

Tender Document

Tender No. 606112017-1

Data Center Facility for Punjab Civil Secretariat, Lahore under the Project Titled “IT Based Profiling (ITBP) of Government Employees”



Punjab Information Technology Board (PITB)

13th Floor, Arfa Software Technology Park (ASTP),

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Important Note:

Bidders must ensure that they submit all the required documents indicated in the Bidding Documents without fail. Bids received without, undertakings, valid documentary evidence, supporting documents and the manner for the various requirements mentioned in the Bidding Documents or test certificates are liable to be rejected at the initial stage itself. The data sheets, valid documentary evidences for the critical components as detailed hereinafter should be submitted by the Bidder for scrutiny.

Applicability of Punjab Procurement Rules, 2014

This Bidding Process will be governed under Punjab Procurement Rules, 2014, as amended from time to time and instructions of the Government of the Punjab received during the completion of the project.

1. Invitation to Bid

1.1 PPRA Rules to be followed

Punjab Procurement Rules, 2014 will be strictly followed. These may be obtained from PPRA's website.

[http://ppra.punjab.gov.pk/sites/ppra.pitb.gov.pk/files/Final%20Notified%20PPR2014%20\(ammended%20upto%2006.01.2016\).pdf](http://ppra.punjab.gov.pk/sites/ppra.pitb.gov.pk/files/Final%20Notified%20PPR2014%20(ammended%20upto%2006.01.2016).pdf)

In this document, unless otherwise mentioned to the contrary, "Rule" means a Rule under the Punjab Procurement Rules, 2014.

1.2 Mode of Advertisement(s)

As per Rule 12(1&2), this Tender is being placed online at PPRA's website, as well as being advertised in print media.

As per Rule 12(2), this Tender is also placed online at the website of Purchaser. The tender document is available in the office of Punjab Information Technology Board, 13th Floor, Arfa Software Technology Park, 346-B, Ferozepur Road, Lahore & the same may be obtained subject to the payment of cost of printing and provision of the document which is Rs. 1000/-. Tender Document is also available at www.pitb.gov.pk and www.ppra.punjab.gov.pk and may be downloaded free of cost.

All prospective bidders are required to collect a Challan Form from the Procurement Assistant, PITB at above given address; to submit an amount of Rs. 1,000/- in PITB's account. The deposit slip / Challan Form must accompany respective bid.

1.3 Type of Open Competitive Bidding

As per Rule 38(2)(a), Single Stage - Two Envelope Bidding Procedure shall be followed. The said procedure is reproduced as follows:

- (i) the bid shall be a single package consisting of two separate envelopes, containing separately the financial and the technical proposals;
- (ii) the envelopes shall be marked as "Financial Proposal" and "Technical Proposal";
- (iii) in the first instance, the "Technical Proposal" shall be opened and the envelope marked as "Financial Proposal" shall be retained unopened in the custody of the procuring agency;
- (iv) the procuring agency shall evaluate the technical proposal in the manner prescribed in advance, without reference to the price and shall reject any proposal which does not conform to the specified requirements;
- (v) during the technical evaluation no amendments in the technical proposal shall be permitted;
- (vi) after the evaluation and approval of the technical proposals, the procuring agency shall open the financial proposals of the technically accepted bids, publically at a time, date and venue announced and communicated to the bidders in advance, within the bid validity period;
- (vii) the financial bids found technically nonresponsive shall be returned un-opened to the respective bidders; and
- (viii) the lowest evaluated bidder shall be awarded the contract.

2. Bidding Details (Instructions to Bidders)

All bids must be accompanied by Bid Security (Earnest Money), as part of Financial bid and as per provisions of the clause “Bid Security” of this document in favor of **“Punjab Information Technology Board”**. The complete bids as per required under this tender document, must be delivered into the Tender Box No.1, placed at reception of Punjab Information Technology Board, Lahore, not later than 1500 hours on last date of submission of bids i.e. **20th November, 2017**, late bids shall not be considered. The Technical bids shall be publicly opened in the Committee Room of Punjab Information Technology Board, 13th Floor, Arfa Software Technology Park, 346-B, Ferozepur Road, Lahore, at 1530 hours on **20th November, 2017**. In case the last date of bid submission falls in / within the official holidays / weekends of the Purchaser, the last date for submission of the bids shall be the next working day.

Queries of the Bidders (if any) for seeking clarifications regarding the specifications of the hardware / Equipment must be received in writing to the Purchaser till **11th November, 2017**. Any query received after said date may not be entertained. All queries shall be responded to within due time. PITB may host a Q&A session, if required, at PITB premises (13th Floor, Arfa Software Technology Park, 346-B, Ferozepur Road, Lahore). All Bidders shall be informed of the date and time in advance.

The bidder shall submit bids which comply with the Bidding Document. **Alternative bids and options shall not be considered**. The attention of bidders is drawn to the provisions of this tender document Clause regarding **“Determination of Responsiveness of Bid”** and **“Rejection / Acceptance of the Tender”** for making their bids substantially responsive to the requirements of the Bidding Document.

It will be the responsibility of the Bidder that all factors have been investigated and considered while submitting the Bid and no claim whatsoever including those of financial adjustments to the contract awarded under this Bid Process will be entertained by the Purchaser. Neither any time schedule, nor financial adjustments arising thereof shall be permitted on account of failure by the Bidder.

It must be clearly understood that the Terms and Conditions and Specifications are intended to be strictly enforced. No escalation of cost except arising from increase in quantity by the Bidder on the demand and approval of the Purchaser will be permitted throughout the period of completion of the contract.

The Bidder should be fully and completely responsible for all the deliveries and deliverables to the Purchaser.

The Primary Contact & Secondary Contact for all correspondence in relation to this bid is as follows:

Primary Contact

Sajjad Ghani

Director IT (Infrastructure)

Email: sajjad@pitb.gov.pk

Arfa Software Technology Park, 346-B, Ferozepur Road, Lahore, Pakistan.

Jamal Yaqub

Joint Director IT (Operations)

Email: Jamal.yaqub@pitb.gov.pk;

Arfa Software Technology Park, 346-B, Ferozepur Road, Lahore, Pakistan.

Secondary Contact

Muhammad Shaukat Qureshi

Joint Director (Procurement)

Email: muhammad.qureshi@pitb.gov.pk;

Arfa Software Technology Park, 346-B, Ferozepur Road,
Lahore, Pakistan.

Bidders should note that during the period from the receipt of the bid and until further notice from the Primary Contact, all queries should be communicated via the Primary Contact and in writing (e-mail) only. In the case of an urgent situation where the Primary Contact cannot be contacted, the bidder may alternatively direct their enquiries through the Secondary Contact.

Bidders are also required to state, in their proposals, the name, title, contact number (landline, mobile), fax number and e-mail address of the bidder's authorized representative through whom all communications shall be directed until the process has been completed or terminated.

The Purchaser will not be responsible for any costs or expenses incurred by bidders in connection with the preparation or delivery of bids.

Failure to supply required items/services within the specified time period will invoke penalty as specified in this document.

TERMS AND CONDITIONS OF THE TENDER

3. Definitions

In this document, unless there is anything repugnant in the subject or context:

- 3.1 "Authorized Representative" means any representative appointed, from time to time, by the Client, the Purchaser or the Contractor.
- 3.2 "Availability and Reliability" means the probability that a component shall be operationally ready to perform its function when called upon at any point in time.
- 3.3 "Client" means Project lead of technical wing of the Purchaser for whose' particular project the Goods / Services have been procured or any other person, duly appointed in writing, by the Client, for the time being or from time to time, to act as Client for the purposes of the Contract.
- 3.4 "Bidder/Tenderer" means the interested Firm/Company/Supplier/Distributors that may provide or provides the I.T related hardware/equipment etc. and related services to any of the public/private sector organization under the contract and have registered for the relevant business thereof.
- 3.5 "Commencement Date of the Contract" means the date of signing of the Contract between the Purchaser and the Contractor.
- 3.6 "Contract" means the agreement entered into between the Purchaser and the Contractor, as recorded in the Contract Form signed by the parties, including all Schedules and Attachments thereto and all documents incorporated by reference therein.
- 3.7 "Contractor / Vendor" means the Tenderer whose bid has been accepted and awarded Letter of Acceptance for a specific item followed by the signing of Contract.
- 3.8 "Contract Price" means the price payable to the Contractor under the Contract for the full and proper performance of its contractual obligations.
- 3.9 "Contract Value" means that portion of the Contract Price adjusted to give effect to such additions or deductions as are provided for in the Contract which is properly apportion-able to the Goods or Services in question.
- 3.10 "Defects Liability Expiry Certificate" means the certificate to be issued by the Client to the Contractor, in accordance with the Contract.
- 3.11 "Day" means calendar day.
- 3.12 "Defects Liability Period" means the warranty period following the taking over, during which the Contractor is responsible for making good, defects and damage in Goods and Services provided, under the Contract.
- 3.13 "Force Majeure" means an event beyond the control of the Contractor and not involving the Contractor's fault or negligence and not foreseeable. Such events may include, but are not restricted to, acts of the Purchaser in its sovereign capacity, wars, revolutions, fires, floods, epidemics, quarantine restrictions, and freight embargoes.
- 3.14 "Goods" means hardware, equipment, machinery, and/or other materials which the Contractor is required to supply to the Purchaser under the Contract.
- 3.15 "Person" includes individual, association of persons, firm, company, corporation, institution and organization, etc., having legal capacity.
- 3.16 "Prescribed" means prescribed in the Tender Document.
- 3.17 "Purchaser" means the Punjab Information Technology Board (PITB) or any other person for the time being or from time to time duly appointed in writing by the Purchaser to act as Purchaser for the purposes of the Contract.
- 3.18 "Origin" shall be considered to be the place where the Goods are produced or from where the Services are provided. Goods are produced when, through manufacturing, processing or assembling of components, a commercially recognized product results that is substantially

different in basic characteristics or in purpose or utility from its components. The origin of Goods and Services is distinct from the nationality of the Contractor.

- 3.19 "Services" means installation, configuration, deployment, commissioning, testing, training, support, after sale service, etc. of Goods and other such obligations which the Contractor is required to provide to the Purchaser under the Contract.
- 3.20 "Taking-Over Certificate" means the certificate to be issued by the Client to the Contractor, in accordance with the Contract.
- 3.21 "Works" means work to be done by the Contractor under the Contract.
- 3.22 "Eligible" is defined as any country or region that is allowed to do business in Pakistan by the law of Government of Pakistan

4. Headings and Titles

In this document, headings and titles shall not be construed to be part thereof or be taken into consideration in the interpretation of the document and words importing the singular only shall also include the plural and vice versa where the context so requires.

5. Notice

- 5.1 In this document, unless otherwise specified, wherever provision is made for exchanging notice, certificate, order, consent, approval or instructions amongst the Contractor, the Purchaser and the Client, the same shall be:
 - 5.1.1 in writing;
 - 5.1.2 issued within reasonable time;
 - 5.1.3 served by sending the same by courier or registered post to their principal office in Pakistan or such other address as they shall notify for the purpose; and
 - 5.1.4 The words "notify", "certify", "order", "consent", "approve", "instruct", shall be construed accordingly.

6. Tender Scope

- 6.1 Punjab Information Technology Board (PITB), (hereinafter referred to as "the Purchaser") invites / requests Proposals (hereinafter referred to as "the Tenders") for setting up Concurrent Maintainable IT data center new retrofit out site covering Power cooling and ITDC monitoring infrastructure completion supporting entire passive infrastructure deployment to achieve smooth and uninterrupted data center operations 24x7 eliminating all single point of failures in Power and cooling with best possible and maximum protection level overall (hereinafter referred to as "the Goods") and for installation, configuration and after-sale support, of said Goods (hereinafter referred to as "the Services").
- 6.2 The equipment / IT equipment will be delivered and deployed in Lahore.

7. Tender Eligibility/Qualification Criteria

- 7.1 Eligible Bidder/Tenderer is a Bidder/Tenderer who:
 - 7.1.1 has a registered/incorporated company/firm in Pakistan with relevant business experience of last three (3) years as on;
 - 7.1.2 Must be registered with Tax Authorities as per prevailing latest tax rules (Only those companies which are validly registered with sales tax and income tax departments and having sound financial strengths can participate);
 - 7.1.3 has valid Registration of General Sales Tax (GST) & National Tax Number (NTN);
 - 7.1.4 Has submitted bid for complete and relevant bid security. Non-compliance of the same shall cause rejection of the bid;
 - 7.1.5 must be involved in Data Center design and supply, installation, configuration and technical support of Network switches, Firewall, Servers, storage etc. for last three (3) years as on;

- 7.1.6 Has authorization of the principal / manufacturer for cooling/power components, network switches/firewall, servers and storage;
- 7.1.7 has not been blacklisted by any of Provincial or Federal Government Department, Agency, Organization or autonomous body or Private Sector Organization anywhere in Pakistan. (Submission of undertaking), failing which will cause rejection of the bid;
- 7.1.8 has the required relevant qualified personnel and enough strength to fulfill the requirement of assignment.
- 7.1.9 Conforms to the clause of "Responsiveness of Bid" given herein this tender document.
- 7.1.10 Goods and Services can only be supplied / sourced / routed from "origin" in "eligible" member countries.
 - a. Eligible" is defined as any country or region that is allowed to do business in Pakistan by the law of Government of Pakistan.
 - b. "Origin" shall be considered to be the place where the Goods are produced or from which the Services are provided. Goods are produced when, through manufacturing, processing or substantial and major assembling of components, a commercially recognized product results that is substantially different in basic characteristics or in purpose or utility from its components.

Note: Verifiable documentary proof for all above requirements is a mandatory requirement, noncompliance will lead to disqualification.

8. Tender Cost

The Tenderer shall bear all costs / expenses associated with the preparation and submission of the Tender(s) and the Purchaser shall in no case be responsible / liable for those costs / expenses.

9. Joint Venture / Consortium

Joint venture / Consortium are not eligible for this tender.

10. Examination of the Tender Document

The Tenderer is expected to examine the Tender Document, including all instructions and terms and conditions.

11. Clarification of the Tender Document

The Tenderer may require further information or clarification of the Tender Document, within 05 (five) calendar days of issuance of tender in writing. The clarification and its replies will be shared with all prospective bidders.

Bidders should note that during the period from the receipt of the bid and until further notice from the Primary Contact given herein this document, all queries should be communicated via the Primary Contact and in writing (e.g. e-mail & letter) only. In the case of an urgent situation where the Primary Contact cannot be contacted, the bidder may alternatively direct their enquiries through the Secondary Contact.

12. Amendment of the Tender Document

- 12.1 The Purchaser may, at any time prior to the deadline for submission of the Tender, at its own initiative or in response to a clarification requested by the Bidder(s), amend the Tender Document, on any account, for any reason. All amendment(s) shall be part of the Tender Document and binding on the Bidder(s).
- 12.2 The Purchaser shall notify the amendment(s) in writing to the prospective Tenderers as per Punjab Procurement Rules, 2014.
- 12.3 The Purchaser may, at its exclusive discretion, amend the Tender Document to extend the deadline for the submission of the Tender as per Rule-25(4) of Punjab Procurement Rules, 2014.

13. Preparation / Submission of Tender

- 13.1 The Tenderer must bid for all items.
- 13.2 The Tender and all documents relating to the Tender, exchanged between the Tenderer and the Purchaser, shall be in English. Any printed literature furnished by the Tenderer in another language shall be accompanied by an English translation which shall govern for purposes of interpretation of the Tender.
- 13.3 The Tender shall be filed in / accompanied by the prescribed Forms, Annexes, Schedules, Charts, Drawings, Documents, Brochures, Literature, etc. which shall be typed, completely filled in, stamped and signed by the Tenderer or his Authorized Representative. In case of copies, signed and stamped photocopies may be submitted. If volume of the bid contains various set(s) of documents the same must be properly numbered and tagged in binding shape.
- 13.4 The Tender shall be in two parts i.e. the technical proposal and the financial proposal. Each proposal shall be in two sets i.e. the original and the copy. In the event of any discrepancy between the original and the duplicate, the original shall govern.
- 13.5 Technical Proposal shall comprise the following, **without quoting the price**:
- 13.6 Technical Proposal Form (**Annexure-B**)
 - 13.6.1 Undertaking (All terms & conditions and qualifications listed anywhere in this tender document have been satisfactorily vetted) and Affidavit (Integrity Pact) (**Annexure-G&H**)
 - 13.6.2 Certificate of Company/Firm Registration/Incorporation under the laws of Pakistan
 - 13.6.3 Covering letter duly signed and stamped by authorized representative. (**Annexure-E**)
 - 13.6.4 Authorization Certificate / document from the principal / manufacturer for cooling/power components, network switches/firewall, servers and storage
 - 13.6.5 Evidence of eligibility of the Tenderer and the Goods
 - 13.6.6 Evidence of conformity of the Goods / the Services to the Tender Document
 - 13.6.7 Undertaking and Evidence that the quoted Goods are genuine, brand new, non-refurbished, un-altered in any way, of the most recent / current model, imported through proper channel, and incorporate all recent improvements in design and materials
 - 13.6.8 Technical Brochures / Literature
 - 13.6.9 Details of Warranty and After-Sale Service
 - 13.6.10 Submission of undertaking that the firm is not blacklisted by any of Provincial or Federal Government Department, Agency, Organization or autonomous body or Private Sector Organization anywhere in Pakistan.
 - 13.6.11 Valid Registration Certificate for Income Tax & Sales Tax
 - 13.6.12 Power of Attorney, if an authorized representative is appointed (**Annexure-F**)
- 13.7 The Financial Proposal shall comprise the following:
 - 13.7.1 Financial Proposal Form (**Annexure-C**)
 - 13.7.2 Price Schedule (**Annexure-D**)
 - 13.7.3 Bid Security (**Earnest Money**), as per provisions of the clause Bid Security of this document.
- 13.8 The Tenderer shall seal the Original Technical Proposal in an envelope duly marked as under:

Original Technical Tender for

Tender Name. [Name of Tender]

Tender No. **606112017-1**

Lot No:

[Name of the Purchaser]

[Address of the Purchaser]

[Name of the Tenderer]

[Address of the Tenderer]

[Phone No. of the Tenderer]

- 13.9 The Tenderer shall seal the Duplicate Technical Tender in an envelope duly marked as under:

Duplicate Technical Proposal for

Tender Name. [Name of Tender]

Tender No. **606112017-1**

Lot No:

[Name of the Purchaser]

[Address of the Purchaser]

[Name of the Tenderer]

[Address of the Tenderer]

[Phone No. of the Tenderer]

- 13.10 The Tenderer shall follow the same process for the Financial Tender.

- 13.11 The Tenderer shall again seal the sealed envelopes of Original Technical Proposal and the Original Financial Proposal in an outer envelope, duly marking the envelope as under:

Original Tender for

Tender Name. [Name of Tender]

Tender No. **606112017-1**

Lot No:

Strictly Confidential

[Name of the Purchaser]

[Address of the Purchaser]

[Name of the Tenderer]

[Address of the Tenderer]

[Phone No. of the Tenderer]

- 13.12 The Tenderer shall again seal the sealed envelopes of Duplicate Technical Proposal and the Duplicate Financial Proposal in an outer envelope, duly marking the envelope as under:

Duplicate Tender for

Tender Name. [Name of Tender]

Tender No. **606112017-1**

Lot No:

Strictly Confidential

[Name of the Purchaser]

[Address of the Purchaser]

[Name of the Tenderer]

[Address of the Tenderer]

[Phone No. of the Tenderer]

- 13.13 The Tenderer shall enclose soft copies of the Technical Proposal, including all Forms, Annexes, Schedules, Charts, Drawings, Documents, Brochures, Literature, etc., in the form of MS Word Documents, MS Excel Worksheets and Scanned images, with the hard copies.
- 13.14 The Tender shall be dropped in the prescribed Tender Box placed at the Reception of the Purchaser's office, not later than 1500 hours on last date of submission of bids. No late bid shall be accepted.
- 13.15 This is made obligatory to affix authorized signatures with official seal on all original and duplicate (copies) documents, annexures, copies, certificates, brochures, literature, drawings, letters, forms and all relevant documents as part of the bids submitted by the tenderer.

14. Tender Price

- 14.1 The quoted price shall be:
- 14.1.1 best / final / fixed and valid until completion of all obligations under the Contract i.e. not subject to variation / escalation;
- 14.1.2 in Pak Rupees;
- 14.1.3 inclusive of all taxes, duties, levies, insurance, freight, etc.;
- 14.1.4 Including all charges up to the delivery point at various Punjab Government Offices in Punjab (if required).
- 14.2 If not specifically mentioned in the Tender(s), it shall be presumed that the quoted price is as per the above requirements.
- 14.3 Where no prices are entered against any item(s), the price of that item shall be deemed be free of charge, and no separate payment shall be made for that item(s).
- 14.4 In case of locally produced Equipment/Service, the price shall include all customs duties and sales and other taxes already paid or payable on the components and raw materials used in the manufacture or assembly of the item. In case of Contract of imported Equipment/Services offered Ex-Warehouse/Off-the-Shelf from within the Purchaser's country, import duties and sales and other taxes already paid shall be shown separately (if required by the Purchaser).

15. Bid Security (Earnest Money)

- 15.1 The bid security amount has been calculated as per provisions of Rule-27 "Bid Security" of PPRA Rules, 2014 (i.e. not exceeding five percent of the estimated cost), the Tenderer shall furnish the Bid Security (Earnest Money) as under:
 - 15.1.1 for a sum of equivalent to PKR. 1,000,000/- (One million rupees only);
 - 15.1.2 denominated in Pak Rupees;
 - 15.1.3 As part of financial bid envelope, failing which will cause rejection of bid.
 - 15.1.4 in the form of Demand Draft / Pay Order / Call Deposit Receipt, in the name of the Purchaser;
 - 15.1.5 have a minimum validity period of one twenty (120) days from the last date for submission of the Tender or until furnishing of the Performance Security, whichever is later.
- 15.2 The Bid Security shall be forfeited by the Purchaser, on the occurrence of any / all of the following conditions:
 - 15.2.1 If the Tenderer withdraws the Tender during the period of the Tender validity specified by the Tenderer on the Tender Form; or
 - 15.2.2 If the Tenderer does not accept the corrections of his Total Tender Price; or
 - 15.2.3 If the Tenderer, having been notified of the acceptance of the Tender by the Purchaser during the period of the Tender validity, fails or refuses to furnish the Performance Security, in accordance with the Tender Document.
- 15.3 The Bid security shall be returned to the technically unsuccessful Tenderer with unopened/sealed financial bid while the unsuccessful bidders of financial bid opening procedure will be returned the Bid Security only. The Bid Security shall be returned to the successful Tenderer upon furnishing of the Performance Security.

16. Tender Validity

The Tender shall have a minimum validity period of ninety (90) days from the last date for submission of the Tender. The Purchaser may solicit the Tenderer's consent to an extension of the validity period of the Tender. The request and the response thereto shall be made in writing. If the Tenderer agrees to extension of validity period of the Tender, the validity period of the Bid Security shall also be suitably extended. The Tenderer may refuse extension of validity period of the Tender, without forfeiting the Bid security.

17. Modification / Withdrawal of the Tender

- 17.1 The Tenderer may, by written notice served on the Purchaser, modify or withdraw the Tender after submission of the Tender, prior to the deadline for submission of the Tender.
- 17.2 The Tender, withdrawn after the deadline for submission of the Tender and prior to the expiration of the period of the Tender validity, shall result in forfeiture of the Bid Security.

18. Opening of the Tender

- 18.1 Tenders (Technical Bids) shall be opened at 1530 hours on the last date of submission of bids i.e. **20th November, 2017**, in the presence of the Tenderer(s) for which they shall ensure their presence without further invitation, as per provision of Rule-30 of PPRA Rules, 2014. In case the last date of bid submission falls in / within the official holidays / weekends of the Purchaser, the last date for submission of the bids shall be the next working day.
- 18.2 The Tenderer's name, modifications, withdrawal, security, attendance of the Tenderer and such other details as the Purchaser may, at its exclusive discretion, consider appropriate, shall be announced and recorded.
- 18.3 No tenderer or its representative will be allowed to keep any digital device (camera, audio recorder, cell phone etc.) during tender opening meeting at given time and location.

19. Clarification of the Tender

The Purchaser shall have the right, at his exclusive discretion, to require, in writing, further information or clarification of the Tender, from any or all the Tenderer(s). No change in the price or substance of the Tender shall be sought, offered or permitted except as required to confirm the corrections of arithmetical errors discovered in the Tender. Acceptance of any such correction is sole discretion of the purchaser

20. Determination of Responsiveness of the Bid (Tender)

- 20.1 The Purchaser shall determine the substantial responsiveness of the Tender to the Tender Document, prior to the Tender evaluation, on the basis of the contents of the Tender itself without recourse to extrinsic evidence. A substantially responsive Tender is one which:
 - 20.1.1 meets the eligibility criteria given herein this tender document/ the Goods / the Services;
 - 20.1.2 meets the Technical Specifications for the Goods / the Services;
 - 20.1.3 meets the delivery period / point for the Goods / the Services;
 - 20.1.4 in compliance with the rate and limit of liquidated damages;
 - 20.1.5 offers fixed price quotations for the Goods / the Services, whereby no optional offer / bid or price is allowed;
 - 20.1.6 is accompanied by the required Bid Security as part of financial bid envelope;
 - 20.1.7 In compliance with the Preparation/Submission of Tender in a manner prescribed in this tender document clause-13;
 - 20.1.8 Conforms to all terms and conditions of the Tender Document, without material deviation or reservation.
- 20.2 A material deviation or reservation is one which affects the scope, quality or performance of the Goods or limits the Purchaser's rights or the Tenderer's obligations under the Contract.
- 20.3 The Tender determined as not substantially responsive shall not subsequently be made responsive by the Tenderer by correction or withdrawal of the material deviation or reservation.

21. Correction of errors / Amendment of Tender

- 21.1 The Tender shall be checked for any arithmetic errors which shall be rectified, as follows:
 - 21.1.1 if there is a discrepancy between the amount in figures and the amount in words for the Total Tender Price entered in the Tender Form, the amount which tallies with the Total Tender Price entered in the Price Schedule, shall govern.
 - 21.1.2 if there is a discrepancy between the unit rate and the total price entered in the price Schedule, resulting from incorrect multiplication of the unit rate by the quantity, the unit rate as quoted shall govern and the total price shall be corrected, unless there is an obvious and gross misplacement of the decimal point in the unit rate, in which case the total price as quoted shall govern and the unit rate shall be corrected.
 - 21.1.3 if there is a discrepancy in the actual sum of the itemized total prices and the total tender price quoted in the Price Schedule, the actual sum of the itemized total prices shall govern.
- 21.2 The Tender price as determined after arithmetic corrections shall be termed as the Corrected Total Tender Price which shall be binding upon the Tenderer.
- 21.3 Adjustment shall be based on corrected Tender Prices. The price determined after making such adjustments shall be termed as Evaluated Total Tender Price.
- 21.4 No credit shall be given for offering delivery period earlier than the specified period.

22. TECHNICAL EVALUATION CRITERIA

PASS MARKS: A technically eligible bidder, based on conditions listed in this document, not meeting the 70% pass marks limit will be rejected in Technical Evaluation, and its sealed/unopened Financial Proposal shall be returned back. All bidders scoring greater than or equal to 70% of the marks will be accepted in technical proposal, and their financial bids will be opened.

PROVISO: Provided that if NONE or ONLY ONE (single) bidder exceeds the 70% pass mark, then the Purchaser SHALL decrease the Pass Mark limit to 60%. In other words, if TWO or more bidders exceed 70%, then the Pass Mark will NOT be decreased to 60%.

If Pass Marks are decreased to 60%, then ALL bidders with scores greater than or equal to 60% shall be considered EQUALLY as approved in the Technical Evaluation, and their Financial Bids shall be opened.

The Bidders who have duly complied with the Eligibility/Qualification and Evaluation Criteria will be eligible for further processing.

The Bids which do not conform to the Technical Specifications or Bid conditions or the Bids from the Bidders without adequate capabilities for supply and maintenance / warranty services will be rejected.

The Eligible/Technically Qualified Bidders will be considered for further evaluation.

The Technical proposals shall be evaluated by the technical evaluation committee in the light of following evaluation criteria:

Category	Requirements	Documents/D escription
Legal (Mandatory)	Relevant business experience of last three (3) years	Required
	Valid Income Tax Registration	Required
	Valid General Sales Tax Registration (Status = Active with FBR)	Required
	Vendor must have deployed at least 02 Data Centers in last 3 years	Required
	Submission of undertaking that the firm is not blacklisted by any of Provincial or Federal Government Department, Agency, Organization or autonomous body or Private Sector Organization anywhere in Pakistan.	Required
	In full compliance of the Execution Schedule and Delivery Period mentioned in tender document (Undertaking).	Required
	Authorization Certificate / document from the principal / manufacturer for cooling/power components, network switches/firewall, servers and storage	Required
	Compliance to the technical specifications of hardware (all items) to be procured mentioned vide Annex-A of this document and product technical Brochure that should include specific make and model with clarity of offered specifications must be enclosed with the bid	Required

Sr. #	Requirements	Marks	Documents/Description
1	Vendor must have deployed at-least two (2) Data Centre's POWER/COOLING/DCIM integration project in last three (3) years of 10 Racks or above.	50	Contract/Purchase Orders etc.
		One (1) Project = 25 Two (2) Projects = 50	

2	Customer references of Rating III or equivalent Data Center for which Vendor has actually provided designing and deployment services sought under this RFP.	50	Project's and customer's List along with customer's letter/any document which verify the claim
		1 Project = 25 2 Projects = 50	
3	Related Projects worth 100 million or above in last three (3) years	50	Contract/Purchase orders etc.
		1 Project = 25 2 Projects = 50	
Financial Strength	Average Annual turnover of last 3 years (Max points 100) (Verifiable from financial statements)	30 to 39 million	25 points
		40 to 49 million	50 points
		50 to 59 million	75 points
		60 million and above	100 points

Note: Verifiable documentary proof for all above requirements and criteria points are required and marks will be awarded on the basis of these verifiable proofs. Bidder must include checklist for above requirements in their bid.

23. FINANCIAL PROPOSAL EVALUATION

23.1 Technically qualified/successful bidder(s)/Tenderer(s) shall be called for opening of the Financial Proposal(s). The Financial Proposals will be opened in the presence of the Bidders at the time and venue indicated by the Purchaser accordingly. The technically Eligible/Successful Bidder(s)/Tenderer(s) or their authorized representatives shall be allowed to take part in the Financial Proposal(s) opening.

23.2 Financial Proposal evaluation will be conducted under the Punjab Procurement Rules, 2014. The Price evaluation will include all duties, taxes and expenses etc. In case of any exemption of duties and taxes made by the Government in favor of the Purchaser, the contractor shall be bound to adjust the same in the Financial Proposal.

23.2.1 In cases of discrepancy between the cost/price quoted in Words and in Figures, the lower of the two will be considered.

23.2.2 In evaluation of the price of an imported item, the price will be determined and considered inclusive of the customs and other import duties etc.;

23.2.3 In evaluation of the price of articles/goods which are subject to excise duty, sales tax, income tax or any other tax or duty levied by the Government, the price will be determined and considered inclusive of such duties and taxes.

23.3 The Purchaser will not be responsible for any erroneous calculation of taxes and all differences arising out as above shall be fully borne by the Successful Bidder. However, any subsequent changes in rates or structure of applicable taxes by the Gov. at any time during execution/evaluation period will be dealt with mutual consent.

24. Rejection / Acceptance of the Bid

- 24.1 The Purchaser shall have the right, at his exclusive discretion, to increase/decrease the quantity of any or all item(s) without any change in unit prices or other terms and conditions, at the time of order placement. The Purchaser may reject all bids or proposals at any time prior to the acceptance of a bid or proposal. The Purchaser shall upon request communicate to any bidder, the grounds for its rejection of all bids or proposals, but shall not be required to justify those grounds. The Purchaser shall incur no liability, solely, by virtue of its invoking sub-rule (1) of Rule-35 of Punjab Procurement Rules, 2014 towards the bidders. However, bidders shall be promptly informed about the rejection of the bids, if any (As per Rule 35 of Punjab Procurement Rules, 2014).
- 24.2 The Tender shall be rejected if it is:
- 24.2.1 substantially non-responsive in a manner prescribed in this tender document clause-20; or
 - 24.2.2 submitted in other than prescribed forms, annexes, schedules, charts, drawings, documents / by other than specified mode; or
 - 24.2.3 incomplete, partial, conditional, alternative, late; or
 - 24.2.4 bid not submitted and relevant bid security is not submitted.
 - 24.2.5 subjected to interlineations / cuttings / corrections / erasures / overwriting; or
 - 24.2.6 the Tenderer refuses to accept the corrected Total Tender Price; or
 - 24.2.7 the Tenderer has conflict of interest with the Purchaser; or
 - 24.2.8 the Tenderer tries to influence the Tender evaluation / Contract award; or
 - 24.2.9 the Tenderer engages in corrupt or fraudulent practices in competing for the Contract award;
 - 24.2.10 the Tenderer fails to meet all the requirements of Tender Eligibility / Qualification Criteria (Clause-7);
 - 24.2.11 the Tenderer fails to meet the evaluation criteria requirements (clause-22);
 - 24.2.12 the tenderer has been blacklisted by any public or private sector organization;
 - 24.2.13 the tenderer has been served any legal notices or displeasure letters by any public sector organization on serious failures to provide satisfactory services;
 - 24.2.14 the tenderer has mentioned any financial implication(s) in the financial proposal that is in contradiction to this document and Government rules and regulations.
 - 24.2.15 there is any discrepancy between bidding documents and bidder's proposal i.e. any non-conformity or inconsistency or informality or irregularity in the submitted bid.
 - 24.2.16 the Tenderer submits any financial conditions as part of its bid which are not in conformity with tender document.
 - 24.2.17 Non-submission of verifiable proofs against the mandatory as well as general documentary, qualification and eligibility related requirements.
 - 24.2.18 If the rates quoted by vender are not workable or on higher side etc.

25. Award Criteria

- 25.1. At first step, eligible bidder(s)/tenderer(s) as per clause-7 (Tender Eligibility) of this tender document fulfilling the qualification and technical evaluation criteria will stand technically qualified.
- 25.2. At second step, technically qualified and successful bidder(s)/tenderer(s) will be evaluated in the light of all Pre-Conditions, necessary requisites and shall be selected on lowest cost quoted as per rules and fulfilling all codal formalities, irrespective of their score in the previous step.

26. Acceptance Letter

As per provisions of Rule (55) of Punjab Procurement Rules 2014, the Purchaser shall issue the Acceptance Letter to the successful Tenderer, at least after 10 days of announcement of

bid evaluation reports (Ref. Rule-37 of PPRA Rules, 2014) and prior to the expiry of the original validity period or extended validity period of the Tender, which shall constitute a contract, until execution of the formal Contract.

27. Performance Security

- 27.1 The successful Tenderer/The Contractor shall furnish Performance Security as under:
- 27.1.1 within twenty eight (28) days of the receipt of the Acceptance Letter from the Purchaser;
 - 27.1.2 Performance security (, if the bidder is successful) would be submitted by the Bidder;
 - 27.1.3 in the form of a Bank Guarantee, issued by a scheduled bank operating in Pakistan, as per the format provided in the Tender Document;
 - 27.1.4 for a sum equivalent to 10% of the contract value;
 - 27.1.5 denominated in Pak Rupees;
 - 27.1.6 Have a minimum validity period until the date of expiry of warranty period, support period or termination of services, or fulfillment of all obligations under the contract, whichever is later. No other shape or form of performance security shall be acceptable with any validity less than the prescribed time period.
- 27.2 The Performance Security shall be payable to the Purchaser, on occurrence of any / all of the following conditions:
- 27.2.1 If the Contractor commits a default under the Contract;
 - 27.2.2 If the Contractor fails to fulfill the obligations under the Contract;
 - 27.2.3 If the Contractor violates any of the terms and conditions of the Contract.
- 27.3 The Contractor shall cause the validity period of the performance security to be extended for such period(s) as the contract performance may be extended. The Performance Security shall be returned to the Tenderer within thirty working days after the expiry of its validity on written request from the Contractor.
- 27.4 In case the Contractor fails to furnish Performance security in the shape of bank guarantee within the stipulated period given under Letter of Acceptance and subsequent formal contract, or till end of the currency of the said contract, the amount of bank guarantee, as required, shall be deducted from the amount payable to the Contractor.

28. Redressal of grievances by the procuring agency

- 28.1 The Purchaser has constituted a committee comprising of odd number of persons, with proper powers and authorizations, to address the complaints of bidders that may occur prior to the entry into force of the procurement contract.
- 28.2 Any bidder feeling aggrieved by any act of the Purchaser after the submission of his bid may lodge a written complaint concerning his grievances not later than ten days after the announcement of the bid evaluation report.
- 28.3 The committee shall investigate and decide upon the complaint within fifteen days of the receipt of the complaint.
- 28.4 Mere fact of lodging of a complaint shall not warrant suspension of the procurement process.
- 28.5 Any bidder not satisfied with the decision of the committee of the Purchaser may lodge an appeal in the relevant court of jurisdiction.

TERMS & CONDITIONS OF THE CONTRACT

Contract Title:

Data Center Facility for Punjab Civil Secretariat, Lahore under the Project Titled “IT Based Profiling (ITBP) of Government Employees”

[Name of Contractor]

Dated:

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III.	Technical Specifications

This CONTRACT AGREEMENT (this “Contract”) made as of the [day] of [month], [year], between [full legal name of the Purchaser] (the “Purchaser”), on the one part,

and

[full legal name of Contractor], on the other part severally liable to the Purchaser for all of the Contractor’s obligations under this Contract and is deemed to be included in any reference to the term “the Contractor.”

RECITALS

WHEREAS,

- (a) The Government through the Purchaser intends to spend a part of its budget / funds for making eligible payments under this contract. Payments made under this contract will be subject, in all respects, to the terms and conditions of the Contract in lieu of the consulting services as described in the contract.
- (b) The Purchaser has requested the Contractor to provide certain supply of Goods/items as described in Tender Document; and
- (c) The Contractor, having represented to the Purchaser that it has the required professional skills, and personnel and technical resources, has agreed to provide such services on the terms and conditions set forth in this Contract.

NOW THEREFORE, the Parties to this Contract agree as follows:

- 1. The Contractor hereby covenants with the Purchaser to supply the Goods and provide the Services and to remedy defects / damage therein, at the time and in the manner, in conformity in all respects with the provisions of the Contract, in consideration of the payments to be made by the Purchaser to the Contractor.
- 2. The Purchaser hereby covenants with the Contractor to pay the Contractor, the Contract Price or such other sum as may become payable, at the times and in the manner, in conformity in all respects with the provisions of the Contract, in consideration of supply of the Goods and provision of the Services and remedying of defects / damage therein.
- 3. The following shall be deemed to form and be read and construct as part of this Contract:
 - a. The Tender Document
 - b. Bidder’s Proposal
 - c. Terms and Conditions of the Contract
 - d. Special Stipulations
 - e. The Technical Specifications
 - f. Tender Form
 - g. Price Schedule
 - h. Affidavit(s)
 - i. Authorized Dealership / Agency Certificate
 - j. Performance Security
 - k. Service Level Agreement (SLA) (if required)
 - l. Non-Disclosure Agreement (if required)
 - m. Any Standard Clause acceptable for Purchaser

4. This Contract shall prevail over all other documents. In the event of any discrepancy / inconsistency within the Contract, the above Documents shall prevail in the order listed above.

IN WITNESS whereof the Parties hereto have caused this Contract to be executed in accordance with the laws of **Pakistan** as of the day, month and year first indicated above.

For **[full legal name of the Purchaser]:**

For **[full legal name of the Contractor]:**

Signature

Signature

Name

Name

Witnessed By:

Witnessed By:

WITNESSES

Signature _____
CNIC # _____
Name _____
Designation _____
Address _____

Signature _____
CNIC # _____
Name _____
Designation _____
Address _____

II. General Conditions of Draft Contract

29. **Contract**

The Purchaser shall, after receipt of the Performance Security from the successful Tenderer, send the Contract provided in the Tender Document, to the successful Tenderer. Within three working days of the receipt of such Contract, the Tenderer shall sign and date the Contract and return it to the Purchaser.

30. **Contract Duration**

The Contract duration shall be for the period of one (1) years starting from the date of delivery, installation, deployment & commissioning of all Goods / Equipment / Items till end of warranty / support period and extendable for next two years (if required).

31. **Contract Documents and Information**

The Contractor shall not, without the Purchaser's prior written consent, make use of the Contract, or any provision thereof, or any document(s), specifications, drawing(s), pattern(s), sample(s) or information furnished by or on behalf of the Purchaser in connection therewith, except for purposes of performing the Contract or disclose the same to any person other than a person employed by the Contractor in the performance of the Contract. Disclosure to any such employed person shall be made in confidence and shall extend only as far as may be necessary for purposes of such performance.

32. **Contract Language**

The Contract and all documents relating to the Contract, exchanged between the Contractor and the Purchaser, shall be in English. The Contractor shall bear all costs of translation to English and all risks of the accuracy of such translation.

33. **Standards**

The Goods supplied and the Services provided under this Contract shall conform to the authoritative latest industry standards.

34. **Commercial Availability**

The Goods supplied under this Contract shall be commercially available at the time of signing of the contract. Commercial availability means that such Goods shall have been sold, installed and operationalized in more than two installations initiated under two separate contracts by manufacturer globally / locally.

35. **Patent Right**

The Contractor shall indemnify and hold the Purchaser harmless against all third party claims of infringement of patent, trademark or industrial design rights arising from use of the Goods / the Service or any part thereof.

36. **Execution Schedule**

The Contractor shall deliver Goods/ordered equipment within sixteen (16) weeks from the issuance of Acceptance Letter.

37. **Packing**

The Contractor shall provide such packing of the Goods as is sufficient to prevent their damage or deterioration during storage / transit to their final destination as indicated in the Contract. Packing case size and weights shall take into consideration, where appropriate, the remoteness of the final destination and withstand, without limitation, rough handling, exposure to extreme temperatures, salt and precipitation at all points in storage / transit. The Contractor shall arrange and pay for the packing of the Goods to the place of destination as specified in the Contract, and the cost thereof shall be included in the Contract Price.

38. **Insurance**

The Contractor may provide such insurance of the Goods as is sufficient to protect against their damage or deterioration during storage / transit to their final destination as indicated in the Contract. The Contractor shall arrange and pay for the insurance of the Goods to the place of destination as specified in the Contract, and the cost thereof shall be included in the Contract Price.

39. Labeling

The Goods supplied under the Contract, shall be clearly labeled so as to correspond with the delivered documentation, with proper labeling scheme provided by the Client. All networking equipment, cables, connectors, ports, boxes shall be clearly labeled.

40. Delivery

- 40.1 The Contractor shall indicate his delivery approach clearly specifying the requirements for packing, shipping and unpacking of deliverable hardware with any associated/relevant software and its documentation. The approach shall address shipment of deliverables to the various designated (installation) sites. The approach shall also specify any special shipping constraints such as custom requirements, security requirements, access arrangement or loading dock requirements. The Contractor shall deliver the Goods at various Government Offices in Punjab, as specified by the Purchaser at the time of delivery.
- 40.2 The Goods shall remain at the risk and under the physical custody of the Contractor until the delivery, testing and taking over of the Goods is completed.
- 40.3 The Contractor shall ensure that the Goods shall be delivered complete to enable the testing and training to proceed without interruption. If it shall appear to the Client that the Goods have been or are likely to be delayed by reason of incomplete delivery or for any other reasons, he may require the Contractor at the expense of the Contractor to dispatch the missing items of the Goods or suitable replacements thereof to the site of delivery by the fastest available means including air freight.
- 40.4 The Contractor shall include in the Tender a detailed logistics plan which shall include support details for transportation, mobilization and personnel scheduling during project implementation and the warranty period. The Contractor shall provide maintenance, supply and procurement support necessary for Client to maintain all system, at the contracted performance and reliability level. The Contractor shall arrange and pay for the transport of the Goods to the place of destination as specified in the Contract.

41. Installation and Implementation

- 41.1 The Contractor shall ensure that the implementation design conforms to an open standard by which new services can be added without disruption to existing services.
- 41.2 The Contractor shall ensure that the implementation is fault tolerant. This is accomplished by supplying a set of programs and procedures that allow the system recovery or roll back when a fault is detected.
- 41.3 The Contractor shall provide a document stating step-by-step procedures for installation and disaster recovery to the Purchaser.
- 41.4 The Contractor shall provide all the recent patches and updates for Firmware/Hardware, on a reliable media, with proper labeling, during the installation to the Purchaser.
- 41.5 The Contractor shall configure the system for high availability and reliability, of all hardware and software.
- 41.6 The Contractor shall submit detailed and complete installation, transition and cutover plan for the new system, installation procedures for the new components specifying equipment checkout, installation constraints, operational cutover, maintenance prior to Client acceptance and if special security and/or access arrangements are required.

42. Site Preparation

- 42.1 The Contractor shall be responsible to survey the site, prepare the site, determine power, air conditioning and floor space requirements, identify and install, if necessary, any special / additional power and air conditioning requirements, for the proposed equipment, if any.
- 42.2 The Purchaser and the Client shall facilitate the Contractor in discharge of the above responsibilities.

43. Safety

- 43.1 The Contractor shall be responsible for the embedding of safety features in the inherent design of the equipment, for elimination of identified hazards, including but not limited to high voltage, electromagnetic radiation, sharp points and edges, etc., and reduction of associated risk to personnel and equipment.

- 43.2 The Contractor shall be responsible for the addition of bilingual warnings and caution notices, where hazards cannot be eliminated or risks cannot be reduced.
- 43.3 The Contractor shall be responsible for the protection of the power sources, controls, and critical components of the redundant systems and subsystems by shielding or physical separation when possible.

44. Test Equipment and Tools

The Contractor shall evaluate the existing facilities and abilities of the Client to accomplish corrective and preventive maintenance and support and identify additional skills, test equipment and tools required to maintain and support the new equipment. Such test equipment and tools shall be state of the art in design aimed at providing an efficient, systematic and cost effective repair operation for all replaceable components.

45. Spare Parts and Support

- 45.1 The Contractor shall ensure that the Goods provided by the Contractor, under the Contract are standard and of exact nature, and incorporate all recent improvements in design and materials, unless provided otherwise in the Contract.
- 45.2 The Contractor shall further ensure that the Goods provided by the Contractor, under the Contract shall have no defect, arising from design, materials, installation, configuration, or from any act or omission of the Contractor that may develop under normal use of the provided Goods.
- 45.3 The Contractor shall maintain sufficient backup stock of spare parts and tools locally at sites, for the maintenance of the supplied Goods, during the warranty period.
- 45.4 The Contractor shall ensure availability of spare parts and technical assistance for all components for at least three years, without major changes, after the completion of final acceptance.
- 45.5 The Contractor shall give six months advance notice on any discontinued part(s) with a suggestion for appropriate alternatives failing which will cause forfeiture of Performance Security.
- 45.6 The Contractor shall also identify and provide the following:
- 45.6.1 items (repairable spares, parts and consumable supplies) that are needed to maintain design performance, reliability and availability standards prescribed in the Technical Specifications. The quantity of spare parts and consumable items provided and kept shall be equal to the requirements for one year of operating stock;
 - 45.6.2 critical items, whose failure would cause a system failure;
 - 45.6.3 items of high cost and/or long lead time (over thirty working days);
 - 45.6.4 items whose design reliability is such that normal stock replenishment would not justify maintaining a level of the item in stock.

46. Inspection and Testing

- 46.1 The Client shall inspect and test the Goods supplied, the Services provided or the Works carried out, under the Contract, to verify their conformity to the Technical Specifications.
- 46.2 The inspections and tests shall be conducted at the premises of the Contractor / at the final destination. Where conducted at the premises of the Contractor, the Contractor shall provide all-reasonable facilities and assistance, including access to drawings, production data and online verification from official web site of the Manufacture, to the inspectors, at no charge to the Purchaser.
- 46.3 The Purchaser may reject the Goods, the Services or the Works if they fail to conform to the Technical Specifications, in any test(s) or inspection(s) and the Contractor shall either replace the rejected Goods, Services or Works or make all alterations necessary to meet the Technical Specifications, within three working days, free of cost to the Purchaser.
- 46.4 The Purchaser's post-delivery right to inspect, test and, where necessary, reject the Goods shall in no way be limited or waived by reason of pre-delivery inspection, testing or passing of the Goods.
- 46.5 Nothing contained in this document shall, in any way, release the Contractor from any Warranty or other obligations under the Contract.

47. Taking-Over Certificate

- 47.1 The Contractor shall, by written notice served on the Client with a copy to the Purchaser, apply for a Taking-Over Certificate.
- 47.2 The Client shall, within seven days of receipt of Contractor's application, either issue the Taking-Over Certificate to the Contractor with a copy to the Purchaser, stating the date of successful inspection / testing of the Goods or any portion thereof, for their intended purposes; or reject the application giving the reasons and specifying the work required to be done by the Contractor to enable the Taking-Over Certificate to be issued.
- 47.3 Nothing contained in this document shall, in any way, release the Contractor from any Warranty or other obligations under the Contract.

48. Warranty

- 48.1 The Contractor shall warrant to the Purchaser that the Goods supplied by the Contractor, under the Contract are genuine, brand new, non- refurbished, un-altered in any way, of the most recent or current model, imported through proper channel, and incorporate all recent improvements in design and materials, unless provided otherwise in the Contract.
- 48.2 The Contractor shall further warrant that the Goods/Services supplied by the Contractor, under the Contract shall have no defect, arising from design, materials, workmanship or from any act or omission of the Contractor that may develop under normal use of the supplied Goods/Services.
- 48.3 The Contractor shall provide Manufacturer's warranty for minimum one (1) year (hereinafter referred as Warranty Period) after the issue of Taking-over Certificate in respect of Goods, the Services and the Works, or any portion thereof, as the case may be, which will include:
 - 48.3.1 Free, on site repair / replacement of defective / damaged parts and labor, within 24 hours of intimation;
 - 48.3.2 On site replacement of defective / damaged Goods, if repair of such Goods involves a duration exceeding 24 hours.
- 48.4 The Contractor shall clearly mention Terms and Conditions of service agreements for the Goods supplied after the expiry of initial warranty period. In case of International Warranties, the local authorized dealers shall mention their service and warranty setup, details of qualified engineers, etc.
- 48.5 The Warranty Period shall start from the date of installation / configuration / deployment of the Goods on site.
- 48.6 The Client shall, by written notice served on the Contractor with a copy to the Purchaser, promptly indicate any claim(s) arising under the warranty.
- 48.7 The Contractor shall, within the prescribed time period, after receipt of such notice, repair or replace the defective / damaged Goods or parts thereof on site, without any cost to the Purchaser.
- 48.8 The end user licenses, end user warranties and end user contracting support services shall be in the name of Purchaser, for the Goods supplied, the Services provided and the Works done, under the Contract.

49. Ownership of Goods and Replaced Components

Goods to be supplied to the Purchaser, pursuant to the Contract, shall become the property of the Purchaser when the Goods are taken over by the Purchaser. Defective components to be replaced by the Contractor, pursuant to the Contract, shall become the property of the Contractor as and where it lies.

50. Defects Liability Expiry Certificate

- 50.1 The Contractor shall, after expiry of the warranty period, by written notice served on the Client with a copy to the Purchaser, apply for a Defects Liability Expiry Certificate.
- 50.2 The Client shall, within seven days of receipt of such notice, either issue the Defects Liability Expiry Certificate to the Contractor with a copy to the Purchaser, stating the date of expiry of the Warranty Period for all the Goods supplied and fulfillment of all obligations by the Contractor, under the Contract; or reject the application giving the reasons and specifying the work required to be done by the Contractor to enable the Defects Liability Expiry Certificate to be issued.

51. Payment

- 51.1 The Contractor shall provide all necessary supporting documents along with invoice.
- 51.2 The Contractor shall submit an Application for Payment, to the Purchaser. The Application for Payment shall: be accompanied by such invoices, receipts or other documentary evidence as the Purchaser may require; state the amount claimed; and set forth in detail, in the order of the Price Schedule, particulars of the Goods supplied, the Services provided and the Works done, up to the date of the Application for Payment and subsequent to the period covered by the last preceding Payment, if any.
- 51.3 The Purchaser shall get verified the details of Goods/equipment delivered against the invoice from the concerned Technical Team and Payment shall be made on complete delivery of Goods/equipment after issuance of satisfactory certificate by concerned technical team, as per details given in relevant Letter of Acceptance.
- 51.4 The Purchaser shall pay the amount verified within thirty (30) days. Payment shall not be made in advance and against partial deliveries. The Purchaser shall make payment for the Goods supplied, the Services provided and the Works done as per, to the Contractor, as per Government policy, in Pak Rupees, through treasury cheque.
- 51.5 The Contractor shall cause the validity period of the performance security to be extended for such period(s) as the contract performance may be extended. In case the Contractor fails to submit bank guarantee with extended validity period for such period(s) as the contract performance may be extended, an amount equal to 10% of total contract value shall be deducted from the payments to be made against the contract.
- 51.6 All payments shall be subject to any and all taxes, duties and levies applicable under the laws of Pakistan, for the whole period starting from issuance of Acceptance Letter till termination of the signed contract in this regard.

52. Price

The Contractor shall not charge prices for the Goods supplied, the Services provided and for other obligations discharged, under the Contract, varying from the prices quoted by the Contractor in the Price Schedule.

53. Contract Amendment

- 53.1 The Purchaser may at any time, by written notice served to the Contractor, alter or amend the contract for any identified need/requirement in the light of prevailing rules and regulations.
- 53.2 The Contractor shall not execute any Change until and unless the Purchaser has allowed the said Change, by written order served on the Contractor with a copy to the Client.
- 53.3 The Change, mutually agreed upon, shall constitute part of the obligations under this Contract, and the provisions of the Contract shall apply to the said Change.
- 53.4 No variation in or modification in the Contract shall be made, except by written amendment signed by both the Purchaser and the Contractor.

54. Assignment / Subcontract

- 54.1 The Contractor shall not assign or sub-contract its obligations under the Contract, in whole or in part, except with the Purchaser's prior written consent.
- 54.2 The Contractor shall guarantee that any and all assignees / subcontractors of the Contractor shall, for performance of any part / whole of the work under the contract, comply fully with the terms and conditions of the Contract applicable to such part / whole of the work under the contract.

55. Extensions in time for performance of obligations under the Contract

If the Contractor encounters conditions impeding timely performance of any of the obligations, under the Contract, at any time, the Contractor shall, by written notice served on the Purchaser with a copy to the Client, promptly indicate the facts of the delay, its likely duration and its cause(s). As soon as practicable after receipt of such notice, the Purchaser shall evaluate the situation and may, at its exclusive discretion, without prejudice to any other remedy it may have, by written order served on the Contractor with a copy to the Client, extend the Contractor's time for performance of its obligations under the Contract.

56. Liquidated Damages

If the Contractor fails / delays in performance of any of the obligations, under the Contract / violates any of the provisions of the Contract / commits breach of any of the terms and conditions of the Contract the Purchaser may, without prejudice to any other right of action / remedy it may have, deduct from the Contract Price, as liquidated damages, a sum of money @0.25% of the total Contract Price which is attributable to such part of the Goods / the Services / the Works, in consequence of the failure / delay, be put to the intended use, for every day between the scheduled delivery date(s), with any extension of time thereof granted by the Purchaser, and the actual delivery date(s). Provided that the amount so deducted shall not exceed, in the aggregate, 50% of the Contract Price.

57. Blacklisting

If the Contractor fails / delays in performance of any of the obligations, under the Contract / violates any of the provisions of the Contract / commits breach of any of the terms and conditions of the Contract or found to have engaged in corrupt or fraudulent practices in competing for the award of contract or during the execution of the contract, the Purchaser may without prejudice to any other right of action / remedy it may have, blacklist the Contractor, either indefinitely or for a stated period, for future tenders in public sector, as per provision of Punjab Procurement Rules, 2014 and PITB Procurement Regulations and Guidelines.

58. Forfeiture of Performance Security

58.1 The Performance Security shall be forfeited by the Purchaser, on occurrence of any / all of the following conditions:

58.1.1. If the Contractor commits a default under the Contract;

58.1.2. If the Contractor fails to fulfill any of the obligations under the Contract;

58.1.3. If the Contractor violates any of the terms and conditions of the Contract.

58.2 The Contractor shall cause the validity period of the performance security to be extended for such period(s) as the contract performance may be extended. In case the Contractor fails to submit bank guarantee with extended validity period for such period(s) as the contract performance may be extended, an amount equal to 10% of total contract value shall be deducted from the payments to be made against the contract.

58.3 If the Contractor fails / delays in performance of any of the obligations, under the Contract / violates any of the provisions of the Contract / commits breach of any of the terms and conditions of the Contract the Purchaser may, without prejudice to any other right of action / remedy it may have, forfeit Performance Security of the Contractor.

58.4 Failure to supply required items/services within the specified time period will invoke penalty as specified in this document. In addition to that, Performance Security amount will be forfeited and the company will not be allowed to participate in future tenders as well.

59. Termination for Default

59.1 If the Contractor fails / delays in performance of any of the obligations, under the Contract / violates any of the provisions of the Contract / commits breach of any of the terms and conditions of the Contract the Purchaser may, at any time, without prejudice to any other right of action / remedy it may have, by written notice served on the Contractor with a copy to the Client, indicate the nature of the default(s) and terminate the Contract, in whole or in part, without any compensation to the Contractor. Provided that the termination of the Contract shall be resorted to only if the Contractor does not cure its failure / delay, within fifteen working days (or such longer period as the Client may allow in writing), after receipt of such notice.

59.2 If the Purchaser terminates the Contract for default, in whole or in part, the Purchaser may procure, upon such terms and conditions and in such manner as it deems appropriate, Goods / Services / Works, similar to those undelivered, and the Contractor shall be liable to the Purchaser for any excess costs for such similar Goods / Services / Works. However, the Contractor shall continue performance of the Contract to the extent not terminated.

60. Termination for Insolvency

If the Contractor becomes bankrupt or otherwise insolvent, the Purchaser may, at any time, without prejudice to any other right of action / remedy it may have, by written notice served on the Contractor with a copy to the Client, indicate the nature of the insolvency and terminate the Contract, in whole or in part, without any compensation to the Contractor.

61. Termination for Convenience

61.1 Any of the parties may, at any time, by written notice served on the other party with a copy to the Client, terminate the Contract, in whole or in part, for its convenience, without any compensation to the other party.

61.2 The Goods and the Services which are complete or to be completed by the Contractor, within thirty working days after the receipt of such notice, shall be accepted by the Purchaser. For the remaining Goods, the Purchaser may elect:

61.2.1 to have any portion thereof completed and delivered; and/or

61.2.2 to cancel the remainder and pay to the Contractor an agreed amount for partially completed Goods, Services, Works and materials / parts previously procured by the Contractor for the purpose of the Contract, together with a reasonable allowance for overhead & profit.

62. Force Majeure

62.1 For the purpose of this contract "Force Majeure" means an event which is beyond the reasonable control of a party and which makes a party's performance of its obligations under the Contract impossible or so impractical as to be considered impossible under the circumstances, and includes, but is not limited to, War, Riots, Storm, Flood or other industrial actions (except where such strikes, lockouts or other industrial are within the power of the party invoking Force Majeure), confiscation or any other action by Government agencies. In all disputes between the parties as to matters arising pursuant to this Contract, the dispute be referred for resolution by arbitration under the Pakistan Arbitration Act, 1940, as amended, by one or more arbitrators selected in accordance with said Law. The place for arbitration shall be Lahore, Pakistan. The award shall be final and -binding on the parties.

62.2 The Contractor shall not be liable for liquidated damages, forfeiture of its Performance Security, blacklisting for future tenders, termination for default, if and to the extent his failure / delay in performance /discharge of obligations under the Contract is the result of an event of Force Majeure.

62.3 If a Force Majeure situation arises, The Contractor shall, by written notice served on The Purchaser, indicate such condition and the cause thereof. Unless otherwise directed by The Purchaser in writing, The Contractor shall continue to perform under the Contract as far as is reasonably practical, and shall seek all reasonable alternative means for performance not prevented by the Force Majeure event.

62.4 Force Majeure shall not include (i) any event which is caused by the negligence or intentional action of a Party or Agents or Employees, nor (ii) any event which a diligent Party could reasonably have been expected to both (A) take into account at the time of the conclusion of this Contract and (B) avoid or overcome in the carrying out of its obligations here under.

62.5 Force Majeure shall not include insufficiency of funds or failure to make any payment required hereunder.

63. Dispute Resolution

63.1 The Purchaser and the Contractor shall make every effort to amicably resolve, by direct informal negotiation, any disagreement or dispute arising between them under or in connection with the Contract.

63.2 If, after thirty working days, from the commencement of such informal negotiations, the Purchaser and the Contractor have been unable to amicably resolve a Contract dispute, either party may, require that the dispute be referred for resolution by arbitration under the Pakistan Arbitration Act, 1940, as amended, by one or more arbitrators selected in accordance with said Law. The place for arbitration shall be Lahore, Pakistan. The award shall be final and binding on the parties.

64. Statutes and Regulations

- 64.1 The Contract shall be governed by and interpreted in accordance with the laws of Pakistan.
- 64.2 The Contractor shall, in all matters arising in the performance of the Contract, conform, in all respects, with the provisions of all Central, Provincial and Local Laws, Statutes, Regulations and By-Laws in force in Pakistan, and shall give all notices and pay all fees required to be given or paid and shall keep the Purchaser indemnified against all penalties and liability of any kind for breach of any of the same.
- 64.3 The Courts at Lahore shall have the exclusive territorial jurisdiction in respect of any dispute or difference of any kind arising out of or in connection with the Contract.

65. Taxes and Duties

The Contractor shall be entirely responsible for all taxes, duties and other such levies imposed make inquiries on income tax / sales tax to the concerned authorities of Income Tax and Sales Tax Department, Government of Pakistan.

66. Contract Cost

The Contractor shall bear all costs / expenses associated with the preparation of the Contract and the Purchaser shall in no case be responsible / liable for those costs / expenses. The successful bidder shall provide legal stamp papers of relevant value according to Govt. rules and regulations for signing of the formal contract.

67. The Client

- 67.1 The Client shall only carry out such duties and exercise such authority as specified in the Contract. The Client shall have no authority to relieve the Contractor of any of his obligations under the Contract, except as expressly stated in the Contract.
- 67.2 The Contractor shall proceed with the decisions, instructions or approvals given by the Client in accordance with these Conditions.
- 67.3 The Client shall conform to all the relevant clauses of this Tender Document to carry out all responsibilities assigned thereto in a timely manner.

68. Authorized Representative

- 68.1 The Purchaser, the Client or the Contractor may, at their exclusive discretion, appoint their Authorized Representative and may, from time to time, delegate any / all of the duties / authority, vested in them, to their authorized Representative(s), including but not limited to, signing on their behalf to legally bind them, and may, at any time, revoke such delegation.
- 68.2 The Authorized Representative shall only carry out such duties and exercise such authority as may be delegated to him, by the Purchaser, the Client or the Contractor.
- 68.3 Any such delegation or revocation shall be in writing and shall not take effect until notified to the other parties to the Contract.
- 68.4 Any decision, instruction or approval given by the Authorized Representative, in accordance with such delegation, shall have the same effect as though it had been given by the Principal.
- 68.5 Notwithstanding Clause 68.2, any failure of the Authorized Representative to disapprove any Goods or Services or Works shall not prejudice the right of the Client to disapprove such Goods or Services or Works and to give instructions for the rectification thereof.
- 68.6 If the Contractor questions any decision or instruction of the Authorized Representative of the Purchaser / the Client, the Contractor may refer the matter to the Purchaser / the Client who shall confirm, reverse or vary such decision or instruction.

69. Waiver

Failure of either party to insist upon strict performance of the obligations of the other party, under the Contract, shall in no way be deemed or construed to affect in any way the right of that party to require such performance.

70. Training

- 70.1 The Contractor shall arrange and undertake a comprehensive training program for the staff nominated by the Purchaser / the Client to ensure that they shall acquire a good working knowledge of the operation, and general maintenance of the Goods to be supplied under the Contract.

70.2 In case of non-compliance with instructions, non-cooperation or other difficulties experienced by the Contractor with regard to any of these personnel, the Contractor shall apprise the Purchaser / Client and proceed to implement suitable remedial measures after consultation with them.

71. Documentation

The Contractor shall furnish the user documentation, the operation manuals, and service manuals for each appropriate unit of the supplied Goods and other information pertaining to the performance of the Goods, in hard copy format, in soft copy format and in the form of on-line help, before the Goods are taken over by the Purchaser.

72. Special Stipulations

SCHEDULE-A, SPECIAL STIPULATIONS	
For ease of Reference, certain special stipulations are as under:	
Bid Security (Earnest Money)	The Contractor shall furnish the Bid Security (earnest Money) in the form of Demand Draft / Pay Order / Call Deposit Receipt, in the name of the Purchaser; denominated in Pak Rupees; For a sum of equivalent to PKR. 1,000,000/- (Rupees one million only); Have a minimum validity period of one twenty (120) days from the last date for submission of the Tender or until furnishing of the Performance Security, whichever is later.
Performance Security	The successful Contractor shall furnish Performance Security as under: within twenty eight (28) days of the receipt of the Acceptance Letter from the Purchaser; in the form of a Bank Guarantee, issued by a scheduled bank operating in Pakistan, as per the format provided in the Tender Document; for a sum equivalent to 10% of the total contract value; denominated in Pak Rupees; Have a minimum validity period until the date of expiry of warranty period, support period or termination of services, or fulfillment of all obligations under the contract, <u>whichever is later.</u>
Delivery Period (including installation, configuration, deployment, commissioning, testing, and training of the delivered items.)	Within sixteen (16) weeks from the issuance of Letter of Acceptance.
Liquidated damages for failure / delay in supply / installation / configuration of Goods / Services / Works by the Contractor	If the Contractor fails / delays in performance of any of the obligations, under the Contract / violates any of the provisions of the Contract / commits breach of any of the terms and conditions of the Contract the Purchaser may, without prejudice to any other right of action / remedy it may have, deduct from the Contract Price, as liquidated damages, a sum of money @0.25% of the total Contract Price which is attributable to such part of the Goods / the Services / the Works, in consequence of the failure / delay, be put to the intended use, for every day between the scheduled delivery date(s), with any extension of time thereof granted by the Purchaser, and the actual delivery date(s). Provided that the amount so deducted shall not exceed, in the aggregate, 50% of the Contract Price.

TECHNICAL SPECIFICATIONS

(Scope of Work on Turnkey Basis)

Data Center Infrastructure

DATA CENTRE INFRASTRUCTURE SOLUTION DELIVERABLES:

Functional areas that will establish a Data Center include, but are not limited to, the following major components of Critical Physical Infrastructure:

- Data Center Power System.
- Data Center Cooling System.
- Racks and Accessories.
- Environment Management and Monitoring System.
- Access Controls.
- Fire Detection and Suppression.
- Related Civil Works.

1. Data Center Power Distribution System

- A. The Data Center will house 6 Racks (server/network) with 4 KW load per rack. The successful vendor should design each server rack with power availability of 32Amps per rack, with three/single phase availability until rack level.
- B. Load per rack is considered to be 4 KW, and each rack will have two rack PDU's of 32Amp – single phase.
- C. The Power distribution system must include raw power input from the building's power system, power distribution panels for power distribution to the Data Center's UPS, cooling units, lighting and other allied equipment.
- D. InRow UPS should provide 10 minutes of back up at 100% load. The distribution of power to the racks will be carried out from the UPS integrated PDU's. The cables must be terminated at both ends with the help of industrial sockets.
- E. The successful vendor must deploy a grounding/earthing system for the Data Center.
- F. Appropriately-rated circuit breakers to fully isolate the UPS during times where maintenance is required.
- G. It must also include power distribution to rack PDUs from UPS power distribution system including integrated power cabling system through top of the rack power cable troughs.

