

Bidding Document
(ITB No. 04/UoP/MP-IV/IT)

**Supply, Installation and Commissioning of
Equipment for Center for IT Services**

(Establishment of Modular IT Data Center)

University of Peshawar

TURNKEY SOLUTION BASIS

Post Pre Bid Meeting

UNDER THE HEC-FUNDED PROJECT
TITLED

**STRENGTHENING OF ACADEMIC AND PROFESSIONAL FACILITIES AT
UNIVERSITY OF PESHAWAR**

Single Stage – Two Envelope Process

Pre-Bid Meeting and Site Survey:	August 10, 2018 at 10:00 AM
Last date for submission of Bid Documents	September 10 , 2018 upto 2:00 PM
Opening of Technical Proposal	September 10, 2018 at 2:30 AM

**PROJECT DIRECTOR
STRENGTHENING OF ACADEMIC AND PROFESSIONAL FACILITIES AT
UNIVERSITY OF PESHAWAR**

**OFFICE AT FIRST FLOOR, QUAID-E-AZAM COLLEGE OF COMMERCE
UNIVERSