”** means NIXI-CSC and the successful bidder and “Party” means either of the Parties
- **“Service”** means facilities/services to be provided as per the requirements specified in this tender document and any other incidental services, such as installation, implementation, support and provision of technical assistance and other such obligations of the Successful bidder covered under the Contract.

PRE-BID CONFERENCE

NiXi-CsC shall organize a Pre-Bid Conference on the scheduled date and time. NIXI-CSC may incorporate any changes in the RFP based on acceptable suggestions received during the interactive Pre-Bid Conference. The decision of the NIXI-CSC regarding acceptability of any suggestion shall be final and shall not be called upon to question under any circumstances.

The bidders shall visit the TSDC prior to the pre-bid to have a better understanding about the existing system and location. After the bid submission date confirmation, no New Requirement/ Quires/ addition in RFP and BOQ will be entertained by NIXI-CSC.

The bidders who wish to visit sites shall give the email request to NIXI-CSC in the format given below. The request should reach NIXI-CSC at least 24 hours before the scheduled time.

Sl.no	Company	Name	Email	Mobile

AMENDMENT OF RFP DOCUMENT

At any time prior to the last date for receipt of bids, the purchaser, may, for any reason, whether at its own initiative or in response to a clarification requested by a prospective bidder, modify the Tender Document by an amendment. The amendment will be notified on NIXI-CSC portal <http://NIXI.in> and should be taken into consideration by the prospective agencies while preparing their bids.

In order to provide prospective bidders reasonable time in which to take the amendment into account in preparing their bids, the purchaser may, at its discretion, request for extending the last date for the receipt of bids.

Purchaser at any time during the tendering process can request all the prospective bidders to submit revised technical/ financial bids and/or supplementary financial bids without thereby incurring any liability to the affected bidder or bidders

VENUE AND DEADLINE FOR SUBMISSION OF PROPOSAL

The bid proposals must be received through the specified websites (as mentioned only and that also not later than the dates specified in Events and dates section of this bid document.

PROCEDURE FOR SUBMISSION OF BIDS

MODES OF SUBMISSION

1. It is proposed to have Two E-bids for this e-tender:

- I. Technical E- Bid - which includes documents for Pre-qualification Criteria and Technical proposal
- II. Commercial E- Bid

2. Please Note that Prices shall be indicated only in the Commercial Bid. If price is indicated in the Pre-Qualification Bid or Technical Bid, that Bid is liable to be rejected.

Bids shall be submitted only through the specified e-tendering portal/website.

COST OF BIDDING

The Bidder shall bear all costs associated with the preparation and submission of its Bid including cost of presentation for the purposes of clarification of the Bid, if so desired by NiXi-CsC. NiXi-CsC will be in no way responsible or liable for those costs, regardless of the outcome of the tendering process.

INSTRUCTIONS FOR TENDER PROCESS

a) Bids must be submitted in two parts (Technical and Financial). Every part of bid should be in separate envelope and should be sealed.

b) Bidder should submit their compliance against each column in technical bid.

c) Each column of financial bid should be filled up.

d) Technical compliance should be supported with relevant documents.

e) Bids should be completed in all respects, must be submitted on or before the last date specified in the schedule of events.

f) NIXI-CSC may, at its own discretion, extend the last date for submission of tenders.

g) All the bids (technical and financial) must be valid for a period of 180 days from the last date of submission of the tender for execution of contract.

h) In exceptional circumstances, prior to expiry of the original time limit, NIXI-CSC may request the bidders to extend the period of validity for a specified additional period beyond the original validity of 180 days. The request and the bidders' responses shall be made in writing. The bidders, not agreeing for such extensions will be allowed to withdraw their bids.

i) No Bid shall be modified, substituted, or withdrawn by the bidder after the due date.

j) Any alteration/ modification in the bid or additional information supplied subsequent to the bid's due date, unless the same has been expressly sought for by the authority, shall not be considered.

k) The bid submitted shall become invalid if: -

- The bidder is found ineligible.

- The bidder does not provide all the documents as stipulated in the bid document.

l) The bidder shall refer the Annexure 4 onwards to refer for more details and shall comply/adhere to those documents at the time of bid submission.

Terms and Conditions

a) Selected bidder must submit the performance bank guarantee (PBG) as per format defined in **Annexures** within stipulated days of after the receipt of notification of award of the Contract from the Purchaser

b) Selected bidders sign the agreement within Stipulated days (as shown above) from the date of receipt of PBG.

All equipment must be compatible with Indian electrical standards

d) NIXI-CSC, without assigning any reason can reject any tender(s), in which any prescribed condition(s) is/ are found incomplete in any respect and at any processing stage.

e) The decision of NIXI-CSC arrived during the various stages of the evaluation of the bids will be final & binding on all bidders.

f) Extra printed/ written conditions mentioned in the tender bids submitted by bidders will not be binding on NIXI-CSC.

g) Upon verification, evaluation/ assessment, if in case any information furnished by the bidder is found to be factually false/ incorrect (not supported by the documents), their total bid shall be summarily rejected.

h) NIXI-CSC will not be responsible for any misinterpretation or wrong assumption by the bidder, while responding to this tender.

i) All bidders agree with NIXI-CSC for honouring all aspects of fair-trade practices in executing the work orders placed by NIXI-CSC.

j) In the event of an empanelled company or the concerned division of the company being taken over/ bought over by another company, all the obligations and execution responsibilities under the agreement with NIXI-CSC, should be passed on for compliance by the new company in the negotiation for their transfer.

k) If the name of the product is changed for describing substantially the same in a renamed form; then all techno-fiscal benefits agreed with respect to the original product, shall be passed on to NIXI-CSC and the obligations with NIXI-CSC taken by the bidder with respect to the product with the old name shall be passed on along with the product so renamed.

l) In the case, bidder is found in breach of any condition(s) of tender or work order, at any stage during the course of service, appropriate legal action as per rules/ laws, may be initiated against the bidder and BG shall be forfeited, besides debarring, and blacklisting the bidder concerned for at least three years, for further dealings with NIXI-CSC.

m) Bidder must provide valid OEM authorization certificates for all the products quoted as well as certify that the proposed product is not declared end of sale. If the product is declared end of sale during contract period. Bidders should upgrade the equipment with same specification or higher with no cost to the purchaser.

The bidder must quote the products/ software's strictly as per the tendered specifications/ requirements. Complete technical details along with make, model number, complete specifications along with the quotation must be provided.

o) Any additional components, sub-components, assemblies, sub-assemblies, cables, electrical cables, connectors, sockets, required civil infrastructure that would be required to meet the desired installation requirements must be provisioned by the bidder at no additional cost to the purchaser and without any project delays.

p) The bidder must also highlight the support capabilities in India and the escalation matrix.

q) Purchaser will not be responsible for any dispute related to IPR; the entire onus for resolution will lie with the respective bidder/ OEM(s). For any customizations done by purchaser project team, the IPR remains with purchaser.

r) Purchaser reserves the right to procure the number of licenses as deemed appropriate for the software components. Purchaser reserve right to reduce or increase the required quantity.

- s) Bidder must ensure that the unit price of components should include packing, forwarding, freight, insurance, installation, commissioning, warranty, or any other charges for supply at anywhere in India.
- t) The bidder must follow change management procedures and security policies as suggested by purchaser time to time.
- u) The bidder must co-ordinate with the other System Integrator (SI), if any, for ensuring continuity of operations. The bidder must also support the OEM in diagnosing the problems related to their systems.
- v) In case any product provided by the bidder, does not meet the performance parameters mentioned by the bidder in the proposal, then the additional/ replaced appliance/ software must be immediately installed at the bidder's expense.
- w) The bidder must note that the Purchaser will provide the Sign-off for delivery, installation and commissioning after successful deployment and testing of the procured components.
- x) The bidder must ensure that all product set that is deployed for the proposed deployment is supported by OEM 24x7x365 backend support.

Permits, Taxes and Other Duties

The bidder shall obtain necessary road permits and pay all necessary local taxes and duties in delivering the equipment. NIXI-CSC will not be responsible for the same.

Subcontract

The Bidder may appoint a subcontractor for the execution of a certain parts of the work under this contract. The subcontracting details and documents supporting the same would be required as a part of Technical Bid. **The Bidder should ensure that there is only one level of subcontracting for the entire duration of the contract.**

The bidder should ensure that there is no discontinuity in services by the Agency or the subcontractor (due to change in sub-contractors) during the period of contract.

Prior to executing any contract or entering into any Contract or understanding with a delegate/ sub-contractor, the bidder will ensure that each delegate/ sub-contractor appointed by the bidder. executes a Deed of Adherence and a Performance Undertaking. A copy of the detailed agreement with prices blanked should be submitted to the Purchaser before submission of the first invoice.

The bidder should ensure that the delegate/ subcontractor appointed is competent, professional and possess the requisite qualifications and experience appropriate to the tasks they will perform under this contract. The bidder will also ensure that the delegate/ subcontractor appointed is certified in carrying out the designated work and is a registered organization. Any change in the sub-contractor(s) after the arrangement is firmed up, will be made by Contractor only with the prior written information to the Purchaser.

The Bidder will be responsible and would ensure the proper commissioning and performance of the site's services or tasks, hence, the bidder will be held responsible for any non- performance or breach by delegate/ sub-contractor. The bidder indemnifies and would keep purchaser indemnified against any losses, damages, claims or such other implications arising from or out of the acts and omissions of such delegate/ sub-contractor. The bidder would be responsible for making all payments to the delegate/ sub-contractor, in respect of any work performed or task

executed, and the purchaser would not be responsible for any part or full payment which is due to such delegate/ sub-contractor.

Nothing in this Contract or any delegation/ subcontract agreement hereunder should relieve the bidder from its liabilities or obligations under this Contract to provide the Services in accordance with this Contract.

Where the purchaser deems necessary, it would have the right to require replacement of any delegate/ sub-contractor with another delegate/ sub-contractor and the bidder will in such case terminate forthwith all agreements/ contracts other arrangements with such delegate/ sub-contractor and find of the suitable replacement for such delegate/ sub- contractor to the satisfaction of the Purchaser at no additional charge.

A notice will be issued 15 days in advance before removing a sub-contractor, any impact due to non-presence of person will invoke a penalty.

CLARIFICATION ON TENDER DOCUMENT

A prospective Bidder requiring any clarification on the RFP Document may submit his queries, in writing, at the mailing address and as per schedule indicated in “Invitation for Bids / Key Events and Dates” section. The queries must be submitted in the following format only to be considered for clarification:

The queries not adhering to the below-mentioned format shall not be responded.

Representatives from any OEM will not be allowed to be part of the pre-bid meeting. OEMs should also not accompany any of their system integrators or partners and are expected to submit their queries through partners for seeking clarifications.

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

Once answers to query/queries are published, the same queries will not be entertained further. It is expected that the Bidder shall do their own due diligence on the question they may ask. Any changes sought must be with proper justification. Any statement such as ‘specification/requirement’ is not vendor neutral OR it implies to a single OEM or any such statement similar to this, must be asked with adequate and credible proof and justification.

NiXi-CsC will respond to any request for clarification to queries on the Tender Document, received not later than the dates prescribed in Invitation for Bids / Key events and dates. The clarifications (including the query but without identifying the source of inquiry) shall be replied/uploaded (with responses).

LANGUAGE OF BIDS

The Bids prepared by the Bidder and all correspondence and documents relating to the Bids exchanged by the Bidder and NiXi-CsC, shall be written in English language. Any printed literature furnished by the Bidder may be written in another language so long the same is accompanied by

a duly attested English translation in which case, for purposes of interpretation of the Bid, the English translation shall govern. Price bid total value will be filled in both (number & Words) by the bidder.

DOCUMENTS COMPRISING THE BIDS

The Bid prepared by the Bidder shall comprise the following components. The Bids not conforming to the requirements shall be summarily rejected.

BID SUBMITTALS

In support of eligibility, a Bidder must submit the following documents (besides the other requirements of the tender), original copies or attested copies, as the case may be, in the absence of which the Bids are liable to be rejected.

See Annexure 4: Pre-Qualification Criteria

See Annexure 5: FORMAT FOR RESPONSE TO THE TENDER: PRE-QUALIFICATION BID

CONFIDENTIALITY

The RFP document is confidential and is not to be reproduced, transmitted, or made available by the Recipient to any other party. The RFP document is provided to the Recipient on the basis of the undertaking of confidentiality given by the Recipient to Company. NiXi-CsC may update or revise the RFP document or any part of it. The Recipient acknowledges that any such revised or amended document is received subject to the same terms and conditions as this original and subject to the same confidentiality undertaking.

The Recipient will not disclose or discuss the contents of the RFP document with any officer, employee, consultant, director, agent, or other person associated or affiliated in any way with NiXi-CsC or any of its customers, suppliers, or agents without the prior written consent of NiXi-CsC.

NO LEGAL RELATIONSHIP

No binding legal relationship will exist between any of the Recipients / Respondents and NiXi-CsC until execution of a contractual agreement.

ERRORS AND OMISSIONS

Each Recipient should notify NiXi-CsC of any error, omission, or discrepancy found in this RFP document.

ACCEPTANCE OF TERMS

A Recipient will, by responding to NiXi-CsC RFP, be deemed to have accepted the terms as stated in the RFP.

NORMALIZATION OF BIDS

The NiXi-CsC may go through a process of technical evaluation and normalization of the bids to the extent possible and feasible to ensure that, shortlisted bidders are more or less

on the same technical ground. After the normalization process, if NiXi-CsC feels that any of the Bids needs to be normalized and that such normalization has a bearing on the price bids; the NiXi-CsC may at its discretion ask all the technically shortlisted bidders to re-submit the technical and commercial bids once again for scrutiny.

AUTHORIZED SIGNATORY

The selected bidder shall indicate the authorized signatories who can discuss, sign, negotiate, correspond and any other required formalities with the NiXi-CsC, with regard to the obligations. The selected bidder shall submit, a certified copy of the resolution of their Board, authenticated by Company Secretary, authorizing an official or officials of the company to discuss, sign with the NiXi-CsC, raise invoice and accept payments and also to correspond. **The bidder shall furnish proof of signature identification for above purposes as required by the NiXi-CsC.**

SERVICE LEVELS

The services of the vendor, to be selected through this tender, shall be required to provide the Annual Maintenance services, O&M services and periodic Audit services after tender finalization and AMC of basic infrastructure equipment after warranty expiry as per the details below:

- a) Maintenance and operations of all Non-IT Infrastructure all but not limited to Transformers, Generator sets, ACB/VCB, LT Panels, HT Panels, UPS systems, batteries, Bus bar, iPDU, HVAC System, Fire Prevention, Detection and Suppression System, Lighting system, Power Cabling, Network Cabling, VESDA, WLDS, DCIM and facility interior etc.
- b) Maintenance and operations of the multi-layer Physical Security for the products, devices, systems, equipment's, and infrastructure that shall be delivered over the period of time.
- c) Onsite support for Data Centre Basic MEPC, Non-IT Infrastructure Operations and maintenance on 24x7x365 basis by qualified engineers/ personnel for a period of five years, ensure at least 99.98% uptime availability.
- d) The selected SI has to deploy qualified manpower (at least one staff per shift) for operating each of BMS, HVAC system cum Electrical installations on 24x7 basis (8 hrs: 3 shifts) and one project supervisor (onsite) for 7-year period (entire duration of the contract).. Each shift should have one qualified manpower of each field i.e., BMS, HVAC/Electrical. The selected SI shall do the back-to-back AMC including critical components such as UPS, HVAC, Racks, iPDU, DCIM, AHU, CCTV, Electrical Panel, ATS, etc. with respective OEMs for the entire duration of the contract (7 Years) including refresh / new generation hardware / software replacement / upgradation, if available with OEM.
- e) The response time commitment from the OEMs required is 4 Hrs in the event of any breakdown and the resolution time maximum 10 hrs to 24 Hours.

SERVICE LEVEL AGREEMENT

PURPOSE OF THIS AGREEMENT

The purpose of this Service Level Agreement (hereinafter referred to as SLA) is to clearly define the levels of service, which shall be provided by the SI to NIXI-CSC for the duration of this contract. The benefits of this SLA are to:

- a) Trigger a process that applies NIXI-CSC and the SI management attention to some aspect of performance when that aspect drops below an agreed upon threshold, or target makes explicit the expectations that NIXI-CSC has for performance Helps NIXI-CSC control the level and performance of SI services.
- b) The SI and NIXI-CSC shall maintain a monthly contracts to monitor the performance of the services being provided by the SI and the effectiveness of this SLA. This Service Level Agreement is between the SI and NIXI-CSC.

DEFINITIONS

For purposes of this Service Level Agreement, the definitions and terms as specified in the contract along with the following terms shall have the meanings set forth below:

"Availability" shall mean the time for which the services and facilities offered by the SI are available for conducting operations from the MEPC and Non-IT equipment’s hosted in the Data Centre.

"Downtime" is the time the services and facilities are not available to NIXI-CSC and excludes the scheduled outages/ maintenance planned in advance for the Data Centre.

"Support" shall mean the SI’s 24x7x365 centre which shall handle Fault reporting, Trouble Ticketing, and related enquiries during this contract.

"Incident" refers to any event / abnormalities in the functioning of the Data Centre MEPC, Non-IT Equipment / Services that may lead to disruption in normal operations of the Data Centre services.

DESCRIPTION OF SERVICES PROVIDED

The SI will provide following services for Operations & Maintenance including AMC of Basic Infrastructure for the establishment of (NIXI-CSC) TSDC Data Centre at the proposed site.

- On-site maintenance of all the Basic Infrastructure equipment and their components, physical security Infrastructure in the Data Centre.

SERVICE LEVEL AGREEMENTS & TARGETS

<u>Level</u>	<u>Description</u>	<u>Technology affected</u>	<u>Technical Response & Resolution</u>	<u>Minimum Service Level</u>	<u>Cost Reference</u>

Critical	The operations isdown	The critical environmental infrastructure of a DC is down for which the DC is deemed non-functional. This includes 1. Electrical components are down like UPS, Precision AC 's. 2. Access control system, CCTV camera 3. BMS System	During business hours 30 minutes Non business hours – within 60 minutes	99.95% Measurement tool – BMS utility	All components of the affected Environment aspect including Management cost
Key	Operation is partially affected for DC build infrastructure	The following environmental aspects are key to the functions of the DC 1. Any or all of the components are partially	During business hours – 60 minutes Non business hours – 180 minutes	99.9% Measurement tool – BMS utility	All components of the affected Environment aspect including management cost
		down/malfunction but operation is sustained thereby leveraging the redundant component. 2. Room temperature and humidity does not mention as specified in scope of work.			
Incident Management	Operation Management	Resource deployment for issue resolution	During business hours – 30 minutes Nonbusiness hours – 120 minutes	99%	Resource allocation cost, components for the associated service which is an issue

This SLA document provides for minimum level of services required as per contractual obligations based on performance indicators and measurements thereof. The SI shall ensure provisioning of all required services while monitoring the performance of the same to effectively comply with the performance levels.

The services provided by the SI shall be reviewed by NIXI-CSC shall:

- a) Check performance of the SI against this SLA over the review period and consider any key issues of the past period’s performance statistics including major incidents, service trends, etc.
- b) Discuss escalated problems, new issues and matters still outstanding for resolution.
- c) Review of statistics related to rectification of outstanding faults and agreed changes.
- d) Obtain suggestions for changes to improve the service levels.

In case desired, NIXI-CSC may initiate an interim review to check the performance and the obligations of the SI. The SLA may be reviewed and revised in accordance with the procedures, SLA Change Control. The procedures will be used if there is a dispute between NIXI-CSC and the SI on what the performance targets should be.

The SLA has been logically segregated in the following categories:

- a) Performance Related Service Levels
- b) Support Services related for the Data Centre infrastructure
- c) Compliance & reporting Procedures
- d) Periodic Facility Audits

The following measurements and targets shall be used to track and report performance on a regular basis. The targets shown in the following table are applicable for the duration of the contract.

Availability Measurements

	Type of Infrastructure	Measurement	Expected Service Level
Critical	Environmental Infrastructure	Availability of Critical Environmental Infrastructure Elements.	99.982%
key	Environmental Infrastructure	Availability of Key Environmental Infrastructure Elements	99.982%

PERIODIC FACILITY AUDITS

SI will do external party yearly audits to check for the compliance of the Data Centre Facility with all the technical specifications as outlined in tender and submit the report to NiXi-CsC. Any non-compliance to the specifications would qualify the SI for a penalty. For every instance of non-compliance (even if it is repetitive in nature) there would be a penalty. The penalty would be levied on an additive basis and the accumulated total would be deducted from the payment due to the SI in the following month.

Though NIXI-CSC would also conduct audits on a half-yearly basis, surprise checks can be conducted anytime and for any number of times. Any non-compliance observed during the

surprise checks would also qualify the SI for a penalty. The penalty would be levied on an additive basis and the accumulated total would be deducted from the payment due to the SI in the month in which surprise checks were conducted

Requirement	Measurement	Penalty
Surveillance & Security for the Items/products/inventory stored	NIXI-CSC would audit a randomly selected sample of the quantities of item stored The SI should be able to produce all the inventory records at the time of such audit.	1% of the applicable site quarter's pay-out for every missing record in the randomly selected sample.
Fire Prevention, detection & Suppression	NIXI-CSC would audit randomly selected Fire Suppression systems, Extinguisher and Detection systems. Extinguishers in all sites. The SI is expected to maintain the gas levels as per specifications laid	1% of the applicable site quarter's pay-out for every non-compliance which is treated as a compliance issue.
Access Controls	NIXI-CSC would audit randomly selected Access controls in all sites. The SI is expected to maintain the required functionality for all the access control devices and smart cards.	1% of the applicable site quarter's pay-out for every non-compliance which is treated as a compliance issue.
Water Leakage System	NIXI-CSC would audit randomly selected Water Leakage systems at the site.	1% of the applicable site quarter's pay-out for every non-compliance which is treated as a compliance issue.
Rodent Repellent system	NIXI-CSC would audit randomly and may check the functionality of the system.	1% of the applicable site quarter's pay-out for every non-compliance which is treated as a compliance issue
UPS output power	NIXI-CSC would audit randomly the UPS parameters and functionality test. The SI should be able to produce the records of the parameters recorded and perform the functionality tests.	1% of the applicable site quarter's pay-out for every non-compliance which is treated as a compliance issue

HVAC	NIXI-CSC would audit randomly the HVAC parameters and functionality test. The SI should be able to produce the records of the parameters recorded and perform the functionality tests.	1% of the applicable site quarter's pay-out for every non-compliance which is treated as a compliance issue
Generators	NIXI-CSC would audit randomly the Generator set parameters and functionality test. (including fuel tank). The SI should be able to produce the records of the parameters recorded and perform the functionality tests.	1% of the applicable site quarter's pay-out for every non-compliance which is treated as a compliance issue
Spare parts, equipment, tools. Etc.	NIXI-CSC would audit randomly the Inventory parameters and quantity test. Spare parts, equipment, tools etc must be kept in sufficient quantity so that in case of Outage/Problem. The SI should be able to produce the inventory list of reserve/spare parts at the time of such audit.	1% of the applicable site quarter's pay-out for every non-compliance which is treated as a compliance issue

Note: After the Audit, DC Facility management shall be the SI's responsibility including (but not limited to) refill the resources utilised in the audits purpose. (such as fuel/diesel, fire extinguisher, water etc.).

Safety procedures and protocols to be adhered at the time of working on site.

SLA CHANGE MANAGEMENT PROCEDURE

General SLA Procedure

It is acknowledged that this SLA may change as NIXI-CSC's functional requirement evolve over the course of the contract period. This document also defines the following management procedures:

- a) A process for negotiating changes to the SLA.
- b) An issue management process for documenting and resolving difficult issues.
- c) NIXI-CSC and SI management escalation process to be used in the event that an issue is not being resolved in a timely manner by the lowest possible level of management.

d) Any changes to the levels of service provided during the term of this Agreement will be requested,

Documented and negotiated in good faith by both parties. Either party can request a change. Changes will be documented as an addendum to this SLA and, subsequently, the Contract.

If there is any confusion or conflict between this document and the Tender (and its addenda), the Tender will supersede. SLA Change Process The parties may amend this SLA by mutual agreement in accordance with terms of this contract. Changes can be proposed by either party. The SI can initiate an SLA review with the NIXI-CSC. Normally, the forum for negotiating SLA changes will be NIXI-CSC 's monthly meetings. Unresolved issues will be addressed using the issue management process.

e) The SI shall maintain and distribute current copies of the SLA document as directed by NIXI-CSC. Additional copies of the current SLA will be made available at all times to authorized parties.

PENALTIES

The total quarterly deduction should not exceed 10% of the applicable fee.

Two consecutive quarterly deductions of more than 20 % of the applicable fee on account of any reasons,

will be deemed to be an event of default and termination as per Clauses listed above and General Conditions, Miscellaneous conditions of the Contract and the consequences as provided in the tender shall follow.

Management Escalation Procedures & Contact Map The purpose of this escalation process is to provide a quick and orderly method of notifying both parties that an issue is not being successfully resolved at the lowest possible management level. Implementing this procedure would mean that NIXI-CSC and SI management are communicating at the appropriate levels.

ESCALATION PROCEDURE

Escalation should take place on an exception basis and only if successful issue resolution cannot be

achieved in a reasonable time frame.

- Either NIXI-CSC or SI can initiate the procedure

-The "moving party" should promptly notify the other party that management escalation will be initiated

-Management escalation will be defined as shown in the contact map below

-Escalation will be one level at a time and concurrently

CONTACT MAP

Escalation Level	Department Representative with contact Details	SI Representative with Contact Details
Level 1:		Project Supervisor (onsite)
Level 2:		Project Manager
Level 3:		Steering Committee

OPERATION AND MAINTENANCE

SI will deploy on Site supervisor per shift for routine Operation and maintenance of the Data Centre with a reliever for managing the leaves and duty hours of the remaining To supervise the operations of the team and the Data Centre one project manager will also be deployed.

All the manpower resources to be considered with suitable educational criteria and experience.

SI shall provide information for the following:

- Chief Executive Officer
- Project Manager
- Site Manager for each site
- Team Members/ Engineers

Acceptance of SLA IN WITNESS WHEREOF, the parties hereto have caused this Service Level Agreement to vide Tender No. Dated to be executed by their respective authorized representatives.

For and on behalf of SI:

For and on behalf of NIXI-CSC:

PRE-QUALIFICATION CRITERIA

The Bidder must possess the requisite experience, strength, and capabilities in providing the services necessary to meet the requirements as described in the RFP document. The Bids must be complete in all respects and shall cover the entire scope of work as stipulated in the tender document. The invitation to Bid is open to all Bidders who qualify the eligibility criteria as given below:

The Bidder also need to provide the self-compliance sheet as part of the bid process

Table 1: Pre-Qualification compliance

S. No	Criteria	Document required	Compliance (yes / no)
1.	The Bids shall be submitted only by the sole Bidder; no consortium is allowed in this Bid	Declaration in this regard needs to be submitted	
2.	The Bidder shall furnish, as part of its Bid, an Earnest Money Deposit (EMD) as specified	Payment shall be made as specified	

3.	<p>(a) The Bidder shall be an established company registered under the Companies Act, 1956 or Limited liability partnership firm act 2013 and in operation for at least 5 years as on 31.03.2022 and shall have their registered offices in India.</p> <p>(b) The company must be registered with appropriate authorities for all applicable statutory duties/taxes.</p> <p>(c) The Bidder must have a local presence in North-East or should establish a local presence within 30 days from the award of contract.</p>	<p>(a) Valid documentary proof of:</p> <ul style="list-style-type: none"> ● Certificate of incorporation ● Certificate of Commencement ● Certificate consequent to change of name, if applicable <p>(b) Valid documentary proof of:</p> <ul style="list-style-type: none"> ● GST Registration number ● Income Tax registration/PAN number ● Income Tax returns for the financial years 2018-19, 2019-20 and 2020-21. <p>(c) Valid documentary proof of:</p> <ul style="list-style-type: none"> ● Local presence/ Declaration regarding the establishment of local presence within the desired time. 	
4.	<p>The Bidder shall have a positive net worth in each of the following years FY 2018-19, 2019-20, 2020-21, and 2021-22.</p> <p>Note: State/ Central PSUs are exempted from the positive net worth.</p>	<p>A certified document by the Chartered Accountant stating the net worth for each year specified.</p>	
5.	<p>The average annual financial turnover of the bidder during the last three years ending 31.03.2022 should be at least Rs. 80 Crores.</p>	<p>Audited balance sheet for the financial year 2018-19, 2019-20, 2020-21, and 2021-22</p>	
6.	<p>*Bidder should have successfully completed implementation of similar projects in Data Centres in India, during the last five years ending on 31 March 2022.</p> <p>i. Three completed projects costing not less than Rs. 10 Crores each or</p> <p>ii. Two completed projects costing not less than Rs. 20 Crores each or</p> <p>iii. One completed project costing not less than Rs. 25 Crores</p> <p>*This criteria is only applicable for pre- qualification, but the bidders</p>	<p>1. Work orders confirming year and area of activity.</p> <p>2. Completion certificate from the customer.</p> <p>3. No work order for supply of one of the packages will qualify for eligibility.</p>	

	are encouraged to submit more projects than the pre-qualification criteria to get maximum marks for technical bid marking as defined into Technical Qualification of the RFP (stage 2 Technical qualifications section no 2)		
7.	The Bidder shall not be under a Declaration of Ineligibility for corrupt or fraudulent practices or blacklisted with any of the Central / State Government agencies.	Declaration in this regard by the authorized signatory of the Bidder	
8.	Certificate by authorized signatory confirming acceptance of all tender terms and conditions	Declaration on the company letter head by the signing authority	
9.	Authorization of signatory for the purpose of this tender	Power of Attorney	
10.	OEM Local presence: The OEM of major equipment Precision AC, Diesel Generator, UPS proposed by the bidder must have a service centre in North-East.	Declaration from OEM to be provided	
11.	The bidder should have successfully executed build of at least 2 Data Centers comprising of 1000 Sq. ft. or more area. Out of these two Data Centers, The bidder should have successfully built and is maintaining & managing one Data Centre having more than 1000 sq. ft. which is primarily consisting of Precision Air-conditioning, UPS System, Electrical Distribution and Lighting, Fire Detection and suppression, Access control and CCTV, Building	<ul style="list-style-type: none"> • Copy of Client Certification for successful completion and commissioning • For IDC bidder certificate from client mentioning area of Data Centre occupied. PO & Installation report.	<ul style="list-style-type: none"> •

	<p>Management System, intelligent Smoke & Fire Detection, Rodent repellent System, Structured cabling, Civil and Interiors, D.G Set etc. and all the allied works for more than two years</p> <p>Note:</p> <p>a. Bidder 's in house Data Centers shall not be considered.</p> <p>Bidders who have built their own Internet Data Centre (DC) for commercial use will be considered.</p>		
12.	<p>The OEM offered product quoted by the bidder should be installed in any one of the Data Centre environments in India (but not limited to):</p> <ul style="list-style-type: none"> • Precision AC • UPS • Fire Detection and Suppression & Intelligent Smoke & Fire Detection • BMS 	A document in this regard from the client is to be submitted.	
13	<p>The vendor need to provide an undertaking letter on his latter head for complying central minimum wages act and labour laws (in India) for all the employees hired directly and indirectly</p>	Declaration on the company letter head by the signing authority	

Note:

a) The bid documents uploaded shall be properly aligned with page numbers and index. Relevant portions, in the documents submitted in pursuance of eligibility criterion mentioned above, shall be highlighted.

b) Bidders must ensure that all required documents have been uploaded along with the bid to justify eligibility.

- c) Bidder must comply with all the above-mentioned criteria. Non-compliance of any of the criteria will entail rejection of the offer summarily. Photocopies of relevant documents / certificates should be submitted as proof in support of the claims made. NIXI-CSC reserves the right to verify /evaluate the claims made by the vendor independently. Any decision of NIXI-CSC in this regard shall be final, conclusive, and binding upon the bidder.
- d) Please refer to Annexures for Declarations asked above.

GENERAL INFORMATION ABOUT THE BIDDER

Details of the Bidder (Company)				
1.	Name of the Bidder			
2.	Address of the Bidder			
3.	Status of the Company (Public Ltd / Pvt. Ltd)			
4.	Details of Incorporation of the Company		Date:	
Ref.#				
5.	Details of Commencement of the Business		Date:	
Ref.#				
6.	Valid GST registration no.			
7.	Permanent Account Number (PAN)			
8.	Name & Designation of the contact person to whom all reference shall be made regarding this tender			
9.	Telephone No, (with STD code)			
10.	Email of the contact person:			
11.	Fax No. (with STD code)			
12.	Website			
13.	Financial Details (as per audited Balance Sheets) in crore)			
14.	Year	2018-19	2019-20	2020-21* /2021-22
15.	Net Worth			
16.	Turn over			
17.	PAT			

EVALUATION CRITERIA

Evaluation will be carried out in two steps i.e. technical evaluation and financial evaluation. Bidder has to qualify in technical evaluation for being eligible for financial evaluation.

a. Technical evaluation will be based on various parameters as mentioned below.

i. Experience

ii. Turnover

iii. Technical capabilities (Technical solution submitted)

Absence of non-compliance or non-submission of technical supporting documents may lead to rejection of bid. No relaxation is permitted in eligibility conditions after submission of bids.

b. The financial evaluation will be done as mentioned below. Bid will evaluate the total cost of equipment and AMC cost for 7 years. The total costs will include the cost of hardware/ software/ AMC / Installation with applicable taxes. Cost of AMC will be taken for 7 Years (aggregated). Bidder should be financially competent to undertake the project without any delay/hindrance and should have positive net worth.

i. 90% marks to equipment cost

ii. 10% marks to AMC cost for 7 years

EVALUATION PROCESS

i. NIXI-CSC shall constitute a Tender Evaluation Committee to evaluate the responses. The Tender Evaluation Committee shall evaluate the responses to the TENDER and all supporting documents/documentary evidence. Inability to submit requisite supporting documents/documentary evidence by bidders may lead to rejection of their bids.

ii. The decision of the Tender Evaluation Committee in the evaluation of bids shall be final. No correspondence will be entertained outside the process of evaluation with the Committee. The Tender Evaluation Committee may ask for meetings or presentation with the Bidders to seek clarifications or confirmations on their bids.

iii. The Tender Evaluation Committee reserves the right to reject any or all bids. Each of the responses shall be evaluated as per the criteria and requirements specified in this TENDER.

The steps for evaluation are as follows:

Stage 1: Pre-Qualification

- NIXI-CSC shall validate the “TENDER Document fee & Bid Security/Earnest Money Deposit (EMD)”.
- If the contents of the RFP Bid are as per requirements, NIXI-CSC shall open the “Pre-Qualification Bid”. Each of the Pre-Qualification conditions mentioned in the RFP is MANDATORY. In case, the Bidder does not meet any one of the conditions, the bidder shall be disqualified.
- Technical and Financial bids for those bidders who don't pre-qualify will not be opened. Financial bid will not be opened for those bidders, who don't qualify the technical evaluation. Bid Security shall be returned to the unsuccessful bidders.

Stage 2: Technical Evaluation

- “Technical bid” will be evaluated only for the bidders who succeed in Stage 1.
- NIXI-CSC will review the technical bids of the short-listed bidders to determine whether the technical bids are substantially responsive. Bids that are not substantially responsive are liable to be disqualified at NIXI-CSC’s discretion.
- The bidders' technical solutions proposed in the bid document shall be evaluated as per the requirements specified in the TENDER and technical evaluation framework as mentioned into the RFP.
- Each Technical Bid will be assigned a technical score out of a maximum of 100 marks. Only the bidders who get an Overall Technical score of 70% or more in the Technical Evaluation Framework as given in the RFP will qualify for commercial evaluation stage. Failing to secure minimum marks shall lead to technical rejection of the Bid.
- The Bidder's technical solution proposed in the Technical Evaluation bid shall be evaluated as per the evaluation criteria in the following table.

S No.	Evaluation Criteria	Total Marks	Minimum Technical qualification Marks
1.	Company profile and financial Standing	15	
2.	Past Experience/Projects Bidder should have successfully completed implementation of similar projects in Data Centres in India, during the last five years ending on 31 March 2022.	Max 45	
	i. Total Value of projects more than as 100 crore as per the defined criteria of the projects into PQ (pre-Qualification criteria defined in stage 1: pre-qualification section 6)	45	
	ii. Total Value of projects more than as 75 crore and less than 100 crores as per the defined criteria of the projects into PQ (pre-Qualification criteria defined in stage 1: pre-qualification section 6)	40	60

	iii. Total Value of projects less than 75 crores as per the defined criteria of the projects into PQ (pre-Qualification criteria defined in stage 1: pre-qualification section 6)	35	
3.	Proposed Solution, Approach, Methodology	15	
4.	Technical presentation and Demo	10	
5.	O&M and Manpower Deployment	15	10
	Total	100	70

- Qualification Minimum absolute technical score to qualify for commercial evaluation is 70 marks out of total 100 marks and also the bidder should get minimum of 70% of marks in each of above- mentioned evaluation criteria.
- NiXi-CsC reserves the right to check/validate the authenticity of the information provided in the Pre-qualification and Technical Evaluation criteria and the additional requisite support must be provided by the Bidder.

Stage 3: Commercial Evaluation

- All the technically qualified bidders will be notified to participate in Commercial Bid opening process.
- The commercial bids for the technically qualified bidders shall then be opened on the notified date and time and reviewed to determine whether the commercial bids are substantially responsive. Bids that are not substantially responsive are liable to be disqualified at NiXi-CsC 's discretion.
- Commercial Bids that are not as per the format provided in Annexure 10 shall be liable for rejection.
- The bid price shall inclusive of all taxes and levies and shall be in Indian Rupees with clear breakup of base price along with taxes (without GST).
- Mentioning compliance for each line item of BOM is mandatory.
- Bidder would not leave blank in any of the line item of BoM.
- The Bid Security amount shall be returned to those who don't qualify the financial evaluation stage and after PBG shall be submitted by the Successful Bidder.

Short Listing

The bidder needs to qualify as per eligibility criteria. Only eligible bidders will be qualified for the Technical evaluation process, to be qualified for commercial bid opening. Only those bidders who achieve technical requirements mentioned in scope of work would be short-listed for commercial bid evaluation.

The Commercial Bids of only technically qualified bidders will be opened and evaluated by NiXi-CsC, and the evaluation will take into account the following factors:

1. The optimized TCO identified in the commercial bid would be the basis of the entire outflow of NiXi-CsC for undertaking the scope of work. NiXi-CsC will consider the TCO over a seven-year period starting from the date of going live in production. Any further infrastructure or hardware (electrical components) required to meet the performance criteria of NiXi-CsC as stated in the RFP, during the tenure of the project, would be at the cost of the Bidder.
2. The bidder will be solely responsible for complying with any applicable Export / Import Regulations. NiXi-CsC will no way be responsible for any deemed Export benefit that may be available to the bidder.
3. In case there is a variation between numbers and words; the value mentioned in words would be considered.
4. The OEM needs to provide Unit costs would be provided for components and services; unit rates would be considered for the TCO purposes.
5. In the event the vendor has not quoted or mentioned the component or services required, for evaluation purposes the highest value of the submitted bids for that component or service would be used to calculate TCO. For the purposes of payment and finalization of the contract, the value of the lowest bid would be used.

Entire Agreement

The agreement will be between NIXI-CSC and the bidder (including all backend agreements of bidder with OEM and third parties) constitutes the entire agreement between the "Parties" with respect to the matters addressed herein and can only be modified through a written instrument signed and agreed with consensus-ad-idem by both parties

a) **Governing Law and Jurisdiction:** This agreement shall be construed and governed in accordance with the laws of India. Further, in case of any dispute is between the parties, the same shall be referred to the arbitration and shall be decided as per the provisions of the Arbitration & Conciliation Act, 1996 (amended and updated as of date) with arbitration seat/venue at New Delhi. Any appeal or petition against the arbitration award/ final order/ judgment shall be filed in and decided by courts in New Delhi, India.

Confidentiality and Security

The selected bidder and their personnel will not, either during the term or after expiration of this contract, disclose any proprietary or confidential information relating to the services, contract or business or operations of NIXI-CSC without the prior written consent of NIXI-CSC.

b. The bidder will ensure that no information about the software, hardware, and database, the policies of NIXI-CSC is taken out in any form including electronic form or otherwise, from the client site.

Indemnity

a. The selected bidder shall indemnify NIXI-CSC from and against any costs, loss, damages, expense, claims including those from third parties or liabilities of any kind howsoever suffered, arising, or incurred inter alia during and after the Contract period out of:

b. Any negligence or wrongful act or omission by the selected bidder or any third party associated with selected bidder in connection with or incidental to this Contract or.

c. Any breach of any of the terms of this contract by the selected bidder, the selected bidder's team or any third party

d. Any infringement of patent, trademark/ copyright arising from the use of the supplied goods and related services or any party thereof

e. The selected bidder shall also indemnify the purchaser against any privilege, claim or assertion made by a third party with respect to right or interest in, service provided as mentioned in any Intellectual Property Rights and licenses.

Limitation of Liability

a. Neither Party shall be liable to the other Party for any indirect or consequential loss or damage (including loss of revenue and profits) arising out of or relating to the Contract.

b. Except in the case of gross negligence or wilful misconduct on the part of the selected bidder or on the part of any person acting on behalf of the selected bidder executing the work or in carrying out the services, the selected bidder, with respect to damage caused by the selected bidder including to property and/ or assets of NIXI-CSC shall regardless of anything contained herein, not be liable for any direct loss or damage that exceeds (A) the contract value or (B) the proceeds the selected bidder may be entitled to receive from any insurance maintained by the selected bidder to cover such a liability, whichever of (A) or (B) is higher. For the purposes of this clause, "gross negligence" means any act or failure to act by a Party which was in reckless disregard of or gross indifference to the obligations of the Party under the contract and which causes harmful consequences to life, personal safety, or real property of the other Party which such Party knew or would have known if it were acting as a reasonable person, would result from such act or failure to act. Notwithstanding the foregoing, gross negligence shall not include any action taken in good faith for the safeguard of life or property. "Wilful Misconduct" means an intentional disregard of any provision of this Contract which a Party knew or should have known if it were acting as a reasonable person, would result in harmful consequences to life, personal safety or real property of the other Party but shall not include any error of judgment or mistake made in good faith.

c. This limitation of liability slated in this Clause, shall not affect the selected bidder's liability, if any, for direct damage by selected bidder to a Third Party's real property, tangible personal property or bodily injury or death caused by the selected bidder or any person acting on behalf of the selected bidder in executing the work or in carrying out the Services.

Force Majeure

If at any time, during the continuance of the agreement, the performance in whole or in part by either party of any obligation under the agreement is prevented or delayed by reasons beyond the control of a party such as war, hostility, acts of public enemy, civil commotion, sabotage, fires, floods, explosions, epidemics quarantine restrictions, strikes, natural calamities, lockouts, pandemic, acts of state or acts of God (hereinafter referred to as "events"), provided notice of happenings of any such event is duly endorsed by the appropriate authorities/chamber of commerce in the country of the party giving notice, is given by party seeking concession to the other as soon as practicable, but within 21 days from the date of occurrence and termination thereof, neither party shall, by reason of such event, be entitled to terminate the empanelment/contract, nor shall either party have any claim for damages against the other in respect of such non-performance or delay in performance, and deliveries under the empanelment/contract shall be resumed as soon as practicable after such event has come to an end or ceased to exist, provided further, that if the performance in whole or in part or any obligation under the empanelment is prevented or delayed by reason of any such event for a period exceeding 60 days, NIXI-CSC may at its option, terminate the empanelment. Neither Party shall be liable for any failure or delay in the performance of its obligations under the contract or Work Orders hereunder to the extent such failure or delay or both is caused, directly, without fault by such Party, by reason of such event. NIXI-CSC shall, however, be responsible to pay the bidder for the services successfully rendered to the satisfaction of NIXI-CSC under the work orders/ purchase orders issued pursuant to the contract.

Events of Default by Bidder

The failure on the part of the bidder to perform any of its obligations or comply with any of the terms of this Contract should constitute an Event of Default on the part of the bidder. The events of default as mentioned above may include inter-alia the following:

- a) the bidder has failed to perform any instructions or directives issued by the Purchaser which it deems proper and necessary to execute the scope of work under the Contract, or
- b) the bidder/ bidder's Team has failed to confirm with any of the Service/Facility Specifications/standards as set out in the scope of work of this Tender document or has failed to adhere to any amended direction, modification or clarification as issued by the Purchaser during the term of this Contract and which the Purchaser deems proper and necessary for the execution of the scope of work under this Contract.
- c) the bidder has failed to demonstrate or sustain any representation or warranty made by it in this Contract, with respect to any of the terms of its Bid, the Tender, and this Contract.
- d) The bidder/ bidder's Team has failed to comply with or is in breach or contravention of any applicable laws.
- e) Failure of the successful Bidder to comply with the requirement of this clause shall constitute sufficient grounds for the annulment of the award and forfeiture of the EMD/Security Deposit. In case of exigency, if the Purchaser gets the work done from elsewhere, the difference in the cost of getting the work done will be borne by the successful Bidder subject to maximum of 10% of the value of the goods/services for which alternative option is sorted to.