1.1. MAIN DISTRIBUTION BOARD:

- A. The Main Distribution Board must be installed. The power supply system comprising utility supply, gen set supply and automatic transfer of power supply system must be provided by the successful vendor. It must feed the UPS's, cooling units, and luminaries.
- B. The Main Distribution Board shall be a Type Tested floor-mounted and indoor type. The phase and neutral bus bars must be of the same rating as the incoming feeder. Earth bus bars must be run throughout the MDB. Each earth bar must have half the rating of a phase bus bar.
- C. Specifications: The Switchboard must be made of sheet steel, floor mounted, totally enclosed, and dust tight. It must be complete in all respects with material and accessories, factory assembled, and finished all according to the specifications provided.
- D. It should have wiring diagrams in the pocket on the inside of each door of the panel.
- E. It should be suitable for 400 volts AC, 3 phase 4 wires, and 50 Hz system.

- F. It should be labeled with nameplate on the front side of door for each incoming and outgoing circuit.
- G. All the circuits should be properly labeled as mentioned in the single line diagram

1.2. LV POWER DISTRIBUTION BOARD

Supply & installation of type tested LV switchboard & switchgear as per following specification.

- A. The entire equipment must be type tested low voltage switchboard and should comply with the specifications defines in the IEC Standard: 60439-1 & 2.
- B. Switchboard & switchgears manufacturer must be the same.
- C. Type tested LV Switchboard must be of a modular type.
- D. All circuit breaker & Switchgear Parts must be ASTA / Type tested

1.3. UNINTERRUPTIBLE POWER SUPPLY

- A. There shall be a three-phase, on-line, continuous operation, solid-state uninterruptible power supply (UPS). The UPS shall operate as an active power control system, working in conjunction with the building electrical system to provide power conditioning and on-line power protection for the critical loads.
- B. The UPS shall consist of the following easy to repair modular rectifier/inverter sections and easy to install internal and external modular battery units.
- C. The UPS shall be provided with separate feeds for rectifier/inverter section and the static bypass switch.
- D. **Modes** of operation: The UPS shall operate as an on-line system in the following modes:
 - i. **Normal:** The inverter and the rectifier shall operate in an on-line manner to continuously regulate the power to the critical load. The rectifier shall derive power from the AC input source and supply DC power to float charge the battery.
 - ii. **Battery:** Upon failure of the AC input source, the critical load shall continue being supplied by the main inverter without any switching. The inverter shall obtain its power from the battery. There shall be no interruption in power to the critical load upon failure or restoration of the AC input source.
 - iii. **Recharge:** Upon restoration of the AC input source, the UPS shall simultaneously recharge the battery and regulate the power to the critical load.
 - iv. **Bypass:** The static bypass switch shall be used for transferring the critical load to input supply without interruption. Automatic retransfer to normal operation shall also be accomplished with no interruption in power to the critical load. The static bypass switch shall be fully rated and shall be capable of manual operation.
 - v. The UPS shall be able to recharge the batteries while supplying full power to the load via the static bypass switch.
 - vi. **Internal maintenance bypass:** The UPS shall be provided with an internal manual bypass to simplify the installation and shall be used for supplying the load directly from the mains supply, while the UPS is taken out for maintenance.
- A. The UPS shall be provided with RS-232 signaling and WEB/SNMP integration. This system must provide a means for logging and alarming of all monitored points plus email notification.
- B. The UPS shall have nominal voltage of 3×400/230V (adjustable for
- C. 3×380/220V, 3×400x230V, 3×415/240V), 50Hz, L1, L2, L3, N, PE or L1, L2, L3, PEN.
- D. The UPS shall be compatible with all types of data centers, data rooms and facilities. Dedicated service to one specific environment shall not be acceptable.

1.3.1. GENERAL

- A. The UPS shall be housed in a free standing enclosure. The enclosure shall be designed to blend into an IT environment. The cabinet shall be equipped for fork truck lifting. The UPS cabinet shall be painted with the manufacturer's standard color, black. All service and installation access shall be from the front and top
- B. The UPS shall be in a self-contained cabinet and comprise 25kVA or higher power section; Bypass Static Switch; Battery for standard run time and interface LCD display all mounted in a separate cabinet. The UPS shall permit user installable and removable battery units.
- C. The power section shall be of the Double Conversion On-Line topology with power factor corrected inputs.
 - i. The UPS shall be sized for 25 kVA or higher load.
 - ii. The UPS battery shall be sized for 10 minutes
 - iii. The UPS shall have a short circuit withstand capability of 25kA

1.3.2. SYSTEM INPUT

- A. Nominal Input voltage rating:
 - i. 3×400/230V (adjustable for 3×380/220V or 3×415/240V)
 - ii. Input Voltage range: 304-477V
 - iii. Earthing principle: [TN-S] [TN-C-S] [TN-C] [TT] or [IT]
 - iv. Input frequency: 40-70 Hz (auto sensing)
- B. Input power factor: 0.98 or 1
- C. Magnetizing inrush current: NONE, if optional input isolating transformer is installed then 500% of nominal input current for less than one cycle
- D. Input current distortion with no additional filters:
- E. < 5% THD at 100% load
- F. Power walk-in/Soft-Start: Shall be linear from 0 to 100% of the load over a 15-second period

1.3.3. SYSTEM OUTPUT

- A. Nominal Output voltage rating: 3×400/230V.
- B. Earthing principle: [TN-S] [TN-C-S] [TN-C] [TT] or [IT].
- C. Output voltage regulation for steady state and transient variations (at default parameter settings):
 - i. ± 1% steady state for a static 100% balanced load.
 - ii. ± 1% steady state for a static 100% unbalanced load.
- D. Overload capability:
 - i. 150% for 30-60 seconds in normal operation. 110% continuous in bypass operation
 - ii. 800% for 500 milliseconds in bypass operation
 - iii.

1.3.4. COMPONENTS

- A. Rectifier
 - i. Each UPS power module shall include an active power factor corrected, Insulated Gated Bipolar Transistor (IGBT) rectifier.
 - ii. DC buss voltage shall be ±192Vdc nominal.
 - iii. The battery charging shall keep the DC bus float voltage of +/- 220v, +/-1%
 - iv. The DC buss voltage shall be compensated against temperature variations (Battery Temperature Compensation) to always maintain optimal battery float charging voltage for temperature excursions above or below 25°C. DC ripple voltage shall be less than ±1% of nominal with no battery connected.

- v. Input power factor shall be 0.98 lagging at 100% load without the use of passive filters. Rectifier shall employ electronic waveform control technology to maintain the current sinusoidal.
- vi. Pulse Width Modulation (PWM) current control shall be used. Digital Signal Processors (DSP) shall be used for all monitoring and control tasks. Analog control is not acceptable.
- vii. Reflected input current Total Harmonic Distortion (THD) shall not exceed 5% at 100% load.
- viii. Input voltage window: 304-477V.
- ix. Typical battery charge time per IEEE 485.
- B. Batteries
 - i. Standard battery technology shall be Valve Regulated Lead Acid (VRLA).
 - ii. Batteries shall be housed in the same rack as the power section. Batteries shall be modular on pull out shelves for quick replacement and servicing.
 - iii. Battery voltage shall be Battery Temperature Compensated as outlined in the rectifier section above.
 - iv. For longer runtimes, external battery frames in the same design should be offered.
 - v. Battery Charge Current Limit: The UPS shall be capable of limiting the energy sourced from the mains for purposes of battery charging. As a default setting, the battery charge energy will be set to 100% of its nominal value. When signaled by a dry contact, (such as from an emergency generator) the UPS shall be capable of limiting the battery charge energy taken from the mains. This shall take place in user selectable increments of 75%, 50%, 25%, 10% and 0% of the nominal charge power. The selection shall be made from the UPS front panel display/control unit.
 - vi. The battery charging circuit shall remain active when in Static Bypass and in Normal Operation.
- C. Inverter
 - i. Inverter shall be PWM controlled using DSP logic. Analog control shall not be acceptable.
 - ii. The inverter shall consist of fast switching IGBT power module.
 - iii. The inverter modules shall be rated for an output power factor at 0.8.
 - iv. Nominal output voltage shall be 3×400/230V and adjustable for 3×380/220V or 3×415/240V, 50Hz, L1,L2,L3,N,PE.
 - v. Efficiency of each module at full load: Not less than 30kVA 94.5%
 - vi. Output Voltage Total Harmonic Distortion at full load:
 - Less than 1% for 100% for all loads.
 - vii. Output frequency: 50Hz free running.
 - viii. Remote Emergency Power Off (EPO) shall be standard (wall switch and wiring shall be provided by the electrical contractor).
- D. Static Bypass Switch
 - i. The static switch shall consist of fully rated Silicon Controlled Rectifiers (SCRs). Part rated SCRs with a wraparound contactor are not acceptable.
 - ii. The static bypass switch shall automatically transfer the critical load to bypass input supply without interruption after the logic senses one of the following conditions:
 - Inverter overload beyond rating.
 - Battery runtime expired and bypass available.
 - Inverter failure.
 - Fatal error in control system.
 - iii. The static bypass switch shall automatically retransfer from bypass to the inverter, when one of the following conditions occurs:

- After an instantaneous overload-induced transfer has occurred and the load current has returned to less than 100% of the system rating.
 - The inverter is active (on).
- iv. The static bypass switch shall be equipped with a manual means of transferring the load to bypass and back to inverter.
- v. If more than 10 transfers from and to inverter occur in a 10 minutes period, the load shall be locked on static bypass. An alarm communicating this condition shall be annunciated.

1.3.5. MECHANICAL

- A. The UPS power section, Static Bypass Switch, internal manual bypass switch and the VRLA batteries shall be housed in a free standing enclosure.

1.3.6. DISPLAY, CONTROLS AND ALARMS

- A. Microprocessor controlled display unit shall be located on the front of the system. The display shall consist of an alphanumeric display with backlight, an alarm LED, and a keypad consisting of pushbutton switches.
- B. The following metered data, shall be available on the alphanumeric display:
- i. Year, Month, Day, Hour, Minute, Second of occurring events
 - ii. Input AC Voltage
 - iii. Output AC voltage
 - iv. Output AC current
 - v. Input Frequency
 - vi. Battery voltage
 - vii. Highest Internal Battery temperature
- C. The display unit shall allow the user to display an event log of all active alarms and of the 64 most recent status and alarm events. The following minimum set of alarm conditions shall be available:
- D. The following shall make up the UPS front panel user interface.
- i. Indicating LED's
 - Load On When Green, this LED indicates the load is being supported by the UPS output
 - On Battery When Yellow, this LED indicates the UPS is running from Battery power
 - Bypass When Yellow, this LED indicates the load is being supported by static bypass/mechanical bypass
 - Fault When Red, this LED indicates there is a fault condition present in the UPS. Push Button User Controls
 - Up Arrow
 - Down Arrow
 - Help Key
 - Escape Key
 - Enter Key
- E. Potential Free (Dry) Contacts
- i. The following potential free contacts shall be available on an optional relay interface board:
 - Normal Operation
 - Battery Operation
 - Bypass Operation
 - Common Fault
 - Low Battery
 - UPS Off

- F. For purposes of remote communications with the UPS the following shall be available and contained within the UPS on a removable, “hot swappable” “smart slot” interface card:
- RJ-45 Interface port for remote communications with a network via web browser or SNMP.
 - Environmental monitoring feature, capable of locally monitoring temperature and humidity as well as one additional generic set of user determined dry contacts capable of taking an input signal from any APC or third party on/off signal, such as water detection, smoke detection, motion, or fire detection.

1.3.7. BATTERY

- A. The UPS battery shall be of modular construction made up of user replaceable, hot swappable, fused, battery modules. Each battery module shall be monitored to determine the highest battery unit temperature for use by the UPS battery diagnostic, and temperature compensated charger circuitry.
- B. The battery blocks housed within each removable battery module shall be of the Valve Regulated Lead Acid (VRLA) type.

1.3.8. OUTPUT POWER DISTRIBUTION

A. RACK MOUNT POWER DISTRIBUTION UNITS

- i. For purposes of distributing power within an IT enclosure, The INRow/rack mount power distribution units shall be available. The rack mount power distribution units shall be capable of being installed in the back of the accompanying enclosure.
- ii. Output Connections - The output of the The INRow / Rack Mount PDU shall be fed from 3×400/230V, L1, L2, L3, N, PE, and shall be distributed to receptacles capable of supplying power to cord connected equipment.

B. RACK MOUNT TRANSFER SWITCHED

- i. For purposes of providing redundancy (to single corded loads) as far as the equipment rack, and the load itself, 1U rack mount transfer switches shall be available. Rack mount transfer switches shall be capable of switching a combination of single-phase and three-phase loads up to 3.7kW. The Rack Mount Transfer Switch shall be designed to be fed from a 1 pole 16A circuit breaker via a IEC 309 receptacle or cord cap.

C. OVERHEAD DISTRIBUTION

- i. Flexible Distribution Conductors - For purposes of overhead distribution wiring of data center branch circuits from the output distribution panel, flexible conductors of either an SJO type, or TC type shall be available as a distribution means. Flexible conductors shall be equipped with NEMA or IEC style cord caps and shall be agency approved under EN/IEC60950-1.
- ii. Cable Ladder - For purposes of routing data and power cables between rows in a data center aisle layout, cable ladders shall be available to span the gap between rows. Cable ladders shall be agency approved under EN/IEC60950-1. The use of overhead cable management shall minimize the need to run data and power cable beneath a raised floor, thus minimizing potential air flow obstructions for down-flow type precision cooling solutions. This means of cable management shall also facilitate ease of installation of power and data cabling in data centers not utilizing raised floor. Optional covers shall be available for ladders as a means of adhering to local codes requiring such.
- iii. Cable Trough - For purposes of routing data and power cable along the length of a row of IT enclosures in a data center environment, cable troughs shall be available as a means of separating and housing data and power cable. Optional covers shall be available for troughs as a means of adhering to local codes requiring such. The use of overhead cable management

shall minimize the need to run data and power cable beneath a raised floor, thus minimizing potential air flow obstructions for down-flow type precision cooling solutions. This means of cable management shall also facilitate ease of installation of power and data cabling in data centers not utilizing raised floor.

D. INFORMATION TECHNOLOGY (IT) ENCLOSURE

- i.** IT enclosures shall be available for housing of customer supplied IT equipment. Enclosures shall be listed under the same EN/IEC60950-1 agency approval as other products outlined within this specification.

E. General Requirements

- i.** The Enclosure shall be designed to provide a secure, managed environment for computer and networking equipment.
- ii.** The Enclosure shall conform to EIA-310 Standard for Cabinets, Racks, Panel and Associated Equipment and accommodate industry standard 19" rack mount equipment.
- iii.** The Enclosure shall be designed with four (4) vertical posts to allow rack mount equipment installation utilizing four (4) vertical mounting rails.
- iv.** The Enclosure shall be available with a vertical equipment mounting space of 25U, 42U or 47U. (1U=1.75" or 44.45mm)
- v.** A four-post open frame configuration shall be available with 42U vertical equipment mounting space.

F. Physical Requirements

- i.** External Width Dimensions shall be 597mm (23.5") for 19" rack enclosures, and 747mm (29.4") for 23" rack enclosure with +/- 5% is acceptable.
- ii.** External Depth Dimensions shall be 900/1000/1100//1200mm
- iii.** Rack enclosures of a 42U design shall have a maximum external height of 2000-2070mm (to allow passage through a standard 7ft. (84") doorway without tipping.
- iv.** Rack enclosure shall support a dynamic load (rolling on castors) of 900-1200 kG total weight.
- v.** Rack enclosure shall also be designed and manufactured to be matching in both color and construction to the UPS, PDU/System bypass and extended runtime battery enclosures to provide a uniform and consistent appearance in a data center environment.

G. Equipment Access and Mounting

- i.** The enclosure shall provide [25U] [42U] [47U] of equipment vertical mounting space.
- ii.** The vertical mounting rails shall be adjustable to allow different mounting depths.
- iii.** Front and rear doors of the enclosure shall be designed with quick release hinges allowing for easy detachment without the use of tools.

H. FLOOR ANCHOR BRACKETS

- i.** Floor Anchor brackets shall be available to solidly connect UPS and Battery Enclosure to minimize unintended moving of the equipment.

I. SEISMIC FLOOR STANDS

- i.** Seismic rated floor stands shall be available to take the place of supporting the system on a raised floor environment. Floor Stands shall be available in custom heights to maintain a flush mount installation adjacent to the raised floor, and shall be designed in accordance to the equipment weight and contact points.

J. SOFTWARE AND CONNECTIVITY

- i.** The Ethernet Web/SNMP Adaptor shall allow one or more network management systems (NMS) to monitor and manage the UPS in TCP/IP network environments. The management information base (MIB) shall be provided in DOS and UNIX "tar" formats. The SNMP interface

adaptor shall be connected to the UPS via the RS232 serial port on the standard communication interface board.

- ii.** Unattended Shutdown
- iii.** The UPS, in conjunction with a network interface card, shall be capable of gracefully shutting down one or more operating systems during when the UPS is on reserve mode.
- iv.** The UPS shall also be capable of using an RS232 port to communicate by means of serial communications to gracefully shut down one or more operating systems during an on battery situation.
- K. REMOTE UPS MONITORING**
 - i.** The following three methods of remote UPS monitoring shall be available:
 - ii.** Web Monitoring: Remote monitoring shall be available via a web browser such as Internet Explorer.
 - iii.** RS232 Monitoring: Remote UPS monitoring shall be possible via either RS232 or contact closure signals from the UPS.
 - iv.** Simple Network Management Protocol (SNMP): Remote UPS Monitoring shall be possible through a standard MIB II compliant platform.
- L. SOFTWARE COMPATIBILITY**

The UPS manufacturer shall have available software to support graceful shutdown and or remote monitoring.

2. DATA CENTER COOLING SYSTEM

Direct Expansion (DX Type) Inrow cooling system is desirable for Data Center,

N+1 cooling redundancy is required for InRow and front flow cooling units. Cooling system shall essentially consist of following major components;

- InRow Cooling Units for ITDC POD with HOT/Aisle Containment as per OEM Design and recommendation.

INROW Cooling Units for Data Center

STANDARD COMPONENTS

A. CABINET CONSTRUCTION

- i.** Exterior panels shall be 18 gauge steel density foam insulation. Insulation complies with flame spread and smoke developed rating of 25/50. Front and rear exterior panels shall be 18 gauge perforated steel with free area, and equipped with a keyed lock to provide a means of securing access to the internal components of the unit
- ii.** The frame shall be constructed of 16 gauge formed steel welded for maximum strength. All units shall provide maintenance from the front and rear, allowing units to be placed within a row of racks
- iii.** All exterior panels and frame shall be powder coated for durability and attractive finish

B. VARIABLE SPEED FAN ASSEMBLY

Variable Speed Fans: The unit is equipped with variable speed, electrically commutated, 400 mm backward incline fans complete with Inlet Volute.

Fan Protection: discharge finger guard.

C. MAIN DISCONNECT SWITCH

- i. Unit shall be provided with Thermal-Magnetic circuit breakers with interrupt capacity ratings per UL489/CSA C22.2/IEC-947.

Voltage	kAIC
200-240V 50/60Hz	50
380-415V 50Hz	36
460-480V 60Hz	22

- ii. Air-cooled: Units shall include a main disconnect switch located on the E-panel in order to disconnect power input.

D. MICROPROCESSOR CONTROLLER

- i. Monitoring and Configuration: The master display shall allow monitoring and configuration of the air conditioning unit through a menu-based control. Functions include status reporting, set-up, and temperature set points. report the operational status of the connected air conditioning unit.
- ii. Controls: The microprocessor controller shall come equipped with control keys to allow the user to navigate between menus, select items, and input alpha numeric information.
- iii. Alarms: The microprocessor controller shall activate a visible and audible alarm in the occurrence of the following events:
 - Cool Fail
 - Rack inlet temperature violation
 - Rack inlet temperature sensor fault
 - Air filter clogged
 - Air filter run hours exceeded
 - Filter DP sensor failure
 - Supply air sensor fault
 - Return air sensor fault
 - Supply air high temperature violation
 - Return air high temperature violation
 - Fan fault
 - Fan run hours exceeded
 - Water detection fault
 - Condensate pump fault
 - Condensate run hours exceeded
 - Humidifier water conductivity high violation
 - Humidifier fault tolerance exceeded
 - Humidifier low water
 - Humidifier excessive output reduction
 - Humidifier drain fault
 - Humidifier cylinder full
 - Humidifier replace cylinder
 - Humidifier RS485 communication fault
 - Humidity high/low violation
 - Supply humidity sensor fault
 - Return humidity sensor fault
 - Heater fault
 - Heater run hours exceeded

- Group communication fault
 - Containment DP sensor failure
 - Containment DP high violation
 - Input contact fault
 - Invalid supply setpoint
- iv.** Logging: The microprocessor controller shall log and display all available events. Each alarm log shall contain time/date stamp as well as operating conditions at the time of occurrence. Controller shall display the run time hours for major components.

E. NETWORK MANAGEMENT CARD

The unit shall include a network management card to provide management through a computer network through TCP/IP. Management through the network should include the ability to change set points as well as view and clear alarms.

F. COOLING COIL AND CONDENSATE PAN

Direct Expansion: Cooling coil shall use raised lance type corrugated aluminum fin and with OEM design for copper tube coils. Fin shall be a minimum of recommended thickness. Tube wall shall be a minimum thickness in wall. Coil end supports shall be a minimum 18 gauge galvanized steel. Coil shall be rated for a maximum pressure of 500 psig (3447.3 kPa), and the coils are certified in accordance with UL207. Coil header is equipped with a drip plate in the bottom to capture and direct the condensation accumulating on the suction header tube to the drain pan. Coil has 6 circuits complete with brass distributor and copper distribution tubes.

DC inverter /VARIABLE SPEED COMPRESSOR / VFD ASSEMBLY

Compressor: The unit shall be configured with a DC inverter /variable speed reciprocating hermetic compressor using a matched VFD. As a result, the compressor speed can be varied through a range to accommodate varying load conditions. The firmware to include oil return protection in cases where pipe velocities may drop to low speeds during low loading periods.

- Compressor is electrically protected.
- Compressor utilizes a noise cap for noise reduction.
- Sight glass provided for air cooled system oil charging.

G. CONDENSATE PUMP

Factory Installed and wired condensate pump shall pump at. Pump shall have dual internal floats and reservoir made of polymeric materials to prevent corrosion.

H. FILTERS

- i.** The standard filters shall be 30% efficient per ASHRAE Standard 52.1, UL Class 2 (as per ASHRAE 52.2). Filters shall be EN779 G4 or better in efficiency. The pleated filters shall be replaceable from the rear of the unit.
- ii.** The optional filter shall be 85% efficient per ASHRAE Standard 52.1 (MERV13 per ASHRAE 52.2, EN779 F7).

I. HUMIDIFIER

Humidifier shall be able to modulate capacity. The humidifier shall be self-contained, steam-generating type, factory piped and wired, with disposable cylinder and automatic solid-state control circuit. Humidifier canisters shall be replaceable. The humidifier controller shall communicate directly to the microprocessor controller and provide complete status and control at the operator interface.

Humidifier shall control flush cycling and conductivity via automated controls. Humidifier shall be capable of producing steam as per OEM design.

J. ELECTRIC REHEAT

- i.** Reheat elements shall be low watt density, wired for three-phase, loaded equally on all three phases and shall be electrically and thermally protected by both automatic and manual reset cutouts.
- ii.** Reheat coils shall be stainless steel, fin tubular construction. Heater casing shall be G90 galvanized steel.
- iii.** Heater shall be provided with self-engaging electrical connectors upon installation. Heater with manually connected conductors are not acceptable.

K. TEMPERATURE AND HUMIDITY SENSORS

- i.** Internal Temperature Sensors: Thermistor temperature sensors shall be mounted behind the front / rear doors to provide control inputs based on supply and return air temperature. Sensor accuracy shall be within +/- 1 degree accuracy.
- ii.** Remote Temperature Sensors: Three remote rack inlet temperature sensors shall be shipped with the unit to provide control input based on rack inlet temperature.
- iii.** Internal Humidity Sensors: Humidity sensors shall be mounted behind both the front and rear doors and shall provide control input based on humidity in front supply air. Humidifier sensor shall be +/- 3-5% RH accuracy full scale.
- iv.** Water Sensors: Internal supply and return chilled water temperature sensors shall be installed into sealed wells. Wells are filled with thermal conducting heat transfer grease to provide accurate temperature sensors.

L. SELECTABLE TOP OR BOTTOM PIPING

- i.** Pipe connections: The unit is equipped with field connection from either top or bottom of the unit. Unit connections shall be made internal to the unit.
- ii.** Pipe adapters: The unit shall include Rotolock to sweat adapters and associated Teflon seals.

M. FLOW METER

- i.** Flow meter shall be factory piped inside the unit and connected to microprocessor controls to provide water flow rate through the unit. The microprocessor controller shall also use this information to provide total unit capacity out of the unit while in operation.
- ii.** Flow meter shall be stainless steel construction turbine type meter, compatible with glycol/water solutions up to closest accuracy or better on range.

N. CABLE WATER DETECTOR

- iii.** A leak detection sensing cable shall be shipped loose with the unit. If water or other conductive liquids contact the cable anywhere along its length, the main controller visually and audibly annunciates the leak.
- iv.** The detector shall be provided with cable. Cable may be Cascaded

3. RACKS & ACCESSORIES

IT enclosures shall be available for housing of Owner-supplied IT equipment. Enclosures shall be listed under the same UL 60950 agency approval as other products outlined within this Section.

A. General Requirements:

The enclosure shall be designed to provide a secure, managed environment for computer and networking equipment.

The enclosure shall conform to EIA 310 and accommodate industry standard 19 inch (483 mm) rack mount equipment.

The enclosure shall be designed with four vertical posts to allow rack mount equipment installation utilizing four vertical mounting rails.

The enclosure shall be available with a vertical equipment mounting space of 42U. (1U=1.75 inch [44.45 mm])

B. Physical Requirements:

External width dimensions shall be 600 mm and 750/800mm as per the quantities mentioned in the BOQ.

External depth dimensions shall be 1000/1100/1200 mm.

Rack enclosure shall also be designed and manufactured to be matching in both color and construction to the UPS, PDU/system bypass and extended runtime battery enclosures to provide a uniform and consistent appearance in a data center environment.

C. Equipment Access and Mounting:

The enclosure shall provide 42U of equipment vertical mounting space.

The vertical mounting rails shall be adjustable to allow different mounting depths.

Front and rear doors of the enclosure shall be designed with quick release hinges allowing for easy detachment without the use of tools.

4. ENVIRONMENTAL MONITORING SYSTEM

Data Center management and monitoring system is required to integrate all devices and system of data center. It should be a centralized server appliance with a client console. The system shall have an architecture that allows for increasing the number of devices.

It should be easy to use and deploy with a user-friendly interface to monitor, manage and control the hundreds or thousands of devices a company might have from a wide range of manufacturers. These devices include equipment that provides power, cooling, security and environmental monitoring.

An integrated monitor and control system should be available for temperature sensor, humidity sensor, vibration sensor, access sensor, water sensor, smoke alarm, air flow monitor, voltage monitor, motion detector and room entry/exit. Automated notification via E-mail or SMS should also be available when thresholds are reached or exceeded.

Multi-vendor – capable of monitoring any networked device from any manufacturer

Real-time monitoring – user-defined reports and graphs, and instant fault notification and escalation enable quick resolution of critical infrastructure events.

Centralized repository – of critical information accessible by multiple users from anywhere on the network.

Future Trending – bringing new insights into your infrastructure's health, planning and budgeting.

Customized Alarming – alarm and escalate by device, by rack, by location to the right people at the right time.

Open and flexible architecture – expands with changing business needs through additional device licenses, add-on surveillance, operations, capacity and change modules.

Full software developer kit (SDK) – allows custom integration with other systems for maximum flexibility.

A. WATER LEAKAGE DETECTION

Water leakage detection systems should be installed, below the air conditioners and any adjacent areas prone to water leakage. Sensors should be installed in addition to water leakage monitors and leakage notification facility.

5. ACCESS CONTROL SYSTEM

- Supply, install and commission Weigand based Access control system with magnetic locks. The Biometric and RFID door readers and controllers should be mounted according to the Drawing. The detailed technical specifications of the products will be as follows.
- Access control system shall be installed for total of Doors as per design layout recommended by each bidder. The Main Access controller units (Door processing units) should be mounted according to the drawings.
- The monitoring of the access control will be done in the security room
- All doors of POD areas will have (3 in 1) RFID + keypad + Biometric readers for Entry and others will have just RFID Reader.
- All doors will have RFID only readers for Exit

Required Specifications

- Access control system should have the capability to integrate with the fire alarm system and in case of fire doors should automatically unlock.
- Access control system should have at least 01 web client licenses for remote monitoring
- Access control system should fully integrate with IP CCTV system in such a way that in case of unauthorized attempt with any door nearest IP CCTV camera should popup in front of operator
- Access control system should have the capability to integrate with BMS system.
- The wiegand wiring of RFID readers to the main controller should be done with Belden AWG 22 or CAT6 UTP AWG23 cable.

3 in 1 Entry Readers (RFID + Keypad + Biometric)

- The Entry Reader should be bioCLASS Compatible and should use contactless smart card reader/writer with keypad and biometric sensor that provides access control verification, in addition to host-controlled read/write to iCLASS smart cards
- The Entry Reader Should Use 13.56 MHz contactless smart card technology and should be compatible with the bioCLASS Technology

Read Range	iCLASS Card: Up to 4" (10.2 cm) iCLASS Key/Tag: Up to 1.25" (3.2 cm)
Mounting	Mounting plate attaches to US/EU/ Asian back box, 52-60 mm screw hole spacing (vertical or horizontal). LCD/Keypad reader housing latches onto mounting plate; fingerprint module secured to reader with a screw

Power Supply	9-12 VDC, Linear supply recommended
Current Requirements	245 mA AVG, 299 mA PEAK
Environmental	Indoor Only
Transmit Frequency	13.56 MHz

RFID EXIT Readers (RFID)

- B.** The Exit Reader should be bioCLASS Compatible and should use contactless smart card and iCLASS smart cards
- C.** The Entry Reader Should Use 13.56 MHz contactless smart card technology.

Access Control Main Controller (Door Processing Unit)

- Native Ethernet IP Access Controller
- Access control for for all readers
- Powerful CPU with 128 MB of DDRSDRAM and 32 MB Flash
- Dedicated processor for reader inputs
- Battery backed storage for up to 480,000+/-20% personnel records
- Flash for easy online software updates
- Plain English (PE) language simplifies programming
- Compatible with Cyber Station v1.8 and higher software. (Cyber Station v1.74 SP2 may be used with limited feature set.)
- Secure 10/100 Ethernet communications via IPsec/IKE Encryption with hardware acceleration for Authentication and Encryption
- Easy configuration using embedded configuration web pages
- Support for Area Lockdown and Condition "Threat" Level based access rights
- Support for 2nd Generation Drivers
- HSPD-12/FIPS 201 Ready

Magnetic Locks

High graded magnetic locks will be installed to secure the doors. The power supply and the cabling of the locks will be the responsibility of the contractor.

6. FIRE AND SMOKE DETECTION SYSTEM

A fire detection system (HSSD) that provides an early warning alert and conforms to the NFPA standard should be used along with the following features:

Programmable temperature sensors should be provided.

The detection and suppression systems within the premises should be linked to the electronic monitoring system.

The control panel should be programmable to allow adjustments to sensitivity and parameters, such as time delays, threshold, passwords and other features.

Fire alarm monitors, control panels and notification mechanisms should be installed. Automated alerts when thresholds are reached should also be sent to the relevant staff;

Fire and Smoke Detection System Specifications

Basic response sensitivity: 0.05%/m

Fault report optionally saved or not saved

Temperature range: 0 to +60 degree centigrade

Addressable fire alarm panels shall be connected to the EMS.

7. STORAGE AND BACKUP SOLUTION

<u>BOQ for Unified Storage</u>			
S.no.	Feature	Requirement	Quantity
Unified Storage			
1	SOLUTION REQUIREMENT	Rack mountable, 3-Tier storage solution is required with SSDs, SAS and NL-SAS with at least one hot spare disk in all categories. Offered storage should support at least 150 drives.	1
2	STORAGE	38 TB of Raw Space	
3	Total cache	32 GB or higher	
4	TIER-0 (SSD)	Capacity Approx. 10% or higher with automatic storage tiering using RAID-5	
5	TIER-1 (SAS)	Capacity Approx. 30% or higher with 10K RPM disks, with automatic storage tiering using RAID-5	
6	TIER2 (NL-SAS)	Capacity Approx. 55% or higher with 7.2K RPM, with automated tiering and using RAID-6 with two parity disks.	
7	POINT IN TIME RECOVERY (LOCAL PROTECTION)	Clone with snap shots functionality with, continuous data protection must be ensured by taking copies of changed data and this should be done using a minimal amount of storage capacity for each point-in-time image.	
8	HARDWARE MANAGEMENT SOFTWARE	Storage Management Software with GUI (Auto Tiering software needs to be part of storage management without extra cost)	
9		Server hardware with HA must be provided for all software that runs external to the storage (management software, etc.) Management should have Web based GUI.	