Termination of the Contract

A Notice shall be given 30 days curing period in advance to the selected bidder before termination of the contract.

The contract maybe terminated within 30 business days if the Bidder does not perform its obligations as mentioned in the Contract or commits an Event of Default and fails to cure such default within 30 days of receiving a written notification from the Purchaser notifying it of such default, the same would constitute the breach of the Contract and the Purchaser shall have the right to terminate or withdraw the Contract. Such cancellation of contract on account of non-performance by the Bidder would entitle the Purchaser to forfeit the performance security.

Further the purchaser may terminate this agreement on 30 business days' notice to the bidder under the following conditions as well:

- a) If the bidder becomes insolvent, bankrupt, or enters receivership, dissolution, or liquidation, the other party may terminate this agreement with immediate effect; or
- b) There is or becomes any Law that makes the performance of the terms of this agreement illegal or otherwise prohibited; or
- c) Any Governmental Authority issues an Order restraining or enjoining the transactions under this agreement; or
- d) In case purchaser finds illegal use of hardware and software tools that are dedicated to purchaser only
- e) Under any other justified circumstance

In the event of termination, Purchaser may Invoke the Performance Bank Guarantee/Security Deposits, recover such other direct costs and other amounts towards direct damages from the selected bidder that may have resulted from such default and pursue such other rights and/or remedies that may be available to the Purchaser under law.

In any case of Termination, the Purchaser shall be liable to pay the bidder for all the goods and services accepted as per the milestone till the effective date of termination.

Exit Management

The exit management requirements as elaborated below must be read in conjunction to and in harmony with related clauses of this tender.

- a) Given the critical nature of the service, it is imperative that a well-defined exit management strategy be made ready which will enable easy transition of activities when the contract expires/ is truncated. Accordingly, the bidder shall submit an exit management plan, which will focus on the key activities it will perform to ensure that a seamless transition of knowledge and activities be possible, and the same shall be evaluated. The exit management plan will be based on the plan proposed by the bidder in its technical proposal. The final exit management plan will have to be mutually agreed upon by both NIXI-CSC and the bidder. The bidder shall understand that ensuring a smooth transition at the end of the project period is a key requirement from NIXI-CSC. The bidder needs to update the exit management plan on half yearly basis or earlier in case

of major changes during the entire contract duration. While proposing the exit management plan, the bidder shall ensure that the subsequent points are taken care of.

b) At the end of the contract period or during the contract period or contract termination, if any other agency is identified or selected for providing services related to the scope of work as in the contract, the bidder shall ensure proper and satisfactory transition is made to the other agency. In case NIXI-CSC wants to take over the project itself, then bidder has to ensure proper transition to the team designated by NIXI-CSC.

c) All risks during transition stage shall be properly documented by bidder and mitigation measures be planned in advance and recorded in the exit management plan so as to ensure smooth transition without any service disruption.

d) The bidder shall provide all knowledge transfer of the system to the satisfaction of NIXI-CSC as per the specified timelines.

Dispute Resolution

a) The Bidder and NIXI-CSC shall endeavour their best to amicably settle, by direct negotiation, all disputes arising out of or in connection with the empanelment.

b) In case any dispute between the Parties, does not settle by negotiation, the same may be resolved exclusively by arbitration and such dispute may be submitted by either party for arbitration. Arbitration shall be held in New Delhi and conducted in accordance with the provisions of Arbitration and Conciliation Act, 1996 or any statutory modification or re-enactment thereof. Each Party to the dispute shall appoint one arbitrator each and the third to be appointed by the MeitY, Government of India.

c) The "Arbitration Notice" should accurately set out the disputes between the parties, the intention of the aggrieved party to refer such disputes to arbitration as provided herein, the name of the person it seeks to appoint as an arbitrator with a request to the other party to appoint its arbitrator within 45 days from receipt of the notice. All notices by one party to the other in connection with the arbitration shall be in writing and be made as provided in this tender document.

d) Each Party shall bear the cost of preparing and presenting its case, and the cost of arbitration, including fees and expenses of the arbitrators, shall be shared equally by the Parties unless the award otherwise provides. The Bidder shall not be entitled to suspend the Service/s or the completion of the job, pending resolution of any dispute between the Parties and shall continue to render the Service/s in accordance with the provisions of the Contract/Agreement notwithstanding the existence of any dispute between the Parties or the subsistence of any arbitration or other proceedings.

CORRUPT AND FRAUDULENT PRACTICES

As per Central Vigilance Commission (CVC) directives, it is required that Bidders / Suppliers / Contractors observe the highest standard of ethics during the procurement and execution of such contracts in pursuance of this policy:

Corrupt Practice¹ means the offering, giving, receiving, or soliciting of anything of values to influence the action of an official in the procurement process or in contract execution

AND

Fraudulent Practice² means a misrepresentation of facts in order to influence a procurement process or the execution of contract to the detriment of the NiXi-CsC and includes collusive practice among bidders (prior to or after bid submission) designed to establish bid prices at artificial non-competitive levels and to deprive the NiXi-CsC of the benefits of free and open competition.

The NiXi-CsC reserves the right to reject a proposal for award if it determines that the bidder recommended for award has engaged in corrupt or fraudulent practices in competing for the contract in question.

The NiXi-CsC reserves the right to declare a firm ineligible, either indefinitely or for a stated period of time, to be awarded a contract if at any time it determines that the firm has engaged in corrupt or fraudulent practices in competing for or in executing the contract.

LIMITATION OF LIABILITY

Bidder's aggregate liability under the contract shall be limited to a maximum of the contract value. This limit shall not apply to third party claims for

- a. IP Infringement indemnity.
- b. Bodily injury (including Death) and damage to real property and tangible property caused by Bidder/s' gross negligence. For the purpose of this section, contract value at any given point of time, means the aggregate value of the purchase orders placed by NiXi-CsC on the Bidder that gave rise to claim, under this RFP.
- c. Bidder shall be liable for any indirect, consequential, incidental, or special damages under the agreement/ purchase order.

PREVIOUS TRANSGRESSION

The BIDDER declares that no previous transgression occurred in the last three years immediately before signing of this Integrity Pact, with any other company in any country in respect of any corrupt practices envisaged hereunder or with any Public Sector Enterprise in India or any Government Department in India that could justify BIDDER 'S exclusion from the tender process.

The BIDDER agrees that if it makes incorrect statement on this subject, BIDDER can be disqualified from the tender process or the contract, if already awarded, can be terminated for such reason.

Fall Clause

The BIDDER undertakes that it has not supplied/is not supplying similar product/systems or subsystems at a price lower than that offered in the present bid in last 1 year, in respect of any other Ministry/Department of the Government of India or PSU and if it is found at any stage that similar product/systems or subsystems was supplied by the BIDDER to any other Ministry/Department of the Government of India or a PSU at a lower price, then that very price, with due allowance for elapsed time, will be applicable to the present case and the difference in the cost would be refunded by the BIDDER to the BUYER, if the contract has already been concluded.

Facilitation of Investigation

In case of any allegation of violation of any provisions of this Pact or payment of commission, the BUYER or its agencies shall be entitled to examine all the documents including the Books of Accounts of the BIDDER and the BIDDER shall provide necessary information and documents in English and shall extend all possible help for the purpose of such examination.

Law and Place of Jurisdiction

This Pact is subject to Indian Law. The place of performance and jurisdiction is the seat of the BUYER.

Other Legal Actions

The actions stipulated in this Integrity Pact are without prejudice to any other legal action that may follow in accordance with the provisions of the extant law in force relating to any civil or criminal proceedings.

STATEMENT OF PURPOSE

NIXI-CSC Data Services Limited (hereby called/referred as “Issuer”) invites competitive sealed technical and commercial proposal from eligible, reputed, qualified organizations with sound technical and financial capabilities for Integration, Revamping, Supplying, Installation, Implementation, and Commissioning of Data Centre/Server Farm at TSDC Agartala, Tripura having previous experience in designing and successfully handling, similar type of projects for Data Centers /Companies /Institutes /Government /PSUs etc.

The Issuer proposes to facelift the existing Data Centre/ Server Farm so as to develop a 5000sq. ft (approx.) data center facility considering the growth requirement for next 7 years with the latest State-of-Art technology and design. This development should comply with latest Data Centre standards to provide High availability and connectivity of the hosted services at TSDC, resilient to outages, safety, and security. The successful bidder shall appropriately estimate and design a total solution for the Data Centre/ Server Farm, including but not limited to rack placement design with cooling solution (such as) Cold Aisle Containment (CAC), HVACs, In Row Cooling (IRC), passive Non-IT solution, and integration of these components/equipment with BMS/DCIM and existing MEPC infrastructure. The successful bidder shall refer this document to meet the expected requirements and further plan out an optimal solution. The bidder should also consider and propose the buyback of existing infrastructure (if any) that shall be replaced/modified/upgraded.

SCOPE OF WORK

The Scope of Work shall be with a single bidder, it is and will be the selected Systems Integrator (SI)/bidder’s complete responsibility to Supply, Install, Execute, Commission and Maintain the project until Go-Live (where the Data Centre becomes fully operational/available for end customers/Issuers use). The SI shall also be responsible for providing annual maintenance (AMC) for 7 years which is commenced after Go-Live, but not limited to the following:

This will be a comprehensive Maintenance, covering replacement/ repair of parts/items/equipment.

- The Systems Integrator (SI)/ Successful Bidder is advised to do a detailed site survey/site analysis/site visit before starting the execution and quoting the prices (as per the requirements). The Systems Integrator (SI)/ Successful Bidder are free to inspect the site prior to submitting their proposals.

- The Successful Bidder shall prepare detailed deployment design/plan documents (both hard and soft copy) and shall submit the same for approval and also do necessary changes required/listed/told/approved by the owners. The documents cover following, but not limited to-

- GFC drawings
- Equipment catalogue
- Data Sheet and manuals

- Equipment layout, Electrical drawings, connectivity diagrams
 - Power and AC layout
 - Standard Operating Procedures for every component.
- The Systems Integrator (SI)/Bidder must prepare the drawings and schedule after understanding the bid, the requirement of the client and then start work accordingly. The approval for the drawings to be taken before starting the work. All execution related drawings such as design drawings, shop drawings, coordinated drawings etc. must be prepared by the SI and submitted for approval before starting any work.
 - Post Implementation and testing, the final version of SLDs (Single Line diagrams) shall be created and submitted during handover
 - Supply of necessary components: The Systems Integrator (SI) shall supply the materials and equipment as required. In case, it is identified that certain components are required for necessary functionality but not included in the Tender BoQ, SI should include such equipment in the bid value, quote for them as “any other item.” The SI shall note that the specification provided is the minimum requirement and the SI shall procure better equipment if it is required to meet the service levels mentioned in this RFP.
 - Specification and make/model approval shall be sought by the bidder for all components proposed for the site before actual deployment of such items.
 - Supply, Installation, Integration and Commissioning of equipment/components/materials to be taken care by the Systems Integrator (SI). The Successful Bidder shall install, integrate, and commission the activities as per approved deployment design. All the work shall be done in a conscientious manner as per the guidelines and best industry practices. The system shall be subjected to inspection at various stages. Local regulation / codes shall be followed at all times. The Successful Bidder shall follow all Standard Safety Regulations, norms, and best practices while working.
 - The successful Bidder shall not cause any damage to the existing data center, Government buildings/other premises and the property and will perform restoration if any damage occurs. Trenches, path-cutting, etc. will be back-filled and restored to the original condition immediately after laying of the conduit/cable. The Successful bidder shall seal conduits, entrance holes and cut-outs where the cabling/wiring etc. has been installed with suitable sealing material.
 - The successful Bidder has to prepare and submit a delivery report including details of all components supplied. The authorities will validate the delivery report.
 - All Electrical work must be done as per prevalent rules/Act/ regulatory of state or central Govt whichever is applicable.
 - The selected bidder should take all necessary Statutory/ regulatory approvals from the respective authorities before commencement of the work.
 - The SI must prepare a pre-installation and a post-installation checklist and get the same approved from the consultant/ PMC/Issuer and install the equipment as per the agreed norms.

- The commissioning check list has to be prepared by the SI and an approval has to be sought.
- The SI must handover all the documents such as drawings, warranty certificate, manuals, data sheets to the client before Go-Live.
- The SI shall follow/abide Annexure III for accomplishing electrical work in the Data centre/ server farm.
- Earthing and grounding as per the requirement & Lightning Protection system must be done and each and every components/equipment has to be connected to an equipotential grid.
- Integration and/or Dismantling of existing setup (such as wiring, conduits, cable trays, plates, bolts, nuts, cutting rivets, welding, aluminium/gypsum partition, Doors, Windows, False ceiling, brick work, tile work and architrave, piping etc.) is under the scope of SI.
- The selected SI/bidder shall also dispose all debris/trash/dismantled materials/garbage/junk properly within 24 hours. No debris/ dismantled materials/trash etc. should be stored/placed/dumped inside the Data Centre or in the Building and shall be stored/placed/dumped/thrown at a designated spot/place/area provided by the Issuer/Owner etc.
- Any Mechanical, Electrical, plumbing, fabrication, trenching and civil work etc. required for fulfilling ~~integration~~ between any other components/other SI/contractor for the development of the data center/ server farm shall be in the scope of SI.
- Any painting/putty/denting/retouch/civil work/damage repair required after installing and commissioning of the data center/server farm as per the scope of work shall be undertaken by the bidder/SI. The paints used shall be fire retardant/proof.
- Any removal/upgrading/modifying of floor tiles ceiling tiles etc. required in the data center facility shall be undertaken by the bidder/SI and shall be restored after necessary work completion to original quality levels
- The electrical (related to power supply, usage, distribution) work of the racks shall be done in accordance/consideration of critical load going to ~800Kw in the future.
- The scope of work for all the rooms situated in the data center facility with overall perspective to Non-IT components/equipment shall be undertaken by the bidder/SI.
- The piping, wiring, sensors etc. for all the Non-IT components/equipment (such as VESDA, RR, WLD, GAS SUPPRESSION etc.) shall be done under the false/raised floor for monitoring the inside area of the CACs. The same shall be done under the false/raised floor or above the false ceiling for monitoring the outside area of the CACs.
- The telecom, the staging room (plus any other room that has direct relatedness/association with the server farm) situated in the data center facility shall be surveyed and new design with the approval of the Issuer, shall accordingly redesign/revamp/modify/upgrade/replace etc. The bidder/SI shall undertake this scope and bid accordingly.
- Procurement of switches Multi Transfer Switches for connection of the Data center rooms with BMS/DCIM shall be under the scope of SI.
- For additional information/overall view for the data center/server farm and its supporting rooms (such as staging room, telecom room etc.) refer to Annexure I.
- For the information regarding existing components/equipment in the data center facility refer to Annexure II.

- Data Centre (DC)/Server farm/room

Development of DCs server farm with following requirements (but not limited to) shall be under the scope of SI.

1. Minimum of 76 IT Racks
2. IT Racks accessories and management.
3. HVACs/PACs/IRC
4. CACs
5. Non-IT components/equipment (VESDA, RR, WLD, CCTV, GAS SUPPRESSION, FIRE ALARMSYSTEM etc.)
6. BBT
7. Integration with DCIM/BMS etc.
8. Mechanical, Electrical, Plumbing and Civil work

- Telecom Room

Development of DCs telecom room with following requirements (but not limited to) shall be under the scope of SI.

1. Minimum 2 Telecom Racks, 800X800 / 800X1000
2. Telecom racks accessories and management.
3. HVACs/PACs (refurbishing/upgrading/modifying/replacing of the existing)
4. Non-IT components/equipment (VESDA, RR, WLD, CCTV, GAS SUPPRESSION, FIRE ALARM etc.)
5. Integration with DCIM/BMS etc.
6. Mechanical, Electrical, Plumbing and Civil work

- Staging Room

Development of DCs staging room with following requirements (but not limited to) shall be under the scope of SI.

1. Minimum 2 Staging Racks
2. Staging racks accessories and management.
3. HVACs/PACs (refurbishing/upgrading/modifying/replacing of the existing)
4. Non-IT components/equipment (VESDA, RR, WLD, CCTV, GAS SUPPRESSION, FIRE ALARM etc.)
5. Integration with DCIM/BMS etc.
6. Mechanical, Electrical, Plumbing and Civil work.

- Miscellaneous

1. The SI will be responsible for the O&M of the newly Directly procured items by NiXi-CsC and the scope to maintenance, managing, cabling, fixing, termination of cables, etc. shall fall under the scope of SI.
2. The SI shall not add/consider the cost for the Directly procured items by NiXi-CsC in the bid submission.

3. The SI will go through the specs of the direct procurement and take into consideration (but not limited to) the tools, Wires, cables, fabrication, piping, fuel tank etc for smooth installation and working of the products directly procured.
 4. The SI shall refer/contact NiXi-CsC for more information and clarity of the Direct Procurements.
 5. Bidder shall carry out the entire work of erection, testing and commissioning of equipment supplied under this package and performance and guarantee tests to be conducted at the site and included under the scope of direct procurement specification.
 6. Under Direct procurement: NiXi-CsC will directly procure Diesel Generators, UPS and batteries, ISP connectivity, Video Wall and controller and Workstations (for NOC, SOC) along with their AMC. The SI is responsible to take charge of these procurements and take responsibility for O&M for 7 years including engagement with OEM Partners for all related equipment's O&M for 7 years.
 7. NiXi-CsC holds the right to change the specifications of the Direct procurement, regardless of that the bidder shall cater the O&M (as mentioned above) of the Directly procured items.
- Tender Committees who are expert on Non-IT infrastructure will be formed by NiXi-CsC and they will give acceptance on the (but not limited to) MEPC work done, deliverables, audit, etc.

DIRECT PROCUREMENTS

1. DG: DIESEL GENERATOR

OBJECTIVE

The objective is procurement of two new 500Kva Diesel Generators sets (DGs). The new Diesel Generators sets requires coupling and syncing with the existing two old Diesel Generators sets to produce a total of 560Kw power load for fulfilling the desired power load of ~511Kw. The Old DGs and New DGs need to be coupled and synced together to provide the preferred power capacity of 700Kva (500Kva + 200Kva). The synced DGs sets are to be configured and used in in N+N configuration. Due to space constraint, the placement/stacking/fabrication of the DGs (old+ new) to be done in such a way that if in future the old DGs need to be removed and upgraded with higher capacity DGs can be achieved with minimum hinderance.

DIESEL GENERATOR (DG) SET WITH ACOUSTIC ENCLOSURE

SCOPE

The design, implementation, installation, testing, commissioning, and performance of equipment and all its components that has been covered in this Specification shall comply / confirm to all currently applicable Standards. The Power Generation set shall be a fully integrated power generation system, providing optimum performance, reliability, and versatility for stationary

standby, "continuous power" duty applications. The generator set shall have CE / uptime certification. All products shall be designed to meet latest standards.

The supply and installation of 500Kva/400Kw and making Alternator suitable for continuous operation rated at 1500 rpm, 415V, 0.8 PF, 3 Phase, 50 Hz Continuous Power (Data Centre Continuous – DCC) rated Diesel Generator in SPDP enclosure, self- excited & self- regulated, Brush less, floor mounted with Ball or Bearings on end shields. The alternator efficiency should be as per IS 4722 & IEC 34-1 standards & will be suitable for tropical condition. This specification covers the requirements for manufacture, supply, loading, packing, Transportation, unloading, installation, testing, and commissioning of a DG Set, for generating electric power by suitably adopting Energy conservation Measures. Scope also includes all required clearance and approval from local authorities. In-case of Raw power failure the DGs are expected to start within one minute. The automatically switching to DG power in case of raw power failure to be managed by the ATS/ switchgear panels.

SPECIFICATIONS

ENGINE:

The diesel engine shall be of robust type with suitable BHP, cylinders, totally enclosed, continuous duty, direct fuel injection, turbo charged compression ignition, complete with its self-contained lubricating system. Engine and alternator shall be mounted on MS base frame structure. The base frame shall be treated for rust formation and shall be painted with one coat of primer and two coats of heat resistant paint. The base frame shall be fixed over anti-vibration mounts with proper spacing such that the static and dynamic load of DG is uniformly distributed to the foundation. The Genset rating proposed should be Data Centre Continuous Rating meeting uptime requirement of a Tier III and Tier IV Data Centre. The Proposed DG set should be capable to run for unlimited hours of operation at its full capacity for Data Centre application whilst supplying a constant electrical load when operated for an unlimited number of hours per year under the agreed operating conditions.

ENGINE COOLING:

The engine shall be liquid-cooled through radiator. The Blower fan and cooling liquid circulation pump shall be engine driven. Supply and Installation of all items associated with engine cooling system shall be in the scope of Bidder.

Major components of the Engine shall be as below:

- Fly wheel with starter ring
- Electronic Governor
- V belt driven liquid circulation pump
- Lube oil cooler
- Oil bath/Dry type air cleaner
- Residential Exhaust silencer
- Fuel lift pump
- Belt tensioning unit

- Fuel filter & lube oil filter
- 12/24V electric starting system with starter and battery/batteries
- Electrical start arrangement
- Hour Meter
- Engine control panel consisting of ON/OFF/ START Key, lube oil pressure gauge,
- Ammeter, liquid/water temp indicators.
- Belt guard & coupling
- Radiator with expansion tank.
- Battery
- Engine driven battery charges
- Base frame for Mounting Engine and alternator
- Earthing/Grounding.
- Other accessories as per OEM recommendation.

FUEL SYSTEM:

The engine shall be capable of running and delivering rated load on high-speed diesel normally available in India. The injection of fuel should be through injection mechanism as per OEM design for getting output of 400kWe @ 0.8PF electrical output. The Vendor should declare the fuel consumption of the Diesel Generator at 100% and 75% loads.

DAY TANK:

A fuel day tank shall be provided on a suitably fabricated steel platform. The tank shall be fabricated out of 2mm thick MS Sheet, complete with level indicator, marked in litres, filling inlet with removable screen, an outlet, a drain plug, an air vent, and necessary piping. The fuel tank shall be painted with oil resistant paint. The Day tank shall be provided with the following features:

1. Diesel filling lid with pad lock and key arrangement
2. Drainpipe with ball valve
3. Silica gel breather (or as recommended by OEM)
4. Level gauge for level indication
5. Fuel level sensor with wiring and terminal arrangement.

ALTERNATOR:

415V, 0.8pf alternator shall be Self-ventilated, Screen protected & drip proof, Salient pole, Brushless & Revolving field type, Self-excited & Self-regulating type. The main and exciter winding shall be Class H insulated. The exciter shall be capable of forcing the field for 3 seconds in the event of short circuit fault at generator terminal. The rectifier shall have in built protection for over voltage. All other parameters shall be as specified in the data sheet and conforming to codes and standards specified in the data sheet or relevant standards. Alternator shall be capable of handling Data Centre loads safely without any change in performance, due to the heavy harmonics induced

along with excess neutral currents. Cable adopter box of suitable size shall be provided for offered DG.

AUTOMATIC VOLTAGE REGULATOR:

The automatic voltage regulator (AVR) shall be digital type AVR to provide fast response with respect to change in load, it should provide digital governing with digital isochronous synchronization.

INTEGRATED CONTROLLER:

The Genset controller should be an integrated microprocessor-based generator set controller providing monitoring, metering, and control system. The control provides an operator interface to the Genset, digital voltage regulation, digital governing, and generator set protective functions. The integration of all the functions into a single control system provides enhanced reliability and performance compared to conventional control systems.

CONTROL:

1. Run/ Off / Auto switch
2. Emergency stop
3. Manual Run / Stop Control switch
4. Idle / Run mode control

ENGINE METERING:

1. Starting Battery Voltage
2. Lube Oil Pressure
3. Engine Coolant Temperature
4. Coolant Pressure
5. Engine Rpm.
6. Operating Hours.
7. Number of Starts.
8. ELECTRICAL METERING
9. Current
10. Voltage
11. Frequency
12. KW
13. Power Factor (PF)
14. KVA
15. PROTECTION / WARNING ENGINE
16. Over Speed Shutdown
17. Low Lube Oil Pressure Warning /Shutdown
18. High Coolant Temperature Warning / Shutdown
19. Low Coolant Temperature Warning
20. Low Coolant Level Warning. / Shut Down
21. Low and High Battery Voltage Warning
22. Weak Battery Warning

23. Over Crank Shutdown
24. Fail to Crank Shutdown
25. ALTERNATOR
26. Over Current
27. High Voltage
28. Low Voltage
29. Under / Over Frequency
30. Reverse Power (KVA & KVAR)
31. Phase Sequence
32. SPECIAL FEATURE
33. Digital AVR
34. Amp Sentry Protection
35. Sensor Failure Indication
36. Programmable Idle Speed Control
37. Digital Synchronizing Function
38. Sync Check
39. Synchronoscope
40. Auto Load Sharing
41. Compatibility to Remote Monitoring.
42. Smart Starting

GENERAL DESIGN CONSIDERATION:

The purpose of designing all electrical equipment, following ambient conditions shall be taken into consideration.

Avg. Ambient temperature: 26-degree C.

ENGINE EXHAUST SYSTEM:

Exhaust system should create minimum backpressure. The exhaust backpressure should be within acceptable limit. However, it should be within the limits suggested by engine manufacturers to suit performance of the engine. Use of thimble is must while passing the pipe through concrete wall. The clearance around the pipe and wall is must for free movement and expansion/contraction of piping.

Exhaust piping should be lagged LRB rock wool of proper density along with aluminium sheet cladding to avoid heat dissipation. The thickness of lagging should not be less than 50mm. Exhaust piping shall be suitably supported and padded to avoid damage to thermal insulation. Aluminium cladding should be with aluminium sheet or with minimum 24 SWG thickness.

Exhaust flexible shall have its free length when it is installed. The exhaust outlet should be in the direction of prevailing winds & should not allow exhaust gases to enter air inlet/windows etc. There should be a rain trap to avoid rainwater entry. If rain cap is used the aperture between exhaust pipe & rain cap should be higher than diameter of pipe. It is also recommended that horizontal run of exhaust piping should have slope downwards away from engine towards the condensate trap. Silencer should be installed with drain plug at bottom. Silencer should be provided in the engine exhaust pipe. The design and location of the silencer shall meet the requirement of backpressure. The flue gases from silencer shall be taken out to atmosphere

through metallic, thermally insulated, and clad chimneys. These chimneys shall be made from M S class 'B' piping system conforming to IS 3589. Required flexible bellows, bends, expansion joints, load support etc. shall be provided as required. The exhaust chimney shall be insulated with minimum 100 mm thick thermal insulated glass wool/mineral wool up to silencer. The insulation should be held in position using wire chicken mesh. 24-gauge aluminium cladding sheet should be wrapped over exhaust pipe starting from engine up to the chimney top.

STARTER SYSTEM:

Starting battery sets of 12/24 V, heavy-duty high performance approved make/quality shall be provided to enable crank & start the engine even in cold/winter morning conditions. Type/voltage/AH capacity of the same shall be indicated in the offer. The battery shall be capable of performing at least (3) three normal starts without recharging. Batteries shall be Maintenance Free Type. The battery shall be provided with 2 nos. cables, min 1.5 m long heavy-duty rubber/PVC insulated cabling with brazed tinned lug at one end and with brazed tinned brass terminal lug at battery end - for connecting batteries to cranking system - with 0.25 m long inter battery connecting cable. The lugs shall be clearly stamped + or - and positive cable should be red sleeved for easy identification. The batteries shall be supplied fully charged and ready to use.

SUBMITTALS:

The following documents, drawings etc. shall be provided:

- Operation and maintenance manual for Engine, Alternator.
- Technical document of Engine/Alternator
- Detailed part list for all components
- Schematic diagram of engine control panel with accessories like AVR on details etc.
- Single line diagram for the entire system – control and power
- Detailed specification sheet for all auxiliary components giving material
- Specifications, make / model, capacity, rating etc.
- Foundation details.
- Recommended Spare parts list for One-year normal operation
- Routine Service charts
- GA drawings & layout of offered products.

PERFORMANCE REQUIREMENT:

The D.G. set shall operate up to 100% of load, without undue vibration and noise. The unit shall be capable of delivering rated output at 0.8 PF. at the generator terminals (after rerating of the engine due to site conditions). Warranty against manufacturing failure of 5 Major components comprising of Crank Shaft, Cam Shaft, Cylinder Head, Cylinder Block and Connecting Rod for 5 Years or 5000 Hrs whichever is early. The product shall have best in class fuel efficiency. Vendor shall submit their guaranteed fuel consumption figures at 100% load & 75% load for op-ex evaluation. All major performance components of DG sets like engine, alternator, engine components, Controller, Radiator, Battery etc shall preferably be from the same principle manufacturer in order to have single window warranty & service support.

TESTING:

The following tests shall be carried out at the Bidders works for the assembled DG Set in Presence of Consultants / Clients. Test on Assembled unit at Manufacturer's work:

The Bidder shall carryout successfully on load test run in all completely assembled DG Sets for one hour at 100% load at DG manufacturers works prior to dispatch in presence of client's / owner's representatives.

The Test Certificates to be submitted to the Consultant for pre-dispatch acceptance. The bidder shall submit the routine test certificates along with delivery of DG set. Bidder shall submit two sets of as built drawings, operation and maintenance Manual, Spare parts manuals of all components duly certified by the consultants after Installation. Tests on Control Panel Insulation resistance test, Functional and operation test to be done before dispatch from panel works. The Test Certificates to be submitted to the Consultant for pre-dispatch acceptance. Testing at site Erection, testing, commissioning, and performance & guarantee tests/procedure at site.

INSTALLATION OF DG SET:

Bidder shall carry out the entire work of erection, testing and commissioning of equipment supplied under this package and performance and guarantee tests to be conducted at the site and included under the scope of this specification. For this purpose, the bidder shall depute suitable qualified technical supervisor to site on advance intimation to the Owner along with all special testing equipment required for testing and performance and guarantee tests. The supervisor(s) shall be responsible for the installation, testing, commissioning checks and performance & guarantee tests mentioned in relevant clauses of this volume and the checks recommended by the bidder. The bidder shall provide all tools, equipment has, and instruments required for installation, testing, and commissioning. (Load & diesel shall be provided by purchaser and later reimbursed).

The bidder shall be required to carry out any fabrication/stacking/placement of the DGs as deemed fit for aligning them in an optimal way to fit in the available space provided at the location. The bidder shall ensure that the equipment's supplied by him are installed in a neat workman like manner such that they are levelled, properly aligned, and well oriented. The tolerances shall be established in Bidders drawings and/or as stipulated by the Owner. The bidder should supply all special tools, tackles, and spares required for erection, testing, and commissioning of equipment. Erection, testing and commissioning manuals and procedures should be supplied with the equipment.

The bidder shall ensure that the drawings, instruction, and recommendations are correctly followed while handling, setting, testing, and commissioning the equipment.

COUPLING & SYNCHRONIZATION OF DG SET:

The bidder shall ensure that the desired power load is delivered by testing the coupled and synchronized DG sets (old + new coupled DG set). To achieve desired performance sync panels, need to commission with the existing DGs and the newly procured DGs.

AMC OF DG SETS:

The Bidder shall provide 7 years AMC to the new DGs and will also provide AMC for the exiting DGs (and for the entire coupled solution) that will cater the desired power load.

EXTRA PROCUREMENT REQUIRED:

The bidder shall either upgrade and or augment and or rearrange the existing LT, HT, ATS Panels for the desired upgraded load or Procure new LT, HT panels to cater the desired load for the same.

The procurement shall also include (but not limited to) the tools, accessories, cables, MCBs, etc. shall also fall under the scope of the Bidder.

UPS AND BATTERIES

OBJECTIVE

The objective is procurement of a highly efficient 40Kva capacity Uninterruptible Power Systems (UPS) for powering the Non-IT components/equipment. The batteries which will be deployed/installed for the UPS (new or existing) for giving backup power to the data centre for protecting the IT and Non-IT components/equipment installed in the data centre from an immediate failure/blackout.

2. UPS AND BATTERIES FOR NON-IT COMPONENTS/EQUIPMENT

SCOPE

The supply, installation, testing, and commissioning of true online, double conversion, highly efficient, and having high-power factor ($PF \geq 0.9$) Uninterruptible Power Systems (UPS) 40 kVA/36kW. The Bidder will also cater the supply, installation, testing, and commissioning of battery backup support with SMF/VRLA batteries for 15 Minutes backup for providing the 36Kw power load (at 0.9 power factor) for fulfilling the desired power load of ~32.667Kw. The backup batteries should be supplied with the necessary arrangements for mounting separate battery rack / cabinet [including battery circuit breaker, battery Rack, interconnecting cables from battery to battery and from UPS to Battery Bank and all other materials as required and initial charging]. The battery backup support will be in modular mode/ hot swappable for easy replacement (without putting the UPS in bypass operation mode). The warranty on SMF batteries will be for 3-5 years from date of virtual completion of the work.

The bidder shall either upgrade and or augment and or reuse the existing UPS and batteries for the desired upgraded load or for some other in the TSDC or Procure new UPS and batteries to cater the desired load for the same. The procurement shall also include (but not limited to) the tools, accessories, cables, MCBs, etc. shall also fall under the scope of the Bidder

SPECIFICATIONS

UPS SYSTEM - TECHNICAL SPECIFICATIONS:

- GENERAL
 - Efficiency: >98% High-efficiency mode & >94% Double-conversion mode.
 - Overload: 150% for 1 minute, 125% for 10 minutes & >150% for 150ms
 - UPS bypass: Automatic on overload or UPS failure
 - Parallel technology: Hot Sync® Technology
 - Cabinet rating: IP20 with standard washable dust filters
- COMMUNICATIONS & COMMUNICATIONS ACCESSORIES
 - Display: Graphical LCD with blue backlight

- LEDs: (4) LEDs for notice and alarm
 - Audible alarms: Yes
 - Communication ports: (1) RS-232, (1) USB, (1) EPO
 - Communication slots: (2) Mini-slot communication bays
 - Network-MS: Web/SNMP Card
 - Modbus-MS: Web/SNMP and Modbus Card
 - Relay-MS: Relay (Dry Contact) Card -DB9 Connection
 - Industrial Relay: Relay (Dry Contact) Card -Terminal Connection
 - 116750224-001: Environmental Monitor Probe (EMP) kit (need to plug into Web/SNMP Card or Web/SNMP and Modbus Card to work)
- POWER & ELECTRICAL RATINGS
 - Ratings: 40kVA/36kW
 - Topology: Double-conversion online UPS
 - Operating frequency: 50/60 Hz (40 to 72 Hz)
 - Input power factor: >0.99 typical
 - Input current distortion: ≤5% THD.
 - Nominal input voltage: 400/230V, 4 wire (380/415V selectable).
 - Input voltage range: -15%, +20% from nominal (400V) at 100% load without depleting battery.
 - Nominal output voltage: 400/230V, 4 wire (380/415V selectable)
 - Output voltage regulation: ±1% Static; <5% dynamic at 100% resistive load change, <20ms response time.
 - Earthing principle (if required): [TN-S] [TN-C] [TT] or [IT].
- WORKING ENVIRONMENT & CERTIFICATIONS
 - Operating temperature: 0°C to +40°C, Batteries recommended max. +25°C
 - Storage temperature: -25°C to +55°C without batteries & +15°C to +25°C with batteries
 - Relative humidity: 5-95%, non-condensing
 - Audible noise: 40kVA ≤62 dB(A) at 1m typical
 - Altitude: <1000m at +40°C
 - EMI standards: EN55022/EN55024
 - EMC compliance: IEC 62040-2
 - Quality: ISO 9001: 2000 and ISO 14001:1996

MODES OF OPERATION:

- *Normal*: The UPS system shall continuously work in Double Conversion method, which is when the rectifier shall convert input AC supply to DC and also providing battery charging current to Batteries and then Inverter Section shall convert the DC to AC output supply and feed to the critical load.
- *Battery*: Upon failure of the utility AC power source, the critical load shall be supplied by the inverter, which, without any interruption, shall obtain its power from the battery.

- *Recharge*: Upon restoration of the utility AC power source (prior to complete battery discharge), the PFC rectifier shall power the inverter and simultaneously recharge the battery.
- *Static bypass*: The static bypass switch shall be used to transfer the load to the bypass without interruption to the critical power load. This shall be accomplished by turning the inverter off. Automatic re-transfer or forward transfer of the load shall be accomplished by turning the inverter on.
- *Maintenance bypass*: In maintenance bypass the load is supplied with unconditioned power from the manual maintenance bypass input switch provided in a separate enclosure with each UPS.
- *Static Bypass operation with Power Factor Improvement & Harmonic Mitigation*: UPS shall be capable to mitigate Harmonics (THDI) to < 5% and Power Factor Improvement to 0.99 at full load while UPS is operating in Static Bypass. The UPS vendor may supply active harmonic filter in UPS bypass path if this is not a standard feature available in the UPS. The overall Efficiency of UPS & active filter shall be $\geq 98\%$ from 50% loading to 100% loading condition in bypass operation.

MECHANICAL:

- The UPS shall be housed in a freestanding cabinet with/without caster (depending as per purchasers' requirement)
- Dust filter & Rodent Mesh shall be provided with the UPS Frame.
- Top & Bottom Cable Entry shall be provided with the UPS.
- The cabling section shall be large enough to accept Copper and Aluminium cables as well. In case Aluminium Cable termination is not possible, vendor to provide separate cubicle/box with input & output bus bars to terminate aluminium/copper cable with each UPS module.
- The UPS shall be provided with minimum IP20 ingress protection.
- Forced Air Cooling: Redundant cooling fans shall be provided in each sub-module of the UPS so that one fan failure in each sub-module of the UPS does not result into degraded operation of the UPS.
- Coloured Touch Screen at the front displaying data shall be provided.
- Built In / External Energy Meter shall be provided to display kWh consumption at input & output.
- Conformal Coating: Critical components like PCBs in UPS shall be conformal coated for protection against dust and other environmental conditions.

BATTERY BACKUP:

- The UPS battery shall be sized for 15 minutes backup. So adequate battery with
- Type of Battery: SMF/VRLA Battery
- Each battery cabinet/rack shall feature a DC rated circuit breaker for control and protection against
 - Over / Under Voltage
 - Over / Low temperature
 - Over Current

- Short Circuit
- The circuit breaker within the battery cabinet shall only provide protection to the battery string within that battery cabinet/rack.

AMC OF UPS and SMF BATTERIES:

The Bidder shall provide 7 years AMC of the new UPS and batteries that shall be procured for catering the desired Non-IT power load.

BATTERIES AND AMC FOR EXISTING UPS: IT LOAD/COMPONENTS/EQUIPMENT

REPLACING SMF BATTERIES:

The two existing 200Kva capacity UPS working in N+N configuration (400Kva Total) are catering the IT infrastructure which shall require replacement of their existing SMF batteries. The existing two UPS comprises of 136 batteries (68 batteries/UPS). The Bidder shall analyse, check, and will need to be replace those existing batteries with new SMF/VRLA batteries if deemed necessary. The existing battery is a SMF/VRLA battery having a specification of 12V 200Ah.

AMC OF UPS and SMF BATTERIES:

The Bidder shall provide AMC of the existing UPS and new batteries that shall be procured for catering the desired IT power load.

3. ISP

OBJECTIVE

The objective is procurement of multiple (two) ISP networks comprising of a dedicated internet connection to manage the network traffic and act as the backbone connection for the data centre. The data centre will have two ISP network connections to maintain network traffic redundancy. In case of failures of any ISP, the network traffic can be switched to the other ISP to maintain continuous service for the clients of the data centre.

SCOPE

Internet Service Provider (ISP) services from qualified Vendors to provide a dedicated Internet connection for the Data Centre which may include (but not limited to) physical networking infrastructure (e.g. Fiber), connections for two separate ISPs to the Data Centre, Internet speeds of 1 Gbps scalable up to 10 Gbps Internet connection of enterprise-class quality, secondary DNS, bandwidth data for utilization reporting, maintenance and 365x24x7 technical support and other ISP related services. A minimum service availability of 99.99% is to be maintained throughout the duration for which the services are procured.

4. VIDEO WALL AND CONTROLLER

OBJECTIVE

The objective is procurement of video walls (panels) for providing data management solution, data visualization solution, solution for network operations and solution for security operations in a Data Centre. The primary objective of video walls is to highlight critical information on the screen for operators, which is essential to understand the types of data that could be important for both standard operations and emergency situations. A controller can help in setup of the display panels to form a single large screen or a variation of multiple screens in different layouts (what you want to see, how you want to see.)

SCOPE

The supply, installation, testing, and commissioning of high-quality 55" display panels together in a fixed configuration display layout (e.g., 2x2/ 3x2/ 3x3 etc.). The large monitoring screen attained after combining the display panels with the help of controller (a switch matrix) in different configuration and orientation shall cater in displaying the critical information of the Data Centre.

SPECIFICATION

5. VIDEO WALL - TECHNICAL SPECIFICATIONS:

a. PANEL

- Diagonal Size: 55"
- Type: IPS
- Resolution: 1920*1080 (Full HD)
- Pixel Pitch(mm): 0.63mm(H)*0.63mm(V)
- Active Display Area(mm): 1209.6 * 680.4 mm
- Brightness (Typ.): Max 500 nit
- Contrast Ratio: 1200:1

b. DISPLAY

- Dynamic C/R: 45,000:1
- H-Scanning Frequency: 62.7kHz ~ 72.3kHz
- V-Scanning Frequency: 57Hz ~ 63Hz
- Maximum Pixel Frequency: 82MHz

c. CONNECTIVITY

- For Input
 - RGB: DVI-D, Display Port 1.2
 - Video: HDMI 2.0 (2)
 - HDCP: HDCP 2.2
 - Audio: Stereo mini-Jack
 - USB: Only F/W upgrade
- For Output
 - RGB: DP1.2(Loop-out)
 - Audio: Stereo mini-Jack
- External Control: RS232C (in/out), RJ45
- External Sensor: Detachable type (IR)

d. POWER

- Type: Internal
- Power Supply: AC 100 - 240 V, 50/60 Hz
- Power Consumption
 - Max[W/h]: 220
 - Typical[W/h]: 136

- BTU(Max): 825
- Sleep mode: less than 0.5W
- Off mode: less than 0.5W

e. MECHANICAL SPECIFICATION

- Dimension (mm)
 - Set: 1213.5 x 684.3 x 73.1
 - Package: 1398 x 844 x 257
- Weight (kg)
 - Set: 21.2kg
 - Package: 28.8kg
 - VESA Mount (mm): 600 * 400 (mm)
 - Bezel Width (mm): 2.3mm(U/L), 1.2mm(R/B)

f. OPERATION

- Operating Temperature: 0 °C ~ 40 °C
- Humidity: 10 % ~ 80 %

g. FEATURE

- Key Features: Ultra Narrow Bezel
- Orientation : landscape/portrait
- Remote Control: N/A
- Special Features: ACM Support (Advanced Colour Management), Auto Source Switching & Recovery, Haze 28%, Temperature Sensor, RS232C/RJ45 MDC, Plug and Play (DDC2B), Video Wall(15x15(OSD)), Video Wall Daisy Chain(10x10), Pivot Display, Image Rotation, Button Lock, DP 1.2 Digital Daisy Chain (Supporting UHD Resolution, HDCP support), Smart F/W update, Clock Battery (168hrs Clock Keeping) IP5X tested, EMC Class A, Centre IR

h. CERTIFICATION

- Safety: UL (USA): UL 60950-1 CSA (Canada): CSA C22.2 No. 60950-1 TUV (Germany): EN60950-1 NEMKO (Norway): EN60950-1 KC (Korea): K60950-1 CCC (China): GB4943.1-2011 PSB (Singapore): IEC60950-1 GOST (Russia): IEC60950-1, EN55022 SIQ (Slovenia): IEC60950-1, EN55022 PCBC (Poland): IEC60590-1, EN55022 NOM (Mexico): NOM-019-SCFI-1993 IRAM (Argentina): IEC60950-1 SASO (Saudi Arabia): IEC60950-1
- EMC: FCC (USA) FCC Part 15, Subpart B class B CE (Europe) EN55022, EN55024 VCCI (Japan) VCCI CISPR32:2016 KCC (Korea): KN32, KN35 BSMI (Taiwan): CNS13438 (CISPR22) C-Tick (Australia): AS/NZS CISPR32:2015 CCC(China): GB9254-2008, GB17625.1-2012
- IP Rating: IP5X

i. ACCESSORY

- Included: Quick Setup Guide, Warranty Card, DP cable, stereo to DB9 cable, Power Cord, Remote Controller, Batteries, External IR
- Optional

- Stand: N/A
- Mount: WMN-55VD
- Specialty: N/A

j. MEDIA PLAYER

- Media Player: Signage player box

VIDEO WALL - AMC:

The Bidder shall provide AMC/WARRANTY for at least 5 years of the VIDEO WALL solution that shall be procured for monitoring the desired Data Centre load.