10	PROTOCOLS	NFS, SMB 3.0 (CIFS), iSCSI etc. etc.	
11	REMOTE PROTECTION	Native IP based replication should be supported	
12	MANAGEMENT	Web browser based Storage Management SW with GUI	
13	PORTS & REDUNDANCY	At least 4 x 16Gbps FC ports per storage controller	
14		2 * 1GE per controller	
15	FC CABLES	Required to be quoted as per solution	
16	Support	1 year support with 24 x 7 by manufacturer	
Note:			
1 Years warranty for all components with NBD replacement and 9x5 on-site technical support service included			

A. Backup Software & Backup Appliance
i. Required Features and Platform Support

<u>BOQ for Backup Solution</u>			
S.no.	Feature	Requirement	Quantity
Backup Software			
1	SUPPORT FOR MULTIPLE CLIENTS	Capacity based licensing should include entitlement of all software features and unlimited number of backup clients	1
2	MULTIPLE OPERATING SYSTEM SUPPORT	Should support Windows, AIX, Red Hat Linux, Solaris, Hyper-V, Vmware platforms	
3	MULTIPLE DATABASE SUPPORT	Should support application consistent backups of Oracle, MS SQL, Microsoft Exchange, DB2, SAP. Solution should also support direct integration of Oracle and MS SQL with backup appliance	
4	SUPPORT FOR VARIETY OF MEDIA	Can move backups from one target to another e.g. from disk to disk and tape-out and improves time-to-DR	
5	SUPPORT FOR BACKUP TYPES	Synthetic/Virtual Synthetic backups, Immediate replication, Dense filesystem backups, Passive node backups in cluster configurations, LAN-Free backups	
6	MANAGEMENT GUI	Should have intuitive user interface for managing and monitoring backup environment	
7	BACKUP SERVER PROTECTION	Must have a defined mechanism to recover backup server/nodes from failure	

8	CAPACITY LICENSING	1TB front-end capacity protection license is required which can scale non-disruptively on demand
9	SUPPORT	1 Year comprehensive support by manufacturer
BACKUP Hardware		
11	ARCHITECTURE	Disk Based Deduplication Appliance for Backup
12	DATA INTEGRITY AND FAULT TOLERANCE	RAID, NVRAM, Snapshots to protect against physical and logical failures
13	Space Saving / Deduplication	In-line variable length deduplication. Should also be able to support and work with source-based deduplication
14	Application/ Software Support	Should support integration with any of the industry leading backup softwares and native utilities (Netbackup, TSM, Networker, etc. and native utilities like Oracle RMAN and MSSQL backup)
15	Protocol Support	Should simultaneously support and licensed for VTL, NFS, CIFS, NDMP and any proprietary protocols for enhancing backup efficiency
16	Connectivity	1G Management / Data Path 4 x 10G BaseT
17	Performance/Throughput	Should be capable of handling 4.7TB/Hr or more throughput
18	Replication Support	Network optimized replication with capability of bandwidth throttling
19	Call Home Support	Appliance must have Call Home capability (system should generate an alert to the principal support to log a case in case of any critical error)
20	Replication Support	Network optimized replication with capability of bandwidth throttling
21	Required Capacity	4 TB capacity (without factoring in deduplication) Logical Capacity upto 40-880TB
22	Drives	Drive Type SAS
23	Scalability	Should be scalable to 17 TB capacity or more (without factoring in deduplication)

7.1. Rack Mount Servers

Total Qty: 4		
Sr.#	Item	Description (Minimum Specifications)
1	Device farm factor	Dual Processor rack mount Server
2	Processor	2 * Intel Xeon E5 v4 CPU, 2.4 GHz, 10 cores, 25M cache, equivalent or higher
3	Memory	6 x 16GB DDR4 RDIMM
4	Hard Disk Drive	2 X 600 GB SAS, 10K rpm, 12Gb/s or higher
5	RAID Controller	Independent RAID controller card, 12Gb/s, 1G cache, support RAID 0,1,5,6,10,50,60, with super capacitance
6	Remote Management	Enterprise Remote Management
7	I/O Expansion	Support PCIe SSD card
8	Onboard Network Adapter	2 x GE Port or more
9	FC HBA	16Gbps Dual port Fiber Channel HBA
10	Power Supply	Redundant hot-swappable dual Power Supply Unit in full configuration
11	Stability	Support long-term operating temperature under specific conditions
12	System Management	Support remote management
13	Compatibility	Supports mainstream operating systems, such as Windows, Redhat Linux, SuSE Linux, VMware and Citrix XenServer
Note:		
1.	1 Years warranty for all components with NBD replacement and 9x5 on-site technical support service included	

7.2. Layer 3 Switching solution

Core Switch Layer-3			
Sr. No	ITEM	DESCRIPTION	QTY
1	General Specifications	- Fully Managed Layer 3 Switching solution 24 x 1/10G SFP Capable Ports along with 12*1G SFP single mode 2*1G multimode Transceivers and 10*1G Copper Transceivers - Should have Dedicated slot for uplink module which can support of 8*10G,4*10G and 2*40G uplink. Uplink module currently not required - Power Stacking between stack members for power redundancy / sharing - rack-mountable - should support 620 Gbps Switching Capacity or higher - should support forwarding rate of 450Mpps	2

		- Dedicated ports for Stacking with at least 450Gbps of Stack throughput - Should support Integrated Wireless LAN functionality to have common features across wired and wireless users - Should support termination of CAPWAP tunnel termination on the switch and can work as WLC - Should support visibility of each and every single flow which enters and exit switch/stack for both wired and wireless users - Should have redundant power supplies and support AC/AC and AC/DC power supplies	
2	Features	- ARP & Access Control List (ACL) support - IPv4 & IPv6 support - Link Aggregation Control Protocol (LACP) - MLD snooping, Multiple Spanning Tree Protocol (MSTP) support - Quality of Service (QoS) & RADIUS support - Stack Power technology, Rapid Spanning Tree Protocol (RSTP) support, Should Support Port monitoring or mirroring, Enhanced Round Robin Syslog support, Trivial File Transfer Protocol (TFTP) support, - VLAN support, Virtual Route Forwarding-Lite (VRF-Lite), auto-uplink (auto MDI/MDI-X), layer 3 load balancing - Trunking, DHCP snooping, Dynamic ARP Inspection (DAI), , Energy Efficient Ethernet, IGMP snooping	
3	Compliant Standards	IEEE 802.1D, IEEE 802.1Q, IEEE 802.3at, IEEE 802.3u, IEEE 802.3x, IEEE 802.3z, IEEE 802.1p, IEEE 802.1s, IEEE 802.1w, IEEE 802.1x, IEEE 802.3, IEEE 802.3ab, IEEE 802.3ad (LACP), IEEE 802.3af	
4	Routing Protocol & Remote Management Protocol	- RIP-1, RIP-2, RIPng - CLI, RMON 1, RMON 2, SNMP 1, SNMP 2c, SNMP 3, SSH, Telnet, OSPF, EIGRP, - IP Services feature set required	
5	Power & Temperature	- Operating Temperature between 0 to 40 Degree Celsius and Dual Power Supply - Stacking Cable for Both Power and Switch Stack (Data)	
6	Capacity	IPv4 routes, NetFlow entries, switched virtual interfaces (SVIs) 1000, 24000	
7	Modules	10GBASE-SR SFP Module	4
Note:			
1 Years warranty for all components with NBD replacement and 9x5 on-site technical support service included			

7.3. Firewall Appliance

Firewall Virtual Appliance QTY 1	
Sr. No	ITEM DESCRIPTION

1	1. Firewall should support UTM features including firewall, DPI, IPS, antivirus, anti-spam, URL filtering and content filtering services with one-year subscription license. 2. Firewall performance with basic features (application visibility, URL filtering, GEO Blocking) 8 Gbps or higher. 3. Firewall performance with all features (IPS, Application Visibility, Antivirus, Anti Spyware etc) enabled 4 Gbps or higher. 4. Number of concurrent sessions: 1Million or higher. 5. Recognition of viruses, Trojan horses, and malware hidden in applications through combination of application identification and virus scanning 6. Web Application Firewall (protection against sql injections, XSS attacks etc) 7. Defense against DoS attacks, such as the SYN flood and UDP flood attacks 8. VPN technologies: IPSec VPN, SSL VPN 9. High availability (HA) including the Active/Active and Active/Standby mode 10. SSL offloading preferred 11. Geo Blocking 12. Web based management 13. Compatible with VMware hypervisor 6.0 14. One (01) year NBD advanced replacement warranty and 9 x 5 on-site technical support service.
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7.4. Virtualization Solution

Virtualization Software QTY. (6 CPU)		
Sr. #	Item	Description
1	VMware	vSphere Essentials Plus Kit for 3 hosts + Basic Support for 1 Year
Note: The bidder will be responsible to deploy whole virtualized infrastructure and to install the operating systems in failover environment.		

7.5. Antivirus Solution

Antivirus QTY. (20 Licenses)	
Sr. #	Item Description
1	a. Next-generation protection that should prevent ransomware, analyzes behavior, blocks malicious traffic, and more. b. Security Heartbeat delivering Synchronized Security with Firewall or UTM for faster response to advanced threats. c. Built-in web security that automatically blocks access to malicious and infected websites. d. Web filtering that works across devices to enforce company policies. e. Multi-platform protection for Windows, Mac, and Linux based server operating systems. f. Simple, intuitive management, hosted in the cloud. g. Solution should also have the option to update agents using locally deployed cache server. h. Finely-tuned detection rules, security updates, and software upgrades and certified expert support.

	i. Solution must stop advanced threats from infiltrating systems. Focusing on common, often-used encryption techniques. j. Solution must distinguish itself from traditional security by being 100% next-gen. k. Proposed solution must shut down ransomware before it can take hostages. Solution should include CryptoGuard, which not only should halt all ransomware variants, but can roll back changes to affected files. l. Solution must provide application whitelisting/ lockdown functionality. m. Solution must provide comprehensive malware scan before lockdown. n. Solution must be extremely lightweight with a small footprint with small delta updates in compressed form to speed updates o. Solution must prevent in-memory attacks. p. Proposed solution must provide a low memory footprint on popular hypervisors such as vSphere, Hyper-V, and XenServer. q. Comprehensive threat insight and root cause analysis. Easy to understand and easy to activate, feature must provide detailed root-cause intelligence and a 360-degree visualization of the attack chain. r. Automated remediation and malware removal. Solution must provide advanced detection and malware removal.
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8. Support Services

Support required for one (1) year for all data center components will be governed through the Service Level Agreement (SLA) draft of which is attached **Annexure-J**.

FORMS & OTHER REQUIRED DOCUMENTS

ANNEXURE-B

Technical Proposal Submission Form

[Location, Date]

To _(Name and address of Client / Purchaser)_

Dear Sir,

We, the undersigned, offer to provide the _(insert title of assignment)_ in accordance with your Request for Proposal/Tender Document No._____ dated _(insert date)_ and our Proposal. We are hereby submitting our Proposal, which includes the Technical Proposal and the Financial Proposal sealed in two separate envelopes.

We undertake, if our Proposal is accepted, to provide supply of _____related to the assignment.

We also confirm that the Government of Pakistan / Punjab has not declared us, or any, ineligible on charges of engaging in corrupt, fraudulent, collusive or coercive practices. We furthermore, pledge not to indulge in such practices in competing for or in executing the Contract, and we are aware of the relevant provisions of the Proposal Document.

We understand you are not bound to accept any Proposal you receive.

We remain,

Yours sincerely,

Authorized Signature (Original)

(In full and initials)

Name and Designation of Signatory

Name of Firm

Address

ANNEXURE-C

Financial Proposal Submission Form (Part of Financial Bid Envelope)

[Location, Date]

To _(Name and address of Client / Purchaser)_

Dear Sir,

We, the undersigned, offer to provide the _(Insert title of assignment)_ in accordance with your Request for Proposal No. _____ dated _(insert date)_ and our Technical Proposal. Our attached Financial Proposal is for the sum of _(insert amount in words and figures)_. This amount is inclusive of all taxes.

Our Financial Proposal shall be binding upon us up to expiration of the validity period of the Proposal, i.e. before the date indicated in _____ of the Proposal Data Sheet.

We also declare that the Government of Pakistan / Punjab has not declared us or any Sub-Contractors for any part of the Contract, ineligible on charges of engaging in corrupt, fraudulent, collusive, or coercive practices. We furthermore, pledge not to indulge in such practices in competing for or in executing the Contract, and are aware of the relevant provisions of the Proposal Document.

We understand you are not bound to accept any Proposal you receive.

Signed

In the capacity of:

Duly authorized to sign the proposal on behalf of the Applicant.

Date:

ANNEXURE-D**Price Schedule / Financial Cost Sheet**

Sr. #	Description of Items	Manufacturer	Qty	Unit	Unit Price	Total Price	Total GST	Extended Price
1	LV Electrical Panel - Type Tested							
1.1	Low Voltage Electrical Panel - Type Tested		1	Nos				
	Chassis Rating IP21							
	Flexible Copper Bus Bars							
	Mains Incoming circuits							
	2 x 25KVA UPS incoming & outgoing							
	MCC for AC outgoing							
1.2	ATS Panel for Genset - 80KVA							
1.3	Lighting DB and auxilliary controls		1	Nos				
1.4	Tapoff Panel for DC Power Supply from the Building Main Electrical Panel		1	Nos				
1.5	Installation & Commissioning		1	Nos				
2	InRow Type UPS System - 2N							
2.1	25KVA Modular UPS with builtin static bypass, external service bypass and batteries		2	Nos				
	UPS Output Distribution for 6 Racks							
3	Rack PDU							
3.1	32A Vertical Rack PDU, 230V, C13 and C19 Sockets		12	Nos.				
4	Power Cabling							
4.1	1 x 5 x 50 sq mm for Power Supply to Data Center Electrical Panel (H07RN-7/Xlpe-PVC Classification)		100	Mtr				
4.2	1 x 5 x 25 sq mm from Electrical Panel to UPS (H07RN-7 Xlpe-PVC Classification)		20	Mtr				
4.3	1 x 1 x 35 sq mm for Electrical Panel Grounding (H07RN-7 Xlpe-PVC Classification)		100	Mtr				
4.4	1 x 5 x 25 sq mm for INROW ACs (H07RN-7/ Xlpe-PVCClassification)		20	Mtr				
4.5	1 x 3 x 4 sq mm for In row AC Condensers (H07RN-7/ Xlpe-PVC Classification)		100	Mtr				
4.6	Earthling Bus Bars		2	Nos				
4.7	Earth Pit		1	No				
4.8	1.5 sq mm for lights		2	Coils				
4.9	Wiring Accessories		1	Job				
4.10	Power Cable Laying & Termination		1	Job				
5	Racks							
5.1	42U 600mm Wide x 1000mm Deep Enclosure		4	Nos.				
5.2	42U 800/750mm Wide x 1000mm Deep Enclosure		2	Nos.				
6	Trays for Power, Cooling & Data							
6.1	Galvanized Cable Tray for Power and Cooling		100	Mtr				
6.2	Mesh Tray for Data Cabling		20	Mtr				
6.3	Overhead Power Cable Tray		1	Job				
6.4	Overhead Data Cable Tray or Partition		1	Job				
7	Aisle Containment							
7.1	Aisle Containment with Sliding Doors, Poly Carbonate Ceiling and all accessories for a Pod of 6 - IT Racks & 2 - UPS		1	Job				
7.2	1U Black Modular Toolless Blanking Panel (Pack of 200)		1	Job				
8	InRow Type Precision Air Conditioners							
8.1	Supply of Direct Expansion unit with total cooling capacity of 30 kw at 45 C ambient temperature, builtin humidifier and electrical rehaet.		2	Nos				

8.2	Air Cooled Condensers designed to operate at 45C temperature.		2	Nos				
8.3	Loading, unloading, uplifting and installation of indoor / outdoor units at designated place.		2	Nos				
8.4	Supply, laying and fitting of copper pipe size 1-1/8" with insulation where necessary, supports and metallic trunking complete in all respect.		200	RFT				
8.5	Supply, laying and fitting of copper pipe size 7/8" with insulation where necessary, supports and metallic trunking complete in all respect.		200	RFT				
8.6	Supply, laying and fitting of UPVC pipe of appropriate size for condensate water, with insulation where necessary, complete with metallic trunking, in all respect		50	RFT				
8.7	Supply, laying and fitting of PPRC pipe for fresh water supply for humidifier size 1/2", complete with metallic trunking, in all respect		50	RFT				
8.8	Pressure testing, vacuum of refrigerant circuits and supply / charging of refrigerant R407C		8	Cyl.				
8.9	Configuration, Commissioning & Test Run							
9	Environmental Monitoring System & Monitoring							
9.1	Rack Monitor		1	Nos				
9.2	Rack Sensor Pod		1	Nos				
9.3	Temperature & Humidity Sensor for Racks		6	Nos				
9.4	Rope Type water leak detector		1	Nos				
9.5	Rope leak extension cables		1	Nos				
9.6	24 Port 10/100 Ethernet Switch		1	Nos				
9.7	Cameras		4	Nos				
9.8	Licenses for cameras		1	Nos				
9.9	8 Port POE Switch Cameras		1	Nos				
9.10	Horizontal Cable Organizer 1U w/brush strip		1	Nos				
9.11	Server with required licenses for EMS & Monitoring		1	Nos				
10	Access Control							
10.1	Access Controller with allied accessories		1	Nos				
10.2	Three factor authentication with enrollement feature (Entry)		1	Nos				
10.3	RFID Reader (Exit)		1	Nos				
10.4	16k/16 iClass Card 37b (100-Cards)		1	Nos				
10.5	Software		1	Nos				
10.6	CAT6 UTP Cable (305 Meter)		1	Nos				
10.7	Magnetic Lock		1	Nos				
10.8	Power supplies for Magnetic locks		1	Nos				
10.9	Rack Mountable Server for Software		1	Nos				
10.10	Installation, Configuration & Commissioning for above system		1	Job				
11	Data Cabling							
11.1	CAT 6A Cable (305 meter roll)		8	Nos				
11.2	CAT 6A 24 Port Patch Panel Loaded		6	Nos				
11.3	1U Horizontal cable organizers with cable management rings		6	Nos				
11.4	Cat 6A Patch cord 3 meter		60	Nos				
11.5	Cat 6A Patch cord 5 meter		60	Nos				
11.6	CAT 6A Cable laying and termination		1	Job				
11.7	CAT 6A complete nodes certification with Fluke tester (With Reports)		60	Node				
11.8	12 Core Multimode 10G Fiber Optic Indoor cable		75	Mtr				
11.9	Rack Mountable 12 port SC type ODF, Multimode, 10G (loaded)		2	Nos				