WORKSTATION

OBJECTIVE

The objective is procurement of workstations for managing the network operations, security operations and management operations required for a Data Centre. The visible data/information gathered on the video wall needs to monitor, assess, processed, visualized, and responded accordingly to a variety of threats/conditions. For carrying out these computational functions on the data the workstations are required.

SCOPE

The supply, installation, testing, and commissioning of 10 workstation for managing the server room/farm which are controlled/managed/maintained in the NOC room and SOC room in the Data centre.

SPECIFICATION

WORKSTATION - TECHNICAL SPECIFICATIONS:

- PROCESSOR: 11th Generation Intel® Core™ i5 (Intel® Core™ i5-11500HE Processor (12M Cache, up to 4.50 GHz)
- RAM: 16GB (DDR4 2666 MHz)
- HARDDISK: 1TB [1TB Up to 3,500 MB/s PCIe 3.0 NVMe M.2 (2280) Internal Solid-State Drive (SSD)]
- HARDDISK TYPE: SSD/HDD
- DESKTOP CPU TYPE: TOWER CPU
- GRAPHIC: NVIDIA GeForce or AMD Radeon with min 2GB graphics with min resolution 3840x2560 @60Hz.
- I/O ports: Minimum 1xUSB 3.0, 2xUSB 2.0, 1 RJ45, 1 VGA, min. 1 HDMI interface and standard audio ports.
- ETHERNET: Integrated 10/100/1000 Gigabit Ethernet LAN.
- MONITORS: TWO 21" LED monitor mounted on a dual monitor desk stand. FHD 1920 x 1080 Ports: Min 1xHDMI, 1xDP & Energy Star complied.
- DESKTOP ACCESSORIES: MOUSE (wired USB OEM optical), KEYBOARD (USB OEM) ETC.
- OPERATING SYSTEM: Windows 10 Professional (64Bit) / Windows 11(64Bit)
- OTHER SOFTWARES: Commercial Antivirus (5-7 years subscription), Microsoft Office Professional Edition

WORKSTATION - AMC:

The Bidder shall provide AMC/WARRANTY for at least 5 years of the workstation solution that shall be procured for managing/monitoring/controlling the Desired Data Centre Solution.

RACKS

Designing, Supplying, Installing, Integrating, Commissioning, Testing etc. of the rack solution shall be in accordance with the following requirements and specifications:

1. General Requirements

- A detailed design/plan of the Rack solution enclosed in cold aisle containments (CACs) along with Precision Air Conditioners / In-Row Cooling (PAC/IRC) solution.
- The detailed rack design shall have a minimum of 64 compute racks, a minimum of 8 network racks and a minimum of applicable passive racks.
- Rack should have 100% assured compatibility with all equipment's conforming to DIN 41494 (General Industrial Standard for equipment's) or Equivalent EIA / ISO / EN Standard
- The Racks should be 2000mm in height with 800X1200 for Network/ Server application and 600X1200 for Server application.
- The total racks shall be placed in three bays (CACs) having six rows in total (2 rows in each CAC) as per the feasibility of the detailed design/plan.

2. Physical Specifications

- The Rack unit supported by Plinth should support a static load of at least 1,500 kg, total installed equipment weight.
- The Rack units should have a perforated front door and plain split rear Door.

3. Equipment Access & Installation

- The Rack should have 42U usable Space
- The Rack should have 4 No's adjustable, 19" verticals with punched 10mm square hole and Universal hole pattern offers greater mounting flexibility, with Numbered U positions
- The OEM should include Mounting hardware for equipment fixing
- The front and rear doors should be easily detachable and Easily Openable
- The doors of the rack should be reversible such that it can be mounted on either side.
- The racks should have side panels which can be removed with using minimum tools, using easy finger latches for fast access to cabling and equipment.
- Side panels should flush with the frame, so the overall width of the unit does not change with the side panels installed.
- OEM should include ganging kits for coupling racks
- In the Server racks the Cable management accessories and the PDU (Dual PDU for two power supply Input) should be flushed inside the Frame thus by leading to Easy passage of the Hot Air at rear side

4. Material Requirements

- All weight bearing components should be made from steel with a thickness not less

than 2.0

- mm, 19" equipment mounting angle should be 2.5MM and other parts not less than 1mm
- All sheet metal parts should be Pre-Treated, and powder coated meeting ASTM Standard.

5. Grounding Requirements

- All enclosure components i.e., frame, and door should be bonded together and to rack groundpoint
- OEM to provide rack ground point, Provision to further ground to Telecom Ground bus barSystem
- Grounding and bonding as per UL Standards
- Manufacture should provide Horizontal OR vertical Ground bus bar for equipment Grounding as per Customer / Tender Requirement

6. Certifications, Environmental and Safety Requirements

- Racks should be manufactured by ISO9001, ISO14001, ISO2700 & Certified company and should have proper EHS Policy. Copy of requisite documents/certificates, shall be provided along with rack supply
- Products must be UL Certified
- Products should comply RoHS Compliance
- Manufacturer must certify that the products are Comply DIN41494 and Equivalent EIA/ISO/EN
- /CEA Standard.
- The rack should comply minimum of IP 20 rating for protection against touch, ingress of foreign bodies and ingress of water.
- The enclosure should both protect the user from mechanical hazards and meet the requirements for a mechanical enclosure (stability, mechanical strength, aperture sizes, etc.) as defined in IEC 60950 Third Edition.
- Documentary proof of all these certificates, shall be provided along with rack supply

7. Ventilation and Thermal Management

- ☐ The Rack should have ventilated front and rear doors to provide adequate airflow required by the major server manufacturers.
- ☐ The Rack should provide the means to mount optional cooling accessories for high-density.
- ☐ The manufacturer should provide air seal kit and blanking panel kit to prevent the Recirculation of hot exhaust air.
- ☐ The Manufacture should provide Brushed cable entry and exit cut-outs to avoid cold air leakage

RACK PASSIVE CABLING AND ACCESSORIES

Supplying, Installing, Integrating, Commissioning, and Testing of the rack accessories that will be integrated to the racks in the data center shall consist of the following requirements and specifications (but not limited to):

Network Passive Infrastructure

- a. Copper cabling as per TIA/EIA guidelines
- b. Tier III complaint design
- c. 25 years certification
- d. Copper cabling will be through different cable tray / basket for all the racks.
- e. A separate wall mount / floor mount rack to be install at staging room for other area as Distribution Rack.
- f. All Server Racks to be supplied are 800mm x 1200 mm with castor wheel and Network Racks to be supplied are 800mm x 1000 mm. All are having perforated door and height will be 42U.
- g. Each rack will have two numbers of PDU/iPDU/metered PDU with 32 AMP MCB and industrial type socket.
- h. Each row has to be provisioned with a network cum passive rack.

A. General Specifications for Passive Components

1. All Fiber and copper cabling and components should be from same OEM
2. Cabling should have 25 years of performance warranty (Attach Warranty declaration along with the Bid)
3. All the minimum compliances required in the passive cabling infrastructure (but not limited to), operating temperature, insulation, Covers/protectors (against dust), etc.

CABLE MANAGEMENT

- For 42U 800 width Racks
 - The manufacturer should supply 2 No finger type cable management with detachable door for management of Horizontal Cables
 - 2 No 300mm Cable basket for management of Vertical Cables
- For 42U 600 width Racks
 - Rack should have 2 No of 220mm combo cable basket for cable routing and PDU mounting.

SECURITY

- The rack units shall be provisioned for Intelligent Locking feature. This feature shall

have the support for IP based accessibility/usability for future upgradation/incorporation.

- OEM should ensure that the Intelligent Locking feature should be incorporated on the door without any modifications to the Racks.

PDU's

- Each rack should have two PDU's. The PDU's should be connected to the two different UPS sources A and B individually. The two PDU's in each rack should have different chassis colour for identification of UPS source. The coloured chassis PDU's shall be configured in N+N configuration to maintain redundancy in the racks.
- Input cable of the PDU's must be minimum 3 meter-long, and the input industrial plug should be IEC60309.
- The PDU's should have colour coded outlets based on circuit colour for easy identification of circuits for quick troubleshooting and ease in maintenance. Also, all the three phase PDU's should have colour coded alternate phase outlets for simplified circuit/phase balancing and cable management.
- PDU's should support High Operating temperature up to 60°C to take care of high operating temperature at back of Rack.
- Provision for Power monitoring/metering on the PDU's. It shall be for the full PDU's/per port on the PDU's.
- The PDU's shall have following specifications:

Type Of PDU	Normal (PDU's)/ Non-Intelligent Metered / Intelligent (iPDU's)
Phase	3Phase
Rating	22KVA
Current	32A
No Of Outlets	Minimum 30 UL certified hybrid sockets (Compatible to both C13 and C19)
PDU Mounting	Vertical

OVERHEAD CABLE RUNNERS/BASKETS AND BBT (BUS BAR TRACK)

Supplying, Installing, Integrating, Commissioning, Testing etc. of an Overhead Cable Runners/BBT system in the data center shall consist of the following specifications:

Continuous bus track system for data center.

- General specifications

This specification details the electrical characteristics and general requirements for

a continuous open channel, low voltage bus bar system.

- The system shall be designed primarily for overhead distribution of electrical power.
- The bus bar must be an open channel system with continuous access to the power. Tap off boxes must be able to be inserted and removed anywhere along the length of the busbar.
- The bus bar system must be hot swappable i.e., tap off boxes can be added or removed without shutting down the bus bar.
- The Tap off Box should be capable of monitoring Voltage, Current, Power(kW) and kWh and should be capable of connecting to BMS system for reporting of power utilization per PDU.
- The system shall be designed primarily in N+N configuration, each powering one coloured chassis PDUs in the rack. Where each Rack is having a power capacity of up to 10Kw.
- The bus bar system comprising BBT connectors that shall power the PDUs should be compatible with Rack PDU connectors.
- The system shall be primarily designed to be able to cater maximum 800 Kw critical load, irrespective of using that much load.

- Standards

The busbar system, components and accessories shall be designed and manufactured to the following standards and guidelines:

- Low Voltage Directive 73/23/EEC including amendment 93/68/EEC
- Low Voltage Switchgear and Control Gear Assemblies, Part 1: Type Tested and Partially Type Tested Assemblies, IEC 61439-1:2011.
- Low Voltage switchgear and Control Gear Assemblies, Part 6: Busbar Trunking Systems, IEC 61439-2:2012
- Seismic qualification: UBC-1997, IBC-2015, CBC 2013, ASCE7-10 and IEEE693
- Impact Resistance: BS EN 62262:2002, Rating of IK10
- Arc flash protection: IEC/TR 61641:2014
- ASTA Certification
- Certificates for short circuit rating testing

Certificates from an accredited testing agency shall be made available along with the bid and certification should be of dated before the bid submission date.

- System Description

- Environmental Conditions

The busbar should be capable of operating in the following environmental conditions without mechanical or electrical damage, degradation, or derating of operating capability:

- Ambient Temperature for Electronic Components: 0°C to 50°C

- Relative Humidity: 0 – 95%, noncondensing
 - Altitude: Sea Level to 1220m
- Electrical specification

The busbar system shall perform as stated in this specification while supplying rated full-load currents as shown on the project drawings.

The bus bar system must comply with the following electrical specification and required certificates to be provided by the bidder.

- Available Current Ratings: 250A
- Earthing: 100% isolated earth via aluminium housing
- System Voltage: 600V
- System Voltage: 1000V
- Frequency: 50Hz or 60 Hz
- Short Circuit Rating:
 - l_{cw} = Rated short-time withstand current (rms) – Minimum 25 KA per secondRMS
 - l_{pk} = Rated peak withstand current (kA peak) – Minimum 52.5 KA
 - l_{cc} = Rated conditional short-circuit current (rms) – Minimum 50 KAIC

- Busbar Assembly

The manufacturer should recommend appropriate busbar lengths to meet the project requirements:

- The busbar should be available in lengths up to 4m with options of colours identification strip to help differentiate/identification of power source from different power sources.
- The busbar housing shall be constructed of an extruded aluminium shell and provide a 100% rated earth path. Steel housings shall not be permitted.
- The extruded aluminium housing shall be directly connected to the busbar hangers. The hangers shall not in any way interfere with the tap off installation.
- The manufacturer must supply appropriate hangers as per the project drawings.
- The busbar housing shall have an integral channel to accommodate monitoring/communication cables.
- The busbar conductors shall be continuous copper. Busbars shall be fabricated from high strength electrical grade Copper (C101 BS 1432/1433) 99.99% Purity to ETP 99.9
- The busbar conductors shall be sized to handle 100% of the busbar rating under continuous operation up to 50°C.
- The conductors shall be electrically isolated from the housing using IEC certified, halogen free, non-flammable thermoplastic material. The insulation must have excellent dielectric strength and impact resistance.
- The bottom of the busbar shall be a continuous open channel system with an Ingress Protection rating of IP2X.

- An end cap shall be installed at the end of a busbar run.
 - A joint pack shall be used to make electrical and mechanical connections between the busbar sections and end feeds. The fitting of this joint pack shall be via a bolted means. No special tooling shall be required. The joint packs should be such that tap off units can be installed close to the joints.
 - Isolated earth to be provided.
- Tap Off Units

A system of tap off units will be provided. The tap offs shall be made by the same manufacturer as the busbar with same country of origin in case of imported into India.

- Tap off units shall benefit in catering to all electrical requirements/specifications for all racks & rack PDUs.
 - Tap off units shall be capable of being inserted safely while the busbar is energised. The manufacturer shall provide a statement to confirm tap offs can be engaged whilst the busbar is live.
 - Tap off units shall be polarised to avoid incorrect installation.
 - All tap off units shall use a mechanical/electrical interlock. Tap offs shall make earth contact prior to any contact with live conductors. Earth contact will break last during removal.
 - The tap off unit will not become live during insertion into the busbar. An independent mechanism shall be operated to engage the tap off conductors into the busbar conductors. This mechanism shall only be operable when the tap off has been correctly inserted to the busbar.
 - Tap off units shall have integral shutters.
 - Tap off units that make a simultaneous mechanical and electrical connection when attached to the busbar shall not be permitted.
 - Tap off units shall be compatible for vertical and horizontal mounting on the busbar.
 - Any tap off unit with any rating shall be compatible with all ratings of the busbar systems to minimize the spare inventory.
 - The required protection device shall be as indicated on the drawings.
 - The required outlet device shall be as indicated on the drawings.
 - Tap off units shall be configured by the manufacturer to balance the load based on the quantity of tap off units provided.
 - Tap off units shall use either a circuit breaker or a fuse for branch circuit protection as indicated on the project drawings
 - An MCB interlock shall be added to ensure that the tap off unit cannot be fitted/ removed while the circuit breaker is in the on position.
 - The tap-off boxes for storage racks should have remote monitoring capabilities to get integrated with BMS/DCIM for visibility of electrical load and power consumption data.
- End Feed

- The end feed shall provide the connections from the incoming power sandwich type busbar to the data centre busbar system and both type of busbar to be supplied by same OEM for best compatibility.
 - The Sandwiched busbar of 2000Amps, TPN with housing as earthing, shall be ASTA certified to withstanding the stress of a RMS symmetrical ampere fault of 50KA for 1-second duration. The conductor should be Aluminium (High Density 55% conductivity) and the contacts shall be tin plated to avoid corrosion with IP-55 rating. The bus duct shall be installed on suitable hung from ceiling or clamped on wall in riser shafts.
 - The end feed shall be an IP2X enclosure with various access panels for incoming cabling.
 - The end feed shall have an internal connection to a section of busbar conductors.
 - The end feed shall also be available as a centre feed box to accommodate existing or future site conditions.
- Factory Testing
 - Standard factory tests shall be performed on the equipment provided under this section.
 - All tests shall be in accordance with the latest version of ISO, ANSI and NEMA standards.
 - The manufacturer shall provide three (3) certified copies of factory test reports upon request.
- Examination
 - Examine areas and conditions, with installer present, for compliance with requirements for conditions affecting performance of the busbar.
 - Proceed with installation only after unsatisfactory conditions have been corrected.
- Installation
 - The contractor shall install the busbar in accordance with manufacturer's instructions.
 - The busbar runs shall consist of lengths as shown on the drawings.
 - The tap off units' orientation shall be as indicated on the drawings.
 - Hanging of the busbar shall be done using the busbar hangers from a secure structure above the busbar.
 - The hangers shall connect to the busbar, and to an all-thread rod provided by the installing contractor.
 - The spacing of the hangers along the busbar is 1.5m or less as recommended by the manufacturer.
 - The end feed shall have connection provisions for the contractor supplied

- feedercabbling.
 - The end feed shall be connected to the busbar section using a joint kit.
 - Connection of sections of the busbar shall be done using a joint kit. The connection shall be made per the manufacturer's instructions.
 - An end cap shall be installed at the end of the busbar run.
 - As shown on the drawings elbow or tee connections may also be required.
 - Maintain minimum clearances and workspace at equipment according to manufacturer's written instructions.
 - Contractor shall make connections to supply circuits according to manufacturer's instructions and project drawings.
 - An installation and operational manual shall be provided by the manufacturer.
- Miscellaneous
 - The manufacturer shall provide submittal drawings for the busbar system and for tapoff units. The manufacturer shall guarantee the entire system against defective material and workmanship for a period of one year from date of shipment.
 - The Existing necessary panels/distribution box to be upgraded/modified/replaced for supporting power capacity up to 800kw from the existing UPS till the BBT.

HVAC: HEATING, VENTILATION AND AIR CONDITIONING

Repairing/maintenance/modifications/upgradation/replacement etc. of the existing 8.5 TR PACs situated in the telecom room and staging room. And Supplying, Installing, Integrating, Piping, Plumbing, Ducting, Commissioning, Testing etc. of a new HVAC system in the data centre/ server farm, shall consist of the following technical requirements & specifications:

PRECISION AIR CONDITIONERS

- Type

The Direct Expansion type precision AC should be microprocessor based and suitable for in-row placement between racks or server end. The units shall be able to cater high sensible load of the server as per requirement.

- Basis of Design
 - The three CACs (cold aisle containments) shall be individually controlled, regulated, and managed. Each CAC shall be operated independently without interference, affecting the other CACs.
 - The HVAC design shall initially cater 170Kw critical load capacity with a provision for expansion till 800Kw critical load capacity in future.
 - Design Guidelines Input: ASHRAE & TIA942
 - As per ASHRAE (Recommended) TC9.9-2011, Inside Condition:
 - Low End Temperature: 20 °C (Cold Aisle)
 - High End Temperature: 27 °C (Cold Aisle)

- Low End Moisture: 40% RH (Cold Aisle)
- High End Moisture: 60% RH (Cold Aisle)

The bidder shall submit the detail design brief on the complete solution.

- Casing

The indoor & outdoor units shall be sectionalized / cabinet construction. Indoor units shall be consisting of compressor and motor, EC fans, coil section, heater and humidification section, filter section, and drain pan. The casing shall be constructed of thick sheet steel construction, powder coated with minimum 10mm thick insulation. The units should be fully accessible from front and rear side for maintenance and any component removal. The model shall be capable of handling up to 10200 CMH with a horizontal airflow pattern and is rated at 9500 CMH. The rated net sensible cooling capacity of the unit is not less than 42kW, based on the supply air condition of 23 deg c dry bulb temperature at the rack, 50 +/-5% relative humidity and the unit supplied with 318V to 415V, 3 Phase 50 Hz/60 Hz power supply. The capacity of humidifier is 1.5kg/h and the capacity of reheating is 6kW.

- Cooling Circuit

The refrigeration circuit of the unit incorporates a high efficiency DC brushless compressor with a crankcase heater, filter dryer, moisture indicating sight glass, and an electronic expansion valve. The compressor is equipped with an environment-friendly refrigerant (R410A), and a DC brushless type arrangement with variable capacity operation of 30% to 100%. The compressor also has a suction gas cooled motor, vibration isolators, internal thermal overloads, automatic reset high-pressure switch, low pressure & high-pressure transducer, and a crankcase heater.

The electronic expansion valve (EEV) controls the mass flow rate of the refrigerant within the refrigerant circuit at high speed with greater precision. EEV is suitable for DC brushless compressor as an expansion device, with green refrigerants (R410A). EEV provides a better control over superheating at the outlet of the evaporator, thereby ensures that compressor shall never be filled by liquid.

- Compressor & Motor

The compressor shall be hermetic sealed type and suitable for operation on Eco-friendly Refrigerant R-410a. The compressor shall be capable of operation of variable capacity by using brushless AC/DC inverter /digital scroll compressor. The compressor should necessarily provision of oil return on part load operations. The motor shall be suitable for 415± 10% V, 50 Hz, 3 Phases AC supply. 56

- Evaporator Section

Evaporator coil shall be of fin and tube type having hydrophilic coated aluminum fins firmly bonded to copper tubes assembled in zinc coated steel frame. Face and surface areas shall be such as to ensure capacity from each unit. The moisture indicating sight glass, liquid line solenoid valve and expansion valve for each circuit are mounted in a service compartment, isolated from the air stream, to allow checking and adjustment while the unit is in operation. A condensate drip tray of stainless-steel construction of minimum 18 SWG thick, duly

insulated shall be provided.

Dehumidification shall be achieved by reducing the air flow of the EC fans which thereby would reduce the ADP of the cooling coil to achieve dehumidification.

- Fan Section

The unit should be equipped with minimum of 10 Nos multiple hot swappable EC Fans.

- Humidifiers & Heaters

The humidifier and heaters shall be a built-in feature in each machine individually. Humidification shall be provided by boiling water in steam generator/infrared humidifiers. The steam shall be evenly distributed into the supply air stream of the Air Conditioning Unit. The humidifier shall be self-cleaning and capable of delivering variable capacity steam from 30 % to 100% of its total capacity with help of microprocessor. The humidifier shall be fully serviceable with replaceable electrodes. Wastewater shall be flushed from the humidifier by initiation of water supply valve via U-trap. The microprocessor should be able to display the current drawn and actual steam output in the microprocessor.

Heater should be of minimum two stages & heating circuit shall include dual safety protection through loss of air and manual reset elevated temperature controls.

Electric strip heaters shall be of the low temperature totally enclosed strip type fitted with radiation fins and suitable for operating at black heat. If overheating occurs, a safety thermostat should cut off the voltage supply to the heaters and triggers an alarm. Microprocessor should be able to control the humidification and heating through suitable sensors.

- Air Filtration

The unit to be equipped with two G4 rated air filters following with EU4, located within the cabinet and accessible from the rear side of the unit. A filter clog alarm is also available as an option to alert clogging of the filter.

- Microprocessor Control

Unit shall be controlled by the microprocessor based intelligent controller board. The air conditioning unit is also configured with 7-inch HMI color screen or LCD screen with simple user interface operation. The multi-level password protection feature can effectively prevent unauthorized operation. It also has additional features like power failure auto-restoration and high & low voltage protection. The operation status of the components can be available on the respective menu screen; the expert-level fault diagnosis system can automatically display the current fault information, facilitating easy maintenance. It can also store up to 1000 historical event records.

The controller allows monitoring and setting of the room parameters. The unit receives multiple temperature sensors responses placed at the rack inlet, to ensure management and control of temperature as per the set point; each unit can be connected to 6 remote temperature sensors.

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

- Air inlet temperature
- Air supply temperature (remote sensors at rack inlet)
- Return temperature set point
- Supply temperature set point
- Humidity (inlet)
- Humidity set point
- Suction pressure
- Discharge pressure
- Compressor output
- Fan output
- Heating status
- Humidifier status
- Supply voltage

- Rack Temperature Sensors

The rack temperature sensors consist of a vented case with a temperature probe - up to 6 housings (6 temperature probes) can be connected to unit. If one housing and sensor probe is attached to a rack and the unit is conditioning, then the sensor will provide real-time direct feedback of the cooling unit that helps in optimizing the amount of cooling and airflow required. This improves energy efficiency and ensures proper rack inlet air temperatures. The sensor data can also be reported to remote BMS or other monitoring systems.

- Common Alarm Contact

This provides the customer with a set of normally open (n/o) contacts for remote indication of unit alarms. When a critical alarm occurs, the contact will be closed and outputs a signal to trigger external alarm devices.

- Monitoring

The control board is provided with an RS485 port, and the standard protocol is MODBUS; RDU-SIC monitoring card is used to monitor the unit through serial port communication (an RJ45 port and a USB port also available). One SIC cards can be configured per unit.

Features of the SIC card:

- Using the Web browser to monitor intelligent equipment and the environment through the Web server function.
 - Using the Network Management System (NMS) to monitor intelligent equipment and the environment through the SNMP agent function.
 - Using the Machine Room Management Software (RDU-Manager) to monitor intelligent equipment and the environment through the TCP/IP port.
 - Using the Centralized Management Software to monitor intelligent equipment through the Server function Condenser.
- The factory matched air-cooled condensers shall be the low profile, weatherproof type incorporating high efficiency, direct drive, external rotor motors with axial blade fans along with the fan speed controller. The condenser shall be constructed from heavy duty GI and corrosion resistant components. Heavy duty mounting legs and all assembly

hardware shall be included. Condensers shall be suitable for 24-hour operation and be capable of providing vertical or horizontal discharge. The condenser shall be fully factory wired to an input isolator and require 230-volt 1 phase 50Hz electrical service.

- The high-performance heat exchanger condenser shall include mechanically expanded enhanced surface copper tubes and aluminium fins for efficient heat transfer.

- Electrical Re-heating

The unit is equipped with a Positive Temperature Coefficient (PTC) ceramic type electrical heater.

- Electrode Humidifier

The unit is equipped with a factory installed electrode humidifier, which includes humidifying cylinder kit and humidifying control board. The humidifying control board receives humidifying command from the main control board, which automatically controls the operation of the humidifying cylinder, and gives feedback alarms information of the humidifier to the main control board. The conductive rate of water required for electrode humidifying should be within the range of 125 us/cm to 1250 us/cm.

- Remote Temperature Sensor Kit

The sensor is used to monitor the temperature of other devices in the equipment room and the read temperature can be used as the control temperature of the unit.

- Water Leakage Detection Kit

Water leakage detection kit is used to detect the presence of water under the floor of the unit, if the kit senses wet floor condition, then it signals the control board to trigger the alarm.

- Dual Power Module

Unit shall be equipped with a highly efficient dual power module with minimum electrical losses. The unit has built-in two power modules as a back up to each other to ensure the seamless operation, thereby providing reliability and stability to the system.

CONTAINMENT: COLD AISLE SYSTEM

Supplying, Installing, Integrating, Piping, Paneling, Commissioning, Testing etc. of a cold aisle containment in the data centre shall consist of the following specifications:

The Containment uses a series of panels, door frames and doors, and air blocks to enclose a cold aisle zone which contains cooling unit supply air.

1. The cold aisle zone is the space between two rows of IT equipment racks with cold air being

supplied between the two rows of racks (or one row of racks and an architectural wall) and the IT equipment exhausts hot air away from the aisle. In this enclosed space cooling unit supply air is collected inside of the Containment. The cool air is supplied to the IT equipment while the IT equipment exhaust air is pushed outside the Containment and returned to the cooling unit.

2. By preventing mixing of cool supply air and hot exhaust air, this self-contained configuration is capable of supporting a complete range of low, medium, and high power/heat density loads, and can be deployed in multiple environments without affecting the surrounding area.

3. The Cold Aisle Containment Glass has to withstand temperature of 80°C

4. Ceiling Panel

a. Ceiling panels shall be minimum 5.0 mm or thicker Lexan clear-ribbed panels or 2.36 mm thick V0 clear panels with aluminum framing.

5. Flame spread rates: Smoke development index "0-65" and flame spread index "0" in accordance with UL723 or ASTM84. Nominal thickness: 2.36 mm (V0 clear) –or– Smoke development index "20" and flame spread index "0" in accordance with UL723 or ASTM84. Nominal thickness: 6.0 mm (Lexan)

6. Minimum Light Transmission per ASTM D1003 equal to 82% or greater.

7. Ceiling panels shall be designed to be supported by the frames of the IT Equipment racks. Ceiling Panel frames sizes shall be suitable to match up with various rack widths, row width, and aisle widths.

8. The ceiling system shall be designed to permit removal of the ceiling panel from within the contained zone without the use of tools for service access to the space above the Aisle

9. Door Frames and Door

10. Metal door frames and doors shall be provided to establish air containment at the end of two rows of racks. The door frame system shall match the height of the rack-based equipment, and match the design width of the contained aisle

11. Doors shall be sliding, to permit access into the contained aisle for maintenance or servicing. Doors shall be provided with a window and handles. Automatic door closure system for sliding door.

12. Frames and Component Seal

13. Foam Rubber gaskets or metal/composite, brush, or plastic air blocks shall be installed at Aisle joints to minimize open gaps between containment system components, such as door frames, ceiling and duct panels, and IT Equipment racks and rack-based equipment. Gasketing and/or air blocks may include, but not be limited to, the following.

I. Joints between adjacent ceiling/duct panels

II. Joints between ceiling/duct panels and top of racks, if not metal to metal

- III. Joints between door frames and ceiling/duct panels, if not metal to metal
- IV. Joints between door frames and racks at the end of the row(s)
- V. Joints between rack bottom rear frame and floor
- VI. Joints between duct panel and ceiling/roof of room
- VII. Blanking Panels, Height Adapters, and Depth Extenders
- VIII. Can be used to provide an aesthetic alternative for varying dimension enclosures

14. Blanking Panels shall be placed where gaps between racks exist to seal contained aisle. The panel shall match the height of the enclosures and match the width of the gap. It shall not be mounted to any adjacent blanking panels, nor shall it support any adjustable height supports.

15. Depth Extenders shall mount to front or back of enclosures to align aisle. The extender shall match the depth of the adjacent racks and match the width and height of the enclosure (including any height adapters) of which it is being mounted.

16. Height Adapters shall mount to the top of enclosures to align the enclosure height. The height adapter matches the height of the adjacent racks and shall match the width and depth of the rack (including any depth adapters) of which it is being mounted.

17. Supplying, Installation, Testing, and commissioning has to be done by SI/vendor/OEM/Certified Engineer.

VESDA

Repair/replacement/maintenance/upgradation of the existing VESDA system that are installed in the server room, staging room, telecom room, etc. on the data centre floor.

If replacement is the only possibility, then the new VESDA system (includes Supplying, Installing, Integrating, Piping, Commissioning, and Testing of a very early, sensitive smoke detector apparatus [system]) on the data centre floor shall consist of following specifications:

- High Sensitivity Smoke Detection Aspiration General Description:
 - A high-performance aspirating smoke detection system shall be supplied, installed, and commissioned by the specialist contractor in accordance with the requirements detailed in the NFPA – 72, Aspirating Detection Systems.
 - The system has been designed to sense incipient smoke at a very early stage install critical rooms, namely:
 - Data Centre Room/Server Farm
 - UPS & Battery Room
 - Technical Areas (area where probability of fire is high)
 - The panels shall be mounted inside the risk protected and there shall be a network of fair sampling pipe work.
 - 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.

- The sampling pipe has to run over the true/false ceiling and below the floor (falseflooring).

- Scope of Work

- This specification covers the requirements of design, supply of materials, installation, testing, and commissioning of Aspirating Smoke Detection System. The system shall include all equipment's, appliances, and labour necessary to install the system, complete with high sensitive LASER-based Smoke Detectors with aspirators connected to network.
- The SI shall also make provision in the Aspirating Smoke Detectors to trip AHU and to shutfire dampers in the event of fire through the relay contacts.

- Codes and standards

The entire installation shall be installed to comply one or more of the following codes and standards:

- This specification covers the requirements of design, supply of materials, installation, testing, and commissioning of Aspirating Smoke Detection System. The system shall include all equipment's, appliances, and labour necessary to install the system, complete with high sensitive LASER-based Smoke Detectors with aspirators connected to network of sampling pipes.
- The SI shall also make provision in the Aspirating Smoke Detectors to trip AHU and to shutfire dampers in the event of fire through the relay contacts.
- The signal is extended to the Fire Alarm monitor Modules / BMS through Volt free contacts for further investigation.
- 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.
- When required, an optional remote Display unit shall be provided to monitor each
- detector, and a Programmer shall be supplied to configure the system.
- 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

- Approvals

- All the equipment's shall be tested, approved, and/or listed by:
 - 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
 - Vds (Verband der Sachversicherer e.V), Germany

- Design Requirements

- The System shall consist of a high sensitive LASER-based smoke detector, aspirator, and filter.
- 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.
- 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.

RR: RODENT REPELLENT SYSTEM

Repair/replacement/maintenance/upgradation of the existing rodent repellent system that are installed in the server room, staging room, telecom room, etc. on the data center floor.

If replacement is the only possibility, then the new RR system (includes Supplying, Installation, Integration, Commissioning, and testing) shall consist of following specifications: -

- Controllers – Be capable of generating variable high frequency electronic signals that are ultrasonic in nature (20 KHz to 50 KHz) and these signals shall be transmitted to the transducers for emission all around.
- Transducers – To cover an open area of 300 Sq. Ft. minimum with an average ceiling height of 10ft.
 - Operating Frequency: Above 20Khz
 - Power Consumption: 15W max
 - Sound Output: 80db to 110db (at 1m)
 - Power output: 800mW per transducers

WLD: WATER LEAK DETECTION SYSTEM

Repair/replacement/maintenance/upgradation of the existing water leak detection system that are installed in the server room, staging room, telecom room, etc. on the data center floor.

If replacement is the only possibility, then the new WLD system (includes Supplying, Installation, Integration, Commissioning, and testing) shall consist of following specifications: -

It shall be consisting of: -

- Water Leak Detection Panel

The water Leak detection panel consists of multiple zones. These controllers shall have

MODBUS/BAC net output to be integrated with BMS system. The features areas under:

-

- Alphanumeric LCD Display with the minimum of 3Lines
 - Soft Touch Membrane Keypad
 - LED Indication of the events like power, Alarm & Fault
 - Password protected event log facility
 - Remote monitoring via MODBUS/BAC net protocol
 - Configurable sensitivity adjustment
 - Dedicated Hooter output for local alarm
 - Capability to display the source of the leak as a distance.
-
- Water Leak Sensing Cable
 - Water leak sensing cable shall be mechanically strong, resistant to corrosion and abrasion.
 - It shall be constructed with two sensing wires, an alarm signalling wire and a continuity wire constructed by fluoropolymer carrier.
 - It shall have end circuit to detect open circuit fault.

 - Hooter/Alarm (if required/integration with DCIM).

ADDRESSABLE FIRE ALARM SYSTEM (AFAS):

Supplying, Installing, Integrating, Commissioning, and testing of a fire alarm system in the data centers shall consist of the following specifications:

- Entire facility will have fire detection and alarm system. Different types of detectors such as fire, smoke and heat detectors or combination of all installed and wired to a control panel in a Zonal fashion.
- This system must be integrated with the central monitoring system. The fire panel should be addressable and must have battery powered.
- The proposed site already has fire hydrant system and pipes are running across the floor. The bidder must disconnect and dismantle the pipes in server farm area only. This area will be replaced by NOVEC clean agent in place of water as a fire suppressant.

- The fire hydrant on the people support area side will remain as it is, and it will remain connected to the main system.
- The AFAS system will have manual call point, hooters, and all other accessories for complete fire detection system.
- There must be a provision to connect the system to the Building Management System.
- Illuminated exit signs must be installed on Fire exit door.
- Emergency evacuation laminated chart of A3 size must be displayed at all important location.
- Detectors must be placed on all voids.
- A detail table of items must be submitted with quantity and type of items.
- The design will be as per NFPA and local fire codes whichever is applicable.
- Hooter with strobes is to be installed at least 2 points in the Data Centre area.

GAS BASED FIRE SUPPRESSION SYSTEM

Repair/replacement/maintenance/upgradation of the existing gas-based fire suppression system that are installed in the server room, staging room, telecom room, etc. in the data center.

If replacement is the only possibility, then the new gas-based fire suppression (cylinder) system (includes Supplying, Installation, piping, Integration, Commissioning, and testing) shall consist of following specifications: -

- Gas Based Fire Suppression System (GBFSS)
 - The SI shall supply, install, test, and put in operation NOVEC1230 based fire suppression system.
 - The fire suppression system shall include and not be limited to gas release control panel, CCE approved seamless cylinders, discharge valve (with solenoid or pneumatic actuator) as the case may be, discharge pipe, non-return valve and all other accessories required to provide a complete operation system meeting applicable requirements of NFPA 2001 or ISO standards and installed in compliance with all applicable requirements of the local codes and standards.
 - The system design should be based on the specifications contained herein, NFPA 2001 & in accordance with the requirements specified in the design manual of the agent.
 - The SI shall confirm compliance to the above along with their bid.
 - The system shall be properly filled and supplied by an approved OEM (Original Equipment Manufacturer)
- The key components* of the system shall be VdS or LPCB or FM/UL listed. The NOVEC 1230 gas shall
 - Comply with NFPA 2001 or ISO 14520 standard

- have the approval from US EPA (Environmental Protection Agency) for use as a totalflooding fire extinguishing for the protection of occupied space:
 - Be given Underwriters' Laboratories Inc. (ULI, USA) component listing for the NOVEC 1230gaseous agent.
 - must have zero ozone depletion potential (ODP).
 - have a short life span in the atmosphere, with atmospheric lifetime of less than 5 days
 - be efficient, effective and does not require excessive space and high pressure for storage
 - *Key components are valves and its accessories, actuators, flexible discharge andconnection hoses, check valves, pressure switch, and nozzles
- Design Condition
 - The hazard space volumes shall be protected from a common central or individual supply, the cylinder bank or individual cylinder system, with corresponding pipes and nozzle system.
 - The individual zone/ system shall be dimensioned to give a complete discharge of the agent in less than 10 seconds into the affected zone.
 - The software calculation shall be approved VdS or FM / UL. The discharge time shall not exceed 10 seconds. After end of discharge (10s) a homogeneous NOVEC 1230 concentration shall be built-up in the room.
 - The design concentration shall follow ISO 14520 or at minimum NFPA 2001 for under floor, room, and ceiling space. Unless otherwise approved, room temperature for air- conditioned space shall be taken around 20°C. For non-air-conditioned space, the temperature shall be taken around ambient temperature. The system shall be designed with minimum design concentration of 4.7 % as applicable to Class-A & C fire.
 - All voids within each hazard shall be discharged simultaneously. Each hazard shall have anindependent system, unless otherwise specifically stated.
 - The system engineering company should carry out the piping Isometric design and validate the same with a hydraulic flow calculation generated by using the agent's designsoftware.
 - Appropriate fill density to be arrived at based on the same.
 - The system shall be so designed that a fire condition in any one protected area
 - shall automatically actuate the total flooding of clean agent in that areaindependently.
 - The entire system shall incorporate inter-alia detection, audible and visual alarms,actuation, and extinguishing.
- Clean Agent Supply System

- The extinguishing agent shall be NOVEC 1230 with physical properties conforming to NFPA Standard 2001 or ISO 14520 standard.
- Each zone to be protected by the Total Flooding System shall be capable of being flooded independently of the other.
- Re-Filling and Maintenance
 - In case of any leakage or accidental discharge of the agent, it should be possible to re-fill the cylinders in India itself.
 - The SI should indicate the source of re-filling and the time that will be taken for re-filling and replacement.
- Storage of Extinguishing Agent
 - The agent shall be stored in liquid form at ambient temperature in high-pressure seamless cylinder containers designed for the purpose. The cylinder shall be high pressure, seamless, flat type, and concave bottom.
 - As per the regulations of the Chief Controller of Explosive (CCE) Nagpur, any system which has a working pressure above 19 bar will require the use of seamless cylinders that have been duly approved by the CCE, Nagpur.
 - Each cylinder shall have its own built-in pressure safety relief valves and shall also be equipped with pressure gauge to indicate the pressure of its content.
 - The cylinders shall be super-pressurized with dry Nitrogen to 42 Bar. The cylinder shall be capable of withstanding any temperature between -30 °C and 70 °C.
 - All cylinders shall be distinctly and permanently marked with the quantity of agent contained, the empty cylinder weight, the pressurization pressure, and the zones they are protecting.
 - All cylinders shall be adequately mounted and supported in a manner to facilitate individual servicing or content weighing.
 - Cylinders installed shall be of the same size where possible and the manifold shall be provided with non-return or check valves to prevent back flow when any cylinder is being removed for maintenance.
- Piping and Fittings
 - All piping shall be Schedule 40 seamless pipes complying with grade B and all fitting shall be of ASTM A-105.
 - Discharge Nozzles
 - Discharge nozzles shall be manufactured in corrosion resistant material and shall be positioned in a manner to effect a uniform concentration at the shortest time after discharge. Each nozzle shall be able to cover a height of 5m effectively.

- Detection
 - The detection part shall consist of the installation of an adequate number of smoke detectors strategically positioned for the early detection of smoke, and/or products of combustion. All detectors shall be ULI, FMRC and/or LPC or Vds approved.
 - The detection of smoke by such detectors shall immediately set of an audible alarm at the control unit and visual indication of the zone where smoke has been detected.
 - The detectors in each zone protected by Total Flooding System shall be wired on a DUAL RISK CIRCUIT basis. The actuation of one detector in a zone shall not be sufficient to cause the discharge of the agent. The agent shall only be actuated to discharge on activation of another adjacent detector in that zone.
 - The signal from the second activated detector within the particular zone protected by the Total Flooding System shall after a time delay activate the agent release device of the Total Flooding System. The time-delay circuit shall have a delay period adjustable from zero second to 180 seconds.

- Documentation:
 - The system engineering company should prepare & submit along with the bid documents, the piping Isometric drawing and support the same with a hydraulic flow calculation generated by using the agent's design software. The calculations shall validate the fill density assumed by the SI.
 - The SI shall submit copies of the datasheets of the hardware used in the system.
 - The SI shall also submit copy of CCE approval letter for the cylinder proposed to be used.
 - The SI shall also submit calculations to evidence the quantity of agent considered for the system.
 - The successful vendor must submit, along with the supply invoice, a certificate of authenticity, for the agent from the system engineering company duly checked and verified by distributor.
 - The system engineering company should provide, as part of the handing over, the As built drawings and operation & maintenance manual.

BMS: BUILDING MANAGEMENT SYSTEM

Supplying, Installing, Integrating, Commissioning, and testing of a building management system for the data center floor, comprising of following equipment but not limited to

Building Management System (BMS): comprises of a management system for the following:

- Monitoring and control of utility system
- Monitoring of Electrical System
- Monitor Branch Circuit power utilization – Rack Level

- External lighting Control
- Under vehicle detection and scanning system
- Fire door monitoring system and Fire pump monitoring
- Elevator level monitoring system
- Water sump – Motor control and monitoring
- UPS Monitoring System
- Integration of BAS system
- Attendance and Access control for O&M staffs through Bio-metric system.
- Temperature and Humidity Sensor
- Flow meter for Diesel unloading
- Float Sensor for Diesel Monitoring at day tank level
- Integration with All energy meter, MCCB, ACB, Safety and Security Equipment's, Diesel monitoring, Data center Temperature and Humidity Monitoring, UPS, PAC, Panel ON/Off/Trip status etc.

ACCESS CONTROL SYSTEM

Supplying, Installing, Integrating (with BMS/DCIM), Commissioning, and testing of an access control system in the data center shall consist of the following specifications:

- ☐ Access to the facility has to be controlled. Dual electronic authentication on each entry to the critical area must be available. Physical access controlled also has to be configured which ever

required. The scope will include all the access control system mechanisms including authentication, prioritization, and monitoring.

- ☐ All the doors have to be controlled by access control hardware and software except the manager room.
- ☐ All doors must have entry and exit card reader.
- ☐ Server room entry must be with biometric access from people entry side.
- ☐ The bidder has to supply and configure at least 50 number of proximity card.

CLOSE CIRCUIT TELEVISION SYSTEM (CCTV):

Repair/replacement/maintenance/upgradation/integration (with new CCTV system) of the existing CCTV system that are installed in the server room, etc. on the data center floor.

If replacement is the only possibility, then the CCTV system (includes Supplying, Installation, Wiring/Cabling, Integration, Commissioning, and testing) will be installed in the desired locations/rooms/zones (such as server farm/room, NOC, SOC, etc.) and shall consist of following specifications: -

- a) Surveillance of inside and outside of the facility must be done with different type of IP cameras such as Dome / Bullet / PTZ high-definition cameras with facility of motion-based recording for one month in NVR Storage. The CCTV system should cover all the concerned

are of Data Centre.

b) The cameras inside the server room to be for all the aisles including the coverage of PAC and entry/exit door.

c) All area of Data Centre should have CCTV coverage except Manager Room & Washrooms.

d) All cameras have to power by CAT6 from PoE Switch.

e) At least SIX months recording must be available in NVR in inbuilt HDD

f) All recording has to continuous/motion based (depending on the client's requirement) inside the server room, NOC room, BMS room and helpdesk area. However, inside the electrical room has to be continuous.