11.10	10G, Multimode SC-LC Fiber Patch Cords (5 meter)		24	Nos				
11.11	Fiber cable Splicing charges		60	Node				
11.12	Fiber Cable laying and termination		1	Job				
11.13	Fiber complete ODF nodes certification with Fluke Test Reports		60	Node				
12	Fire Deteccction & Suppression							
12.1	Supply and installation of Intelligent addressable fire detection system. (FACP).		1	Job				
12.2	Supply and installation of NOVEC 1230 Fire Suppression System with all accessories.		1	Job				
13	False Ceiling & Lighting							
13.1	False Ceiling		380	Sft				
13.2	LED Lights (600 x 600)mm		20	Nos				
13.3	Motion Sensors		3	Nos				
13.4	Emergency Lights		2	Nos				
13.5	Exit Lights		1	Nos				
14	Rodent Repellent System							
14.1	Ultrasonic Rodent Repellent devices		2	Nos				
15	Civil Works & Partitioning Walls							
15.1	Anti Static Floor Tiles		380	Sft				
15.2	Supply & Fixxing 30 Minutes Fire rated door		1	Nos				
16	Storage and Backup Solution		1	Nos				
17	Rack Mount Server		4	Nos				
18	Core Switch Layer 3		2	Nos				
18.2	10GBASE-SR SFP Module		4	Nos				
16	Firewall Appliance		1	Nos				
17	Virtualization Solution		1	Nos				
18	Antivirus Solution		1	Nos				
19	Maintenance / Support cost for year 2		1					
20	Maintenance / Support cost for year 3		1					
Total Bid Price								X

NOTE:

- (i) X will determine the total bid cost for all items
- (ii) Prices must be quoted for all items.
- (iii) Hardware quoted must be legally imported in Pakistan after paying all taxes.
- (iv) The Purchaser reserves exclusive rights to increase/decrease the quantities of the Hardware / IT Equipment mentioned vide this tender document.
- (v) Maintenance / support charges for first year will be part of the proposal no separate cost will be paid to the Firm during said period Total Cost (in words) Rs. _____

Date _____

Signature of authorized person

Name:

(Company Seal)

In the capacity of

Duly authority by

Note: No cutting or overwriting is allowed. Any cutting or overwriting will lead to rejection of the financial bid.

ANNEXURE-E

Format for Covering Letter

To

(Name and address of Purchaser)

Sub: _____.

Dear Sir,

- a) Having examined the tender document and Appendixes we, the undersigned, in conformity with the said document, offer to provide the said items on terms of reference to be signed upon the award of contract for the sum indicated as per financial bid.
- b) We undertake, if our proposal is accepted, to provide the items/services comprise in the contract within time frame specified, starting from the date of receipt of notification of award from the client Department / Office.
- c) We agree to abide by this proposal for the period of ____ days (as per requirement of the project) from the date of bid opening and it shall remain binding upon us and may be accepted at any time before the expiration of that period.
- d) We agree to execute a contract in the form to be communicated by the _(insert name of the Purchaser)_, incorporating all agreements with such alterations or additions thereto as may be necessary to adapt such agreement to the circumstances of the standard.
- e) Unless and until a formal agreement is prepared and executed this proposal together with your written acceptance thereof shall constitute a binding contract agreement.
- f) We understand that you are not bound to accept a lowest or any bid you may receive, not to give any reason for rejection of any bid and that you will not defray any expenses incurred by us in bidding.

Authorized Signatures with Official Seal

ANNEXURE-F

INSTRUCTION FOR PREPARATION OF POWER OF ATTORNEY

- a) To be executed by an authorized representative of the bidder.
- b) The mode of execution of the Power of Attorney should be in accordance with the procedure, if any, laid down by the applicable law and the charter documents of the executants and when it is so required the same should be under common seal affixed in accordance with the required procedure.
- c) Also, wherever required, the Bidder should submit for verification the extract of the charter documents and documents such as a resolution/power of attorney in favor of the Person executing this Power of Attorney for the delegation of power hereunder on behalf of the Bidder.
- d) In case the Application is signed by an authorized Director / Partner or Proprietor of the Applicant, a certified copy of the appropriate resolution / document conveying such authority may be enclosed in lieu of the Power of Attorney.

Format of Power-of-Attorney

POWER OF ATTORNEY

(On Stamp Paper of relevant value)

Know all men by these presents, we (name of the company and address of the registered office) do hereby appoint and authorize Mr. (full name and residential address) who is presently employed with us and holding the position of as our attorney, to do in our name and on our behalf, all such acts, deeds and things necessary in connection with or incidental to our proposal for (name of the project) in response to the tenders invited by the (name of the Purchaser) including signing and submission of all documents and providing information/responses to (name of the Purchaser) in all matters in connection with our Bid.

We hereby agree to ratify all acts, deeds and things lawfully done by our said attorney pursuant to this Power of Attorney and that all acts, deeds and things done by our aforesaid attorney shall and shall always be deemed to have been done by us.

Dated this _____ day of _____ 20__

For _____

(Signature)

(Name, Designation and Address)

Accepted

(Signature)

(Name, Title and Address of the Attorney)

Date:

ANNEXURE-G

UNDERTAKING

It is certified that the information furnished here in and as per the document submitted is true and correct and nothing has been concealed or tampered with. We have gone through all the conditions of tender and are liable to any punitive action for furnishing false information / documents.

Dated this _____ day of _____ 20__

Signature

(Company Seal)

In the capacity of

Duly authorized to sign bids for and on behalf of:

ANNEXURE-H

(To be submitted on legal stamp paper)

AFFIDAVIT

(Integrity Pact)

We (Name of the bidder / supplier) being the first duly sworn on oath submit, that Mr. / Ms. (if participating through agent / representative) is the agent / representative duly authorized by (Name of the bidder company) hereinafter called the Contractor to submit the attached bid to the (Name of the Purchaser). Affiant further states that the said M/s (Bidding Firm/Company Name) has not paid, given or donate or agreed to pay, given or donate to any line officer or employee of the (Name of the Purchaser) any money or thing of value, either directly or indirectly, for special consideration in the letting of the contract, or for giving undue advantage to any of the bidder in the bidding and in the evaluation and selection of the bidder for contract or for refraining from properly and thoroughly maintaining projects implementations, reporting violation of the contract specification or other forms of non-compliance.

[The Seller/Supplier/Contractor] certifies that it has made and will make full disclosure of all agreements and arrangements with all persons in respect of or related to the transaction with the Purchaser and has not taken any action or will not take any action to circumvent the above declaration, representation or warranty / support.

[The Seller/Supplier/Contractor] accepts full responsibility and strict liability for making any false declaration, not making full disclosure, misrepresenting facts or taking any action likely to defeat the purpose of this declaration, representation and warranty /support. It agrees that any contract, right, interest, privilege or other obligation or benefit obtained or procured as aforesaid shall, without prejudice to any other right and remedies available to the Purchaser under any law, contract or other instrument, be voidable at the option of the Purchaser.

Notwithstanding any rights and remedies exercised by the Purchaser in this regard, [the Seller/Supplier/Contractor] agrees to indemnify the Purchaser for any loss or damage incurred by it on account of its corrupt business practices and further pay compensation to the Purchaser in an amount equivalent to ten times the sum of any commission, gratification, bribe, finder's fee or kickback given by [the Seller/Supplier/Contractor] as aforesaid for the purpose of obtaining or inducing the procurement of any contract, right, interest, privilege or other obligation or benefit in whatsoever form from the Purchaser.

Signature & Stamp

Subscribed and sworn to me this _____ day of _____ 20__

Notary Public

ANNEXURE-I

PERFORMANCE SECURITY

Issuing Authority:

Date of Issuance:

Date of Expiry:

Claim Lodgment Date: (Must be one month later than the expiry date)

WHEREAS [Name and Address of the Contractor] (hereinafter called "the Contractor") has agreed to supply the Goods and render the Services against Tender Name. _____, Tender No. _____ (hereinafter called "the Contract") for the Contract Value of PKR (in figures _____) (in words _____).

AND WHEREAS it has been stipulated in the Tender Document that the successful Contractor shall furnish Performance Security, within twenty eight (28) days of the receipt of the Acceptance Letter (Letter of Acceptance) from the Purchaser, in the form of a Bank Guarantee, issued by a scheduled bank operating in Pakistan, as per this format, for a sum equivalent to Rs. _____ (10% of the contract value) valid from the date of issue until all obligations have been fulfilled in accordance with the Contract;

AND WHEREAS [Name of the Bank] having registered office at [Address of the Bank] (hereinafter called "the Guarantor") has agreed to give the Contractor a Guarantee;

THEREFORE the Guarantor hereby affirms to bind himself, his successors and his assigns to the Purchaser, for the sum of PKR (in figures _____) (in words _____) and undertakes to pay to the Purchaser, upon receipt of his written demand(s), any sum(s) as specified by him, not exceeding the above limit in aggregate, without cavil / argument and without the Purchaser having to substantiate / prove or to show grounds / reasons for such claim(s), on the occurrence of any / all of the following conditions:

1. If the Contractor commits a default under the Contract;
2. If the Contractor fails to fulfill any of the obligations under the Contract;
3. If the Contractor violates any of the provisions of the Contract.

Provided that the Purchaser shall specify the occurred condition(s) owing to which the said sum is due to him.

Provided further that any demand(s) / claim(s) from the Purchaser shall reach the Guarantor within thirty working days after the expiry of the Guarantee.

This guarantee shall remain valid up to _____ or until expiry of warranties / support period or all obligations have been fulfilled in accordance with the Contract, **whichever is later**.

Date this _____ day of 2017.

GUARANTOR

Signature _____
CNIC # _____
Name _____
Designation _____
Address _____

ANNEXURE-J

Service Level Agreement (SLA)

1. Introduction
2. Fault Severity Levels
3. Fault Target Resolution time
4. Scope
5. Reporting Structure
6. Purchaser's Responsibility
7. Escalation Process
8. Hand Over
9. Tools
10. Spares List
11. Charges
12. Penalty
13. Renewal

1. Introduction:

Prospective firm will provide service and support during the complete life cycle of the Datacenter for routine Maintenance of individual equipment/component to ensure smooth operations of the entire Infrastructure solution i.e. design, product, and integration. Service includes equipment and system enhancements, replacements and upgrades, and migration of equipment and systems in concert with customer growth, technology upgrades and other operational dynamics. Many enhancements are mandated by the Equipment Manufacturers themselves as part of their Quality programs, and Sustaining Engineering efforts. These must be incorporated on site by the firm without any cost to the customer.

2. Fault Severity Levels Definitions:

High: High level fault occurs when:

A critical element or arm of redundancy is affected or compromised, such that the critical equipment is still being supplied power and cooling, but there is only a single path/ source of power or cooling part is available. All of the System redundancy is not available. In such a situation, if another similar failure happens, the operation of the critical equipment could be affected.

A combination of faults, although such occurrence is highly unlikely, as a result of which critical equipment is not being powered or cooled. In such a case, the operation of the critical equipment could be affected.

In this situation, urgent actions need to be undertaken to bring back the system back to normal operation as soon as possible.

Medium: Medium level fault occurs when:

An element or component of the system is affected, but the system continues to operate, and redundant and parallel paths/ sources of power are still available.

In this situation, actions need to be taken to bring the system back to its normal condition.

Low: Low level fault occurs when:

An alarm or warning occurs in the system, and warrants attention, to review the situation and take corrective actions. It is important to take serious notice of a low level alarm because it may be a precursor to a serious fault, if not taken care of.

3 Faults' target Response Times

Criticality Level	Response Time
High	1 Hour
Medium	4 Hours
Low	24 Hours

4. Operation Support Services Scope

Routine preventive maintenance.
Repairs to the equipment in the event of failure.

Supply of replacement components with the exception of components supplied as listed in paragraph 4.1.9.

4.1 Routine Preventive Maintenance (Quarterly basis)

Routine Preventive maintenance will consist of:

- 4.1.1. Cleaning of equipment, and logging of all measurements taken.
- 4.1.2. Checking the mechanical soundness of all components.
- 4.1.3. Simulation of operation and, if necessary, making adjustments to the electronic control circuits etc.
- 4.1.4. Checking and adjustment of all electronic supervisory and alarm.
- 4.1.5. Control checks on all electrical, mechanical and filter elements.
- 4.1.6. Advise of any parts found defective and replace.
- 4.1.7. Checking, replacement and maintenance of internal filters.
- 4.1.8. Compile comprehensive maintenance report and submit one copy to the customer.
- 4.1.9. The labor involved in the repair of faults and damage, as well as the replacement of parts caused by accidents, short circuits from outside, maltreatment, mal-operation, neglect of outside equipment conditions, such as insufficient cooling air or abnormal pollution, malicious damage, fire, theft, water or other reasons which are not the responsibility of Firm and beyond the control of Firm.

4.2 Consumables

Consumables are not covered under the proposed SLA. Consumable detail listed below.

- a. UPS Batteries
- b. NOVAC 1230 Fire Suppression Gas
- c. Air Conditioners & VESDA Filters replacement once in a year if required. In case of second time replacement, cost will be charged separately.

4.3 Repairs of the equipment in the event of failure.

In response to a call/issuance of ticket by the customer help desk to Firm Service Department, their technical personnel will reach at the site of fault for the resolution and further action.

4.4 Supply of Replacement Components

Firm will keep a good stock of spare parts for the 90% of the predictable faults. These spare parts will be supplied to the customer on DDP basis.

5. Reporting Structure

Comprehensive reports will be generated as a part of the routine service operation.

Reports will be submitted on quarterly basis.

6. Purchaser's Responsibility

Access to the Datacenter for the maintenance of equipment supplied by Firm will be the responsibility of end user. Specific Access by each engineer will be defined by Firm Service Management.

7. Escalation Procedures

Service Engineer (Level 1):

The Service Engineers are the first person that comes across an issue on site. He will be the main point of contact for the end user regarding any anomaly. The service engineers must routinely involved in the maintenance of the entire datacenter Infrastructure, and have knowledge about the environment and application of the equipment.

Service Support Experts (Level 2):

Service Support Experts is the next level of escalation. These individuals are active field engineers who have gained expertise with a particular product line and/ or are experienced in service for many years. Key objective is to solve the problem on an urgent basis and keep the end user informed of the progress being made.

Manufacturer's Technical Support (Level 3):

This group typically reports and operates in the Service Organization of the respective manufacturers. The purpose of this group is to be the central clearinghouse for serious service related issues. The experts who have been identified by their management and have thorough knowledge about their products is available to provide phone and other needed support. In critical situations, they are required to travel to customer sites to resolve issues.

These experts will gather all information on a given product line from the beginning, and conduct important interface with their respective Quality and R&D organizations. They collect vital field data that is later analyzed, and vital Statistics reported to Service Management of the company.

8. Handover Plan:

The handover of equipment and systems would take place after the systems are in routine operation. Any faulty equipment at the time of handing over will not become liability of Firm under SLA.

9. Tools

Tools required for service will be provided by the Firm.

10. Spares Lists

Firm must carry Factory supplied spares parts in their stock to support installed base. The objective is to keep the Mean Time to Repair (MTTR) at a very low level, thereby minimizing the disruption to the critical equipment.

Essential list of components is given below.

Electrical Power	Circuit Breakers for Electrical Panels
	UPS Power Modules
	Static Modules
	PDPM Modules
Precision Air Conditioners	Compressor
	Variable Speed Drive
	Controller Card
	Indoor Fan
	Display Card
	Condenser Fan
Environmental Monitoring	Sensors
	Sensor Pods
Access Control	Controller
	RFID Reader
	3 in 1 (Biometric + RFID + Key pad) Reader
	Magnetic locks
Surveillance	Camera
	NVR Parts
Fire Detection & Suppression	Controller
	VESDA Sensors
	Photo Electric Sensors

11. Charges

Maintenance charge for first year will be part of the proposal no separate cost will be paid to the Firm during said period.

12. Penalty

The end user shall be entitled to impose penalty @ 1,000/- per hour, in case XYZ fails to provide services according to the timeframe agreed between the parties.

13. Renewal

Upon successful completion of year one operations it shall be renewed with the consent of both parties on agreed terms.