- Dome Camera:
 - a. 2MP, 1/2.8" CMOS image sensor, low illuminance, high image definition
 - b. Outputs 2MP (1920 × 1080) @25/30 fps
 - c. H.265 codec, high compression rate, ultra-low bit rate
 - d. Built-in IR LED, max IR distance: 40 m
 - e. ROI, SMART H.264+/H.265+, flexible coding, applicable to various bandwidth and storage environments
 - f. Rotation mode, WDR, 3D NR, HLC, BLC, digital watermarking, applicable to various monitoring scenes
 - g. Intelligent detection: Intrusion, tripwire
 - h. Abnormality detection: Motion detection, video tampering, no SD card, SD card full, SD card error, network disconnected, IP conflict, illegal access, voltage detection
 - i. Supports max. 256 GB Micro SD card
 - j. 12V DC/PoE power supply
 - k. IP67, IK10 protection
- Network Video Recorder (NVR):
 - a. New 4.0 user interface
 - b. 16-channel decoding @1080p (30 fps); self-adaptive decoding capability
 - c. Access, storage or forwarding at 384 Mbps or better
 - d. Simultaneous video output for VGA and HDMI1; 4K heterogeneous output for the 2 HDMI ports
 - e. Multiple data mode such as Raid0, Raid1, Raid5, Raid6, and Raid10
 - f. Remote configuration and management of IPCs, such as setting parameters, acquiring information, and replacing IPCs of the same model in batches.
 - g. AI-by-camera functions such as perimeter protection, face detection and recognition, SMDPlus, video metadata, ANPR and 3D behaviour analysis.
 - h. N+M cluster. When the host fails, the standby device will continue to record; once the host recovers, video recorded on the standby device will be transmitted back.
 - i. NVR should be 20TB or more for minimum storage of data for 6 months or more for the TSDC.

PoE+ Switch: Hardware Features & Performance		
General	Interfaces	24 10/100/1000Mbps RJ45 Ports 2 Gigabit SFP Slots
PoE	PoE Standard	802.3 af/at
PoE Ports	16, up to 30W	
PoE Power Budget	370W	
Performance	Switching Capacity	At least 36 Gbps
Packet Forwarding Rate	23.8Mpps	
Max Address Table	8K	
Packet Buffer	4.1 Mbit	
Jumbo Frame	9KB	
Power Supply (Two INPUT power, for redundancy)	100-240V AC, 50/60Hz	
Physical & Environment	Dimensions (WxDxH)	17.3 × 7.1 × 1.7 in. (440 × 180 × 44 mm)
FAN Quantity	2	
Operating Temperature	0°C~50°C (32°F~122°F)	
Storage Temperature	-40°C~70°C (-40°F~158°F)	
Operating Humidity	10% ~ 90%RH, non-condensing	
Storage Humidity	5%~90%RH, non-condensing	
Certification	CE, FCC	
Software Features		
L2 Features	<ul style="list-style-type: none"> • Link Aggregation <ul style="list-style-type: none"> - Static link aggregation - Up to 8 aggregation groups and up to 4 ports per group • Loopback Detection • Port Statistics • Cable Test • Flow Control • Mirroring <ul style="list-style-type: none"> - Port Mirroring - Ingress/Egress/Both 	
IGMP Snooping	<ul style="list-style-type: none"> • IGMP v1/v2/v3 Snooping • 128 Max Multicast Entries 	
VLAN	<ul style="list-style-type: none"> • 802.1Q VLAN • Port Based VLAN • MTU VLAN 	

QoS	<ul style="list-style-type: none"> • Port Based, 802.1p Based, 802.1p CoS/DSCP priority • Bandwidth Control - Ingress Rate/Egress Rate/Both • Storm Control -Broadcast/Multicast/Unknown-UnicastControl
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DCIM: DATA CENTRE INFRASTRUCTURE MANAGEMENT

The objective is that TSDC intends to implement (includes Supplying, Installing, Integrating, Commissioning, and testing) a DCIM solution for centralized monitoring of its Data Centre. This centralized DCIM should be able to integrate with existing third party BMS/ solution/hardware & acts as a single pane of glass into Data Centre operations. This enhances business control and the effectiveness of IT as well as Operations team. Any instrumentation or controller required has to be considered by the bidder.

DCIM Technical Specifications

DCIM		
S.No.	Specification	Compliance(Yes / No)
1	The vendor shall provide system software based on Web-based architecture, designed around the open standards of Web technology. The server shall be accessed using a web browser	
2	Minimum software solution shall provide: <ul style="list-style-type: none"> • Unlimited simultaneous users • Historical database • Built-in alarming, trending, and analytics/reporting capabilities • Support for third-party device integration • Open Restful API 	
3	Web architecture	
4	The intent of the Web architecture is to provide the operator(s) complete access to the system via a Web browser.	
5	Operating system support	
6	The server software must support Microsoft Windows operating environment on physical or on virtual environment.	
7	Graphical user interface and functionality	

8	<p>The client Web browser GUI shall provide a comprehensive user interface.</p> <p>It shall be constructed to function as an application and provide a complete and intuitive mouse- or menu-driven interface. It shall be possible to navigate through the system using a Web browser. The Web browser GUI shall (as a minimum) provide a navigation menu for navigation, and a pane for display of graphics, alarms/events, active graphic setpoint controls, configuration menus for operator access, analytics, and reporting actions for events. All system graphics are to be HTML 5 compatible. It should support minimum 5 locale languages, English is necessary.</p>	
9	<p>Supported Browsers: The GUI shall support the following browsers:</p> <ul style="list-style-type: none"> • Microsoft Edge • Google Chrome • Mozilla Firefox 	
10	<p>Color Graphics: The Web browser GUI shall make extensive use of color in the user interface to communicate status information about the equipment being monitored. Both light and dark user interfaces will be supported and able to be toggled within seconds.</p>	
11	<p>Display Size: The GUI workstation software shall graphically display in 1920x 1080 pixels and 32-bit true color.</p>	
12	<p>General Graphics: General area maps shall show the locations of controlled buildings in relation to local landmarks, if desired.</p>	
13	<p>Integrated Devices: system graphics shall show the system components via graphical representation (points, status color(s), labels, and trends). Points being controlled or monitored for each piece of equipment shall be displayed with the appropriate engineering units. SNMP (v1, v2 & v3), Modbus TCP and BacNet over IP devices can be integrated via the Web UI by the end user.</p> <ul style="list-style-type: none"> • The equipment view shall show the status of equipment such as rack rPDU, UPS and so on. • The view must allow users to drill down into equipment pages to view alarms and equipment information in full detail, including individual status of all associated device points. 	
14	<p>Minimum System Color Graphics: Color graphics (32 bit) shall be selected and displayed via a Web browser.</p>	

15	Intuitive Interface: Visualizations of boards/sites are to be customized by the user. The main view will comprise the side navigation menu, including boards, analytics, equipment, and system admin. The main view can be used for navigation and to drill down into all boards, sites, devices, and other features within the system.	
16	System Navigation	
17	At a minimum, the user must be able to navigate the system through a side navigation menu.	
18	The system must provide the capability of using links to navigate through the user interface.	
19	<p>Floorplan views must provide geographical navigation and are flexible to show global, regional, local and data centre specific views of site/location hierarchy. Components of the floorplan view must include:</p> <ul style="list-style-type: none"> • Ability to import image to match level of hierarchy being viewed (map, data centre, etc.) • Add groups, devices, racks, points, labels, or IP cameras to the floorplan view • Ability to add a heatmap view, capable of showing hot spots and cold spots for environmental or power data • Visualization of alarms • When racks are added, a dropdown view selector will allow for: alarm status, free front/rear rack U space, max contiguous front/rear rack U space, max rack temp, max rack kW load percent, total rack kW, heatmap view 	
20	The user must be able to create, edit and add boards, dashboards, and floorplan views	
21	<p>Graphics shall show each piece of equipment monitored or controlled for:</p> <ul style="list-style-type: none"> • Each building • Each floor • Each room • Each rack • Each device 	

22	<p>Events and Alarms: Events and alarms associated with a specific system, area or equipment shall be displayed on the main site view and/or within an embedded alarm console. The solution must have native capability to alarm on all connected devices. The alarm system shall have multiple alarm types depending on the severity level. Users must be able to drill down through views to locate alarm sources. The alarm should be accessible from the device level. Events, alarms, and reporting actions shall have the following capabilities:</p>	
23	<p>Alarm Console: Capable of displaying the following information for each alarm that has occurred in the system: Alarm State (with associated status color), Site, Device, Circuit, Tenant, Point, Point Type, Point Unit, Source, Last Alarm, Acknowledge Requested, Acknowledge State, Last Acknowledgment, Last Acknowledged By, Last Return to Normal, Last Update, Alarm Class, Warning Class, Message and Notes. The Alarm Console must also provide a link to the Site, Device and Point.</p>	
24	<p>User Definitions: Users must be able to choose the thresholds (high and low) for when an alarm and/or warning will activate, along with the points for the severity level. Users must be able to acknowledge and filter alarms. Alarms should have a way to prioritize more important alarms. The solution shall include an alarm history page where all system alarms are stored. Users should be able to search for previous alarms by site, device, or point.</p>	
25	<p>Nuisance Alarms: Alarm settings should also contain time delay and dead band settings to help reduce the number of nuisance alarms that occur within the data centre.</p>	
26	<p>Alarm / Event Notification: The solution must be able to notify different users based on the type of alarm. Users should be able to acknowledge alarms remotely. The alarm system should be able to notify users until a person acknowledges the alarm via escalating alarm levels. The alarm system should be able to alert users via email. The solution must allow users to customize alarm messages by escalation level. Multiple escalation level 1, 2 & 3 must be supported. Unique alarm instructions must be available within the system. Users must be able to edit messaging for alarms and return-to-normal status. The user shall be able to:</p>	
27	<p>View events throughout the system.</p>	
28	<p>Dependent on access level, manage the event through</p>	

	acknowledgements, deletions, sorting rules and viewing alarm notes	
29	<p>Configure Alarm / Event notifications:</p> <ul style="list-style-type: none"> • Alarm console and alarm pop up window • E-mail • Audible system sound alert for alarm condition 	
30	Configuration of operators	
31	<p>Username and passwords:</p> <ul style="list-style-type: none"> • Permissions: The Permissions field allows administrators to set access level for different users. Permissions include the following options: <ul style="list-style-type: none"> o Read/Write: Full read access and full write access to the entire system. o Read Only: Full read access but no writes or changes may be done. o Read/Acknowledge: Full read but no write or changes may be done, except to alarm database for acknowledging alarms. <p>System owner shall have the ability to assign combinations of roles and privileges to users that define access levels.</p> <ul style="list-style-type: none"> o User password expiration o Auto-log off period o Audible Alerts 	
32	Audit History: A log shall record operator activities and some system activities, such as opening and closing the database or automatic deletions.	
33	<p>Histories/Trending: Histories shall be user-configurable and displayed via the GUI. Trends shall comprise native points, along with calculated points (collections of Point Data). A trend logs property shall be editable within GUI.</p>	
34	<p>Viewing Trends: The operator shall have the ability to view trends with a time series line chart by using the history database or by selecting a specific point within the GUI. The line chart must be exportable within the pop-up window to Microsoft Excel and able to be saved as a visualization to be used within the Analytics tool.</p>	
35	Historical Data Records: Trend data shall be collected locally and retained within the local hard drive.	
36	<p>History Intervals: Historical records shall be saved to match the user-defined polling interval. Each trended point shall have the ability to be trended at a unique interval as specified by the user.</p>	

37	Tolerance: The user shall be able to enter a value for tolerance (change of value) if point data changes by the specified amount in between historical reading, a separate record will be created.	
38	Numeric Value Display: It shall be possible to mouse over any value on a history chart and have the numerical value and time of data captured displayed.	
39	Systemwide Trends: Any trend point in the system can be evaluated alongside any other trend point in the system. Unit or location shall not define trends.	
40	Graph Appearance: Trend values can be presented in line chart graphical format.	
41	Global Parameter Change: The system shall have the ability to execute a global parameter change (for example, bulk config of all points or a filtered subset of points for historical trending and/or alarm setpoints).	
42	Analytics and Reports: The software solution shall allow users to view previously created reports as well as to create new, user-defined reports using drag-and-drop functionality.	
43	Reports shall contain visualizations utilizing the following graphic types: <ul style="list-style-type: none"> • Bar Chart • Gauge • Pie Chart • Scatter Plot • Simple Value • Table • Time Series • User Image • User Text 	
44	User-defined reports shall include but not be limited to: <ul style="list-style-type: none"> • Alarms • Historical device data • Trend data based on user-defined timeframe 	
45	Each report can be run ad-hoc within the Analytics feature.	
46	Each report shall have the ability to be saved electronically. Standard and user-defined reports can be saved in the following file formats: <ul style="list-style-type: none"> • XLS • PDF 	
47	Each report shall have the ability to be delivered via email or saved to a specified file path, using a daily/weekly/monthly schedule.	

48	<p>IT Racks: The solution provides IT rack management tools and contain the following capabilities:</p> <ul style="list-style-type: none"> • IT rack view where the user can search IT racks by name, make, model, serial number, asset tag and so on. • The user should be able to associate power and environmental data to each rack. • Other important rack information such as rack location, RU used and RU free (front and rear), contact details, etcetera along with the ability to select/deselect columns from the view. • The user must also be able to create custom columns for inputting custom data. • Allow users to add new racks to the system and export/import rack data using spreadsheet format, to include install IT assets within the rack. <p>The user must be able to link to the individual rack view from the main rack database.</p>	
49	<p>IT Assets: The solution includes an asset database. IT Assets are representations of a physical rack assets that will be associated to IT Racks within the software. These assets are created within a dedicated assets feature.</p> <p>The assets feature contains a detailed list view of assets. The asset features shall provide the following capabilities:</p> <ul style="list-style-type: none"> • Asset database, which is sortable, filterable, and searchable by key asset data • Add assets • manually or via CSV import • Edit assets individually or by group • Support of assets within assets (blade server enclosures, as an example) • Export & import of existing asset database • Ability to assign IT assets to IT racks • Asset tab within the Rack View to visually display IT assets within each IT rack 	
50	<p>Control Groups: The solution shall provide the ability to control points, along with providing the ability for the user to create control groups. Control groups will consist of identical points across equipment (single or multiple) that can be sent a control command for the entire group.</p>	

51	<p>Maintenance: The solution must provide users with a feature to manage device maintenance events. The maintenance feature will silence all alarms and trending on specific equipment or multiple pieces of equipment for the duration of the maintenance event.</p> <ul style="list-style-type: none"> • Users must be able to place a device into maintenance mode instantly or schedule maintenance within the interface, for single or multiple grouped devices at a time. • Users have the option to receive email notification for the start and end of maintenance events. • Maintenance events must include start and end dates, devices, and task descriptions. • Users must be able to view maintenance history. • The solution shall allow users to add, edit and delete maintenance tasks. Events that have completed cannot be deleted. 	
52	Device Integration	
53	<p>The software solution shall support any vendor agnostic facility device to be integrated under monitoring using standard SNMP, Modbus TCP/IP & BacNet over IP.</p>	
54	Security	
55	<p>The software solution shall also be subject to owners' policies for security without effect on the Server or Client operation</p> <p>System must support https</p> <ul style="list-style-type: none"> • System must support import of certificate, use self-sign certificate or upload a certificate • File type supported must be PEM • The system shall not deploy protocols inherently susceptible to intrusion. • The system shall strip all unnecessary files and services from the Web service to protect the owner from intrusions. • Must support the ability to add security certificates via the user interface. 	
56	Database Support	
57	<p>The software solution shall support the following databases as a minimum:</p> <ul style="list-style-type: none"> • Niagara 	
58	Software Components	

59	All components of the software solution shall be installed and completed in accordance with the specification. Components shall include: <ul style="list-style-type: none"> • Server software, database, and Web browser Graphical UserInterface • System configuration utilities for future modifications to the system 	
60	Backup and Restore	
61	Software solution must support one click backup and restore option, thus enabling user to revert to last known good configuration of application, this feature will help operation team to bring system online as quickly as possible during any breakdown or revert to known configuration in case of any manual changes to be revert to last good working application config.	
62	This option of Backup and restore must be available inside the application itself must have multiple backups and restore option.	
63	Redundancy & High Availability	
64	Software solution proposed should support user to deploy HA or DC/DR (high availability or redundancy) architecture, with 100% guaranteed uptime	
65	Integration with physical asset management	
66	The proposed solution should have well established integration support with a physical asset management solution to detect physical assets at rack level & precise U level location.	
67	Rest API Support	
68	Proposed solution must have Rest API support to facilitate information sharing with 3rd party application.	
69	Authentication	
70	Proposed solution must support active directory or LDAP integration	
71	Tenancy	
72	Proposed solution must have an inbuilt feature to support multiple internal departments by mapping them against tenant ID, thus it should provide information regarding power used, capacity used by a tenant.	

AMC: SCOPE OF WORK (SOW) AND MAINTENANCE

Support for Data Centre Basic Infrastructure Maintenance on 8x5 NBD (next business day) basis by the OEM/SI for a period of Seven years, to ensure more than 99.982% uptime availability as per requirement. Maintenance including AMC of all equipment supplied and installed.

- a) All civil work maintenance (if required) shall be under the scope of SI.
- b) Repairs and maintenance of damaged civil work such as but not limited to false

ceiling, flooring/false flooring, tiles etc.

c) Repairs & Replacement of defective MCCBs/MCBs/Industrial Sockets, Breakers etc. in electrical systems.

d) Maintenance, repair, replacement of Electrical systems of the entire area including office Area, etc.

e) Maintaining gas suppression system (NOVEC1230 Cylinders, distribution etc.). Refilling of gas is under the scope of SI in case of any loss by mishandling by BMS team, leakage or periodic maintenance or top-up refill. However, the tenderer will ask for refill in case of any fire incidents. The SI/bidder shall have to ensure refill/top-up of NOVEC gas within 48 Hrs whenever required. To ensure refill within 48Hrs, the bidder shall keep on-site filled cylinders during the AMC period and take them away afterward.

f) Refilling of Fire extinguishers.

g) Repairs and maintenance of Access Control System, CCTV system, DCIM etc.

h) Maintenance/replacement of Network cables, CAT6 I/O Port, Splicing SM/MM OM3 cables with connectors, MPO cassette, trunk cables etc.

i) Wherever and whenever OEM support is not possible, the SI shall provide support/third party support for (included but not limited to) refurbishing/ replacement/modification/upgradation/maintenance/procurement of new equipment etc. under its scope.

j) The services of the vendor, to be selected through this tender/RFP, shall be required to provide the Annual Maintenance services and periodic Audit services after tender finalization and AMC of basic infrastructure equipment after warranty expiry as per the details below:

- I. Maintenance of the necessary critical Infrastructure such as, ACB/VCB/MCB, LT Panels, Track Bus way, PDU, HVAC System, Fire Prevention, Detection and Suppression System, Lighting system, Power, and Network Cabling, VESDA, WLDS, DCIM and facility interior etc.
- II. Maintenance of the multi-layer Physical Security infrastructure like biometric based access control system, CCTV/ surveillance systems.
- III. The selected SI shall do the back-to-back AMC including critical components such as (but not limited to), HVAC, Racks, iPDU, DCIM, AHU, CCTV, Electrical Panel, ATS etc. with their respective OEMs etc.
- IV. The response time commitment from the OEMs required is 2 Hrs in the event of any breakdown and the resolution time maximum 6 hrs to 24 Hours.
- V. Every critical component should be independent in nature and shall have redundancy/backup in N+N make. (such as bus bar, panels etc.)
- VI. Every critical component such as PDUs, MCBs, VCBs, wires, cables, rack accessories, LT panel/HT panel accessories (wires, connectors, switches, MCBs etc.) tools, instruments, and their accessories (rubber gloves, rubber boots, etc.) shall have abundant spares stored at DC site for immediate accessibility and fixing a problem caused.

1. Maintenance services deliverables

Annual Maintenance Services of all the equipment, which includes (but not limited to)

- a) Declaration of consumable material list.
- b) Forecasting the cost of consumables.
- c) Quarterly Uptime Report.

We shall define SLA and SLA penalty- Please describe covering above points in the bid

- I could not find clearly defined SLA and SLA related penalty in this document
- What is SLA penalty if SLA or TAT (Turn Around Time) not being met? And is there any mitigation plan to get things done?
- If bidder is continuously failing or not responsive after sometime during AMC period, what is course of action

The SI will ensure 99.982% uptime for the entire equipment failing which penalty as stated under shall be imposed.

Penalty clause: In case of the failure on the part of SI to attend to the calls within the stipulated time as prescribed, the client reserves the right to impose a minimum 5% & maximum 10% of contract amount, as penalty on the quarterly amount due and payable under AMC.

In the event of non-satisfactory conduct of maintenance services, Client shall have the right to terminate the maintenance contract on short notice with a penalty of one quarterly amount under the AMC.

2. Annual Maintenance Contract

- a) Quarterly Preventive Maintenance.
- b) Half yearly Air Quality Testing in the Data Centre for a clean room environment in the DCarea.
- c) Declaration/ calibration certificates of all necessary tools for measurement, monitoring, testing, minor repairing etc. on site.
- d) Break-fix repairs within signed SLA.
- e) Annual maintenance posts the warranty period is a responsibility of the SI.
- f) The SI must submit back-to-back contract agreements with the OEMs to the client.
- g) The SI must maintain the uptime of 99.982 all around the year for the TSDC.
- h) The first level troubles/breakdown has to be resolved by the SI team.
- i) The annual maintenance is comprehensive in manner.

3. Scope of Preventive Maintenance

1) HVAC system

- a) Frequency: Quarterly
- b) Checks: Parameters, Alarms, Fan Replacement, Filter Replacement

- c) Any abnormality in functionality
- d) Discharge and Suction Pressure reading verification
- e) Compressor On/Off status.
- f) Humidifier Functionality Check.
- g) Drain System Check
- h) Fresh Water Line check
- i) Cleaning of condenser
- j) Insulation verification
- k) Supply and Return Air Temperature Sensor
- l) Rack Air Inlet Temperature sensor check

2) Electrical Panels

- a) Frequency: Quarterly
- b) Energy Meter Data Verification and calibration if required.
- c) ON/OFF Indication Check
- d) History of any tripping in last quarter.
- e) Thermography and tightening (once in a year)
- f) calibration of Relays (at least once in a year)

3) Comfort ACs and Industrial ACs

- a) Frequency: Quarterly
- b) Checks: Parameters, Fan Replacement, Filter Replacement
- c) Stabilizer Check
- d) Any abnormality in functionality
- e) Compressor On/Off status.
- f) Drain System Check
- g) Filter Cleaning
- h) Condenser Cleaning

- i) Insulation verification
- j) Remote Control functionality check.
- k) Sequence Controller Functionality Check.

4) Fire Alarm System

- a) Frequency: Quarterly
- b) Checks: Parameters, Battery Backup, any alarm in the last quarter.
- c) Smoke Detector Functionality Check
- d) Response Indicator Functionality Check
- e) Abort / Release / Manual Call Point Functionality Check.
- f) Access Control System
- g) Frequency: Quarterly
- h) Checks: Parameters, Single Leaf and Double Leaf Door EML
- i) Access Control System.
- j) integration with IBMS & FAS and its functionality
- k) Entry and Exit analysis of last quarter.
- l) Check for any unauthorized card entry

4. Vendor Management Services

The bidder SI should coordinate with all the relevant vendors of TSDC for Data Centre basic infrastructure, other vendors etc. to ensure that the problems and issues are resolved in accordance with the SLA of the vendor. The bidder SI should also ensure Maintain database of the various vendors with details like contact person, telephone nos., escalation matrix, response time and resolution time commitments etc. that unresolved items are escalated in accordance with the escalation matrix.

5. Periodic Health Check Audit

Need of the Audit:

In a dynamic scenario that the Data Centre always is, technology changes keep on happening in a continuous manner. Form factor of the IT equipment keeps on changing to the lower side to get itself accommodated in more numbers in a rack. However, at the same time more computing and processing capacity inside the equipment amount to drawing more power from the source. It may not be a difficult task to design a facility that can feed more power to the equipment.

However, cooling the equipment due to high and dynamic heat rejection is always a challenge.

Once a Data Centre is made and commissioned, IT equipment (hardware) gets added every now and then. It is important to be aware about the health of the facility in terms of power and cooling due to the continuous changes in Rack population status in the Data Centre and overall power and Thermal status.

Audit Methodologies:

The auditing firm must follow the procedures as follows for the Audit. Instruments to be used for the data collection may be as follows:

- a) Prepare an Audit project plan and submit to the client for approval
- b) The plan must indicate the system down time if required. However, no system down time should be required while doing the audit.
- c) Data collection points through instruments must be mutually agreed with client
- d) Class A power Analyzer must be used to capture performance data.

Power Audit Method:

- a) Data logging for all major output breakers of Main panels
- b) Earth Resistance checks
- c) Harmonics analysis till 11th Harmonics UPS input and output data collection for V, I, Hz, KW, KVA, KVAR, unbalance, Harmonics
- d) Ampacity of the cables, BBT used.
- e) Thermal imaging for all major breakers from Source to load.
- f) Thermal imaging analysis.

HVAC audit method

- a) Temperature inlet and outlet of each precision air-conditioner (PAC)
- b) Temperature data logging for each PAC for 4 hours
- c) CFM measurement at each opening.
- d) Power data logging for each PAC for 30 minutes.
- e) Complete analysis of the thermal stability.

IBMS system audit method

- a) Complete visual checks for all field devices
- b) Simulation through induced method
- c) BMS/DCIM details checks and analysis

Instruments to be used

- a) Class A power quality Analyses
- b) Air hood or Bolometer
- c) Thermal Imager
- d) Temperature loggers
- e) Vibration meter
- f) Noise level meter
- g) Lux meter
- h) Earth Resistance meter
- i) Clamp meter and Multimeter.

6. Note: The SI may engage a third party to perform the above tasks. However, the accountability will continue to lie with SI. And engaging third party will not absolve their responsibility towards SLA and AMC thereof.

7. Audit reports and Documents:

Post the data collections the Auditing firm must do a detail analysis on the data collected from the field devices and create a report that must depict the following:

- a) Visual inspection report
- b) Report generated by the Analyzer
- c) Thermography report
- d) Complete analysis report based on the measuring instrument data
- e) Risks and mitigation suggestions
- f) Safety reports
- g) Energy efficiency report.

Milestone

S.no.	Milestone	% Of amount
1)	Project plan, and Design doc submission and approval as per SOW	15%
2)	Items delivered shall be released on 100% of material delivered at site in good condition and verified by NiXi-CsC committee/representative	35%
3)	Completion of all Work for all applicable rooms on ground floor and first floor, terrace as per SOW and final approvals from client	30%
4)	Equally divided Per quarter payment of O & M and AMC Cost for 7 years (28 quarters)	20%

*Sign-off to be taken after every milestone from client

BILL OF QUANTITY

Note: The Bill of quantity has been derived from a tentative design and hence indicative. The bidder has to add/delete/modify quantity as per their design and solution. **It is mandatory for the bidders to visit the TSDC sites before bidding.**

S.No.	Description	Unit	Qty.	Remarks
1	DG set area (MEP) cost	Sqm	as per req.	
2	Civil work for HVAC	Lots	1	
3	Precision air conditioning (HVAC/PAC)	TR	To cater 76+ rack load (minimum 800kw)	Supply, Installation, Testing & Commissioning of PAC, wiring, piping cabling etc.
4	Aisle containment	SQM	as per req.	cold aisle containment
5	Cable tray	MTR	as per req.	
5	Bus Bar track	MTR	as per req.	
6	Panels	Lot	as per req.	Supply, Installation, Testing & Commissioning of but not limited to LT, HT, ATS, Transformer panel, MCBs, Wires, incomer, and outgoing panels etc,
7	IBMS	set	1	Hardware. software and licenses to operate for 7 years without any additional cost

8	DCM	set	1	Hardware. software and licenses to operate for 7 years without any additional cost
9	Cables/ Wires	set	as per req.	aluminium. Copper etc
10	Copper END TERMINATIONS	set	as per req.	flux(thimble), accessories etc.
11	Diesel Generator and accessories- (integration, fabrication,)	set	2 (minimum 500KW each)	(not limited to) fuel tank, batteries, oil, EXHAUST SYSTEM , sheds, etc. Along with integration with existing DG sets Scope of work is integration, fabrication, O&M
12	FUEL SYSTEM	Lot	as per req.	
13	Racks	Nos	76+	server racks, network racks
14	Rack Accessories	set	as per req.	PDUs, covers, doors, Access control, etc.
15	VESDA (including but not limited to intelligent smoke and fire detection, heat detectors)	Nos	as per Req.	as per solution qty offered by SI

16	Rodent Repellent	Nos	as per Req.	as per solution qty offered by SI
17	WLD (water leak detection)	Nos	as per Req.	as per solution qty offered by SI
18	AFAS	Nos	as per Req.	as per solution qty offered by SI
19	CCTV (hardware, software, and licenses and O&M for 7 years)	Nos	Minimum quantity req. 24	as per solution qty offered by SI Along with integration with existing CCTV system
20	Gas based fire suppression system	Nos	as per Req.	fire extinguishers, NOVEC, smoke fire detection and control
21	CABLE AND CONDUIT	MTR	as per Req.	
22	VIDEO WALL /LED TV	Nos	as per req.	
23	All PASSIVE CABLING	MTR	as per req.	Cover all the Data center floors , electrical room , ups rooms and office spaces spread across assigned floor
24	UPS AND BATTERIES	Lot	as per req.	Scope of work is installation , integration,

				<p>fabrication, O&M etc.</p> <p>Along with integration with existing UPS & Batteries sets</p>
25	Access Control	Lot	1	Camera and proximity readers and access cards and related management server and software for access control and any others accessories required (minimum 200 access cards)
25	Manpower cost	Lot	as per req.	For 24x7x365 days support
26	AMC	Lot	As per req.	Item Supplied by SI only
27	O&M	Lot	As per req.	Including DC facility management and periodic pest control every 1 year
28	Comfort AC	lot	as per req.	
29	MISCELLANEOUS ITEMS	lot	as per req.	

ANNEXURES

ANNEXURE I

- The data center/ Server farm/room area is approx. 3198 sq. ft. Its approx. length and approx. breadth are 56' x 59'7". The server room is 11' in height which includes 2' false ceiling and 1'6" false/raised flooring and remaining height of the room available for use is around 7'6". Reinstallation/revamping/modifications/upgradation/replacing of the floor tiles, ceiling tiles to be done as per the rack placement and layout plan.
- The Telecom room area is approx. 225 sq. ft. Its approx. length and approx. breadth are 19'6" x 11'. The telecom room is 11' in height which includes 2' false ceiling and 1'6" false flooring and remaining height of the room available for use is around 7'6".
- The Staging room area is approx. 225 sq. ft. Its' approx. length and approx. breadth are 19'9" x 11'. The Staging room is 11' in height which includes 2' false ceiling and 1'6" false flooring and remaining height of the room available for use is around 7'6".

ANNEXURE 2

The server farm/room comprises of the following Non-IT installations: (but not limited to)

S.No.	Description of the Item	Make	Model No.	Qty
1	25 TR PAC	Emerson	Libert PEX 3100	8
2	Cameras			
3	VESDA	System sensor Honeywell		1
4	Fire Alarm and Detection system	Schneider	FX-3NET	
5	Water leak detection system	Star Electronic Concept	H2O Alert	3
6	Rodent Repellent System:	Star Electronic Concept	Ultra NW	
7	Gas Release panel	Ravel (agent release panel)	RE 120 GR	4
8	Fire Suppression System			
9	Lighting at DC Area	Havells	Panel lighting	86
10	Fire Extinguishers			

The Telecom room comprises of the following Non-IT installations: (but not limited to)

S.No.	Description of the Item	Make	Model No.	Qty
1	8.5 TR PAC	Emerson	Libert PEX	2
2	VESDA	System sensor Honeywell		1

3	Fire Alarm and Detection system			
4	Water leak detection system	Star Electronic Concept	H2O Alert	3
5	Rodent Repellent System:	Star Electronic Concept	Ultra NW	
6	Gas Release panel	Ravel (agent release panel)	RE 120 GR	4
7	Fire Suppression System			
8	Lighting at DC Area	Havells	Panel lighting	
9	Fibre Optic Internet Wires			

10	Fire Cylinders	NOVEC 1230		2
11	Batteries			7
12	UPS			1

The Staging room comprises of the following Non-IT installations: (but not limited to)

S.No.	Description of the Item	Make	Model No.	Qty
1	8.5 TR PAC	Emerson	Libert PEX	2
2	VESDA	System sensor Honeywell		1
3	Fire Alarm and Detection system	Schneider	FX-3NET	
4	Water leak detection system	Star Electronic Concept	H2O Alert	3
5	Rodent Repellent System:	Star Electronic Concept	Ultra NW	
6	Gas Release panel	Ravel (agent release panel)	RE 120 GR	4
7	Fire Suppression System			
8	Lighting at DC Area	Havells	Panel lighting	

Racks and Cold Aisle Containment to be captured in Annexure 2.

ANNEXURE 3

S.no.	Components	Technical Description	Specifications
1	Wires, cables, and conduits	PVC insulating cables with copper conductors of defined thickness, voltage ratings, resistance, and current load along with catering with pre- defined wire coloring codes. Earthing/Grounding is mandatory to provide protection to electrical equipment.	Supply, designing, installation, inspection, testing, and commissioning of wiring system in accordance with IS – 732 (1989)The wiring to be done in accordance with a 3-phase System.
2	MCB, MCCB, ACB, RCCB etc.	Circuit breaker for over current/surge protection	Supply, installation, testing, and commissioning of circuit breakers comprising of the air, circuit, molded, residual break type circuit, robust and compact design suitable for indoor mounting and shall comply with the IEC 60947-1 and 2, IEC 60 947 / IS 13947:1993, IS/IEC 60898, S12640 -1 and IEC/EN

			61008 etc. standards. And also, the scopeshall also include interlocking, insulation, wiring & integration of circuit breakerswith distribution boxes.
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ANNEXURE 4

PRE-QUALIFICATION CRITERIA

Evidence submitted as per Pre-Qualification Criteria will be examined by Pre-Qualification technical evaluation committee (TEC) and if not found relevant, more time would be given to resubmit the evidence, failing to do so bidder will be rejected. "TEC shall have the right to ask for more details if not convinced".

Sr. No.	Pre-Qualification Criteria	Supporting Documents Provided
1		
2		

ANNEXURE 5

FORMAT FOR RESPONSE TO THE TENDER: PRE-QUALIFICATION BID

This section provides the outline, content, and the formats that the Bidders are required to follow in the preparation of the Pre-Qualification Bid

Pre-Qualification Bid Letter

To

Director

9th Floor, B-Wing, Statesman House Barakhamba Road,

Connaught place Delhi

New Delhi DL 110001 IN

E-Mail: pdns@NIXL.in

Sir,

Subject: "Expansion & Revamping of Non-Computing Infrastructure of Tripura State Data Centres (TSDC)": Tender No: <Tender Reference Number> Dated <dd/mm/yyyy> We, the undersigned Bidders, having read and examined in detail all the Tender documents do hereby propose to provide the services as specified in the Tender document number <Tender Reference Number> Dated <dd/mm/yyyy> along with the following:

a) Earnest Money Deposit (EMD)

b) We have paid an EMD of Rs. 45,00,000/- through the Bank Guarantee. This EMD is liable to be forfeited in accordance with the provisions mentioned above.

Contract Performance Bank Guarantee: We hereby declare that in case the contract is awarded to us, we shall submit the contract performance bank guarantee as per compliance to the General terms Conditions mentioned in this RFP and Contract document.

We hereby declare that in case the contract is awarded to us, we shall submit the Contract Performance Bank Guarantee Bond.

We hereby declare that our Bid is made in good faith, without collusion or fraud and the information contained in the Bid is true and correct to the best of our knowledge and belief. We understand that our Bid is binding on us and that you are not bound to accept a Bid you receive.

Thanking you,

Yours faithfully,

(Signature of the Bidder)

Printed Name

Designation

Seal

Date:

Business Address:

ANNEXURE 6

Declaration of Acceptance of Terms & Conditions in the RFP

To
Director
9th Floor, B-Wing, Statesman House Barakhamba Road,
Connaught place Delhi
New Delhi DL 110001 IN
E-Mail: pdns@NIXI.in

Sir,

I have carefully gone through the Terms & Conditions contained in the RFP document [No.] For **“Expansion & Revamping of Non-Computing Infrastructure of Tripura State Data Centres (TSDC)”** 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 I am, therefore, competent to make this declaration.

Yours faithfully,

(Signature of the Bidder)

Printed Name

Designation

Seal

Date:

Business Address:

ANNEXURE 7

Declaration Regarding Clean Track Record

To
Director
9th Floor, B-Wing, Statesman House Barakhamba Road,
Connaught place Delhi
New Delhi DL 110001 IN
E-Mail: ceoffice@nixi.in

Sir,

I have carefully gone through the Terms & Conditions contained in the RFP Document [No. _____] For “**Expansion & Revamping of Non-Computing Infrastructure of Tripura State Data Centres (TSDC)**” for the period of the project. I hereby declare that my company has not been debarred/blacklisted by any Government / Semi-Government organizations in India. I further certify that I am competent officer in my company to make this declaration.

Yours faithfully,
(Signature of the Bidder)

Printed Name-

Designation-

Seal-

Date: -

Business Address:

ANNEXURE 8

Format for Response to Tender: Technical Bid

Technical Bid Letter

To

Director

9th Floor, B-Wing, Statesman House Barakhamba Road,

Connaught place Delhi

New Delhi DL 110001 IN

E-Mail: ceooffice@nixi.in

Sir,

Subject For “**Expansion & Revamping of Non-Computing Infrastructure of Tripura State Data Centres (TSDC)**” Reference: Tender No: <Tender Reference Number> Dated <dd/mm/yyyy>

We, the undersigned Bidders, having read and examined in detail all the Tender documents do hereby propose to provide the services as specified in the Tender document number <Tender Reference Number> Dated <dd/mm/yyyy> along with the following:

Earnest Money Deposit (EMD):

We have paid an EMD of ₹45,00,000/- through the portal/bank guarantee. This EMD is liable to be forfeited in accordance with the provisions of - General Conditions of the Contract.

Deviations:

We declare that all the services shall be performed strictly in accordance with the Tender documents except for the variations, assumptions, and deviations, all of which have been detailed out exhaustively in the following statements, irrespective of whatever has been stated to the contrary anywhere else in our **Tender**:

Statement of Deviations from Tender Terms and Conditions is as specified in General Terms and Conditions

Further we agree that additional conditions or assumptions, if any, found in the Tender documents other than those stated in deviation schedule shall not be given effect to.

Contract Performance Guarantee Bond:

We hereby declare that in case the contract is awarded to us, we shall submit the Contract Performance Guarantee Bond in the form prescribed in the RFP.

Bid Validity Period:

We agree to abide by this Bid for a period of 30 days after the date fixed for Bid opening or for any further period for which Bid validity has been extended and it shall remain binding upon us, and Bid may be accepted at any time before the expiration of that period.

We hereby declare that our Bid is made in good faith, without collusion or fraud and the information contained in the Bid is true and correct to the best of our knowledge and belief. We understand that our Bid is binding on us and that you are not bound to accept a Bid you receive.

Thanking you,

Yours faithfully,

(Signature of the Bidder)

Printed Name

Designation

Seal

Date:

Business Address:

ANNEXURE 9

OEM Authorisation Letter

To
Director
9th Floor, B-Wing, Statesman House Barakhamba Road,
Connaught place Delhi
New Delhi DL 110001 IN
E-Mail: ceooffice@nixi.in
Sub: Product Compliance with the tender specifications
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 “**Expansion & Revamping of Non-Computing Infrastructure of Tripura State Data Centres (TSDC)**”.

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 7 years from the date of completion of work.

When resold by <Name of the bidder>, these products are subject to our applicable standard end user warranty terms of 3 years and AMC for 3 years post warranty period is over

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 NIXI-CSC terms.

We confirm that the products quoted are on our current product list and are not likely to be discontinued within 7 years from the day of this letter. We assure availability of spares for the products for the next Seven years.

We also confirm that any bidder who offer our products without our authorization as above, NIXI-CSC at its 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 NIXI-CSC 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)

ANNEXURE 10

Format for Response to Tender: Commercial Bid
Commercial Bid Letter

To

Director

9th Floor, B-Wing, Statesman House Barakhamba Road,

Connaught place Delhi

New Delhi DL 110001 IN

E-Mail: ceoffice@nixi.in

Subject: For “Expansion & Revamping of Non-Computing Infrastructure of Tripura State Data Centres (TSDC)”

Reference: Tender No:<Tender Reference Number>Dated<dd/mm/yyyy>

Dear Sir,

Having examined Request For Proposal (RFP) number -----
----- dated ----- the receipt of which is hereby acknowledged, we, the undersigned, offer “Design, Engineering, Supply, Installation, Testing and Commissioning of Air-conditioning, UPS and iPDU” in full conformity with the said RFP, for a total project cost of Rs (Rupees only). The above amount is in accordance with the Price Schedules herewith made part of this bid as per the Commercial bid template.

We undertake that we shall carry out audit activities in conformity with the bidding documents (and as amended from time to time) for a total cost as provided in the Commercial bid if the contract is awarded to us.

We declare that we have studied RFP and are making this proposal with a stipulation that you shall award us Contracts, either in part or whole, “**Expansion & Revamping of Non-Computing Infrastructure of Tripura State Data Centres (TSDC)**” (meaning as realized in RFP) including all other services specified in the Contract Documents.

We have read the provisions of RFP and confirm that these are acceptable to us. All necessary clarifications, if any, have been sought for by us and duly clarified in writing, by NIXI-CSC. We understand that any other ambiguous clauses in the RFP, if any, are subject to interpretation NIXI-CSC.

We further declare that additional conditions, variations, deviations if any, found in the proposal other than those listed in Attachment pertaining to any rebates offered, shall not be given effect to.

We undertake, if our bid is accepted, to commence the work on the project immediately upon your Notification of Award to us, and to achieve Completion within the time stated in the Bidding Documents. If our bid is accepted, we undertake to execute all contractual documents and provide all securities & guarantees as required in the bid document (and as amended from time to time).

We undertake that, in competing for (and, if the award is made to us, in executing) the above contract, we will strictly observe the laws against fraud and corruption in force in India namely “Prevention of Corruption Act”.

We agree to abide by this bid, consisting of this letter, the tender fee, EMD, Technical bid and Commercial bid, for a period of bid validity from the date fixed for submission of bids as stipulated in the RFP, and it shall remain binding upon us and may be accepted by you at any time before the expiration of that period.

Until the formal order is placed and final Contract is prepared and executed between us, this bid, together with your written acceptance of the bid and your notification of award, shall constitute a binding contract between us.

(Signature of the Bidder)

Printed Name

Designation
Seal
Date:
Business Address:
Witness:
Address:

ANNEXURE 11

Bank Guarantee

5% of total quoted amount in tender as performance bank guarantee, which will be renewed after one year during AMC. Below is the format of bank guarantee: -

We _____ bank do hereby undertake to pay the amounts due and payable under this guarantee without any demur merely or a demand from '_____' (name of entity for whom bank guarantee is given) stating that the amount claimed is due by way of loss or damage caused to or would cause to or suffered by '(name of entity for whom bank guarantee is given) by reason of any breach by the said tenderer(s) of any of the terms or conditions contained in the said tender or by reason of the said tenderer's failure to keep the tender open. 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. _____ only).

We _____ bank further agree that the guarantee herein contained shall remain in full force and effect during the period that would be taken for the finalization of the said tender and that it shall continue to be enforceable till the said tender is finally decided and order placed on the successful tenderer and/ or till all the dues of (name of Entity for whom Bank Guarantee is given) under/or by virtue of the said tender have been fully paid and its claims satisfied or discharged or till a duly authorized officer of (name of Entity for whom Bank Guarantee is given) certified that the terms and conditions of the said tender have been fully and properly carried out by the said tenderer(s) and accordingly discharges the guarantee.

Unless a demand or claim under this guarantee is made on us in writing on or before the _____ to include 3 months claim over and above the period mentioned in the paragraph for the validity of the bank guarantee in the tender we shall be discharged from all liability under this guarantee thereafter.

We _____ bank, lastly undertake not to revoke this guarantee during its currency except with the previous consent of _____ (name of Entity for whom Bank Guarantee is given) in writing.

Dated _____ day of _____ 2022. Corporate Seal for Bank

ANNEXURE 12

IMPLEMENTATION SCHEDULE (AT THE TIME OF BID SUBMISSION)

Work Description	Time of Delivery
Site inspection	
Initiation of procurement of the identified components as part of the BOM	
Civil work initiation	
Civil work completion	
Delivery of electrical components	
Installation of electrical components	
Security system installation	
Electrical work including DG set & UPS	
Electrical work completion	
Completion of Installation of other devices including equipment like HVAC (precession and comfort AC), Smoke & Fire detection and control system, Access Control System etc. and verification of workability of the all components	
DC build completion and going live	
Acceptance testing	
Facility Management Service	
Others	

For.....

Designation:

(Signature and seal of authorized person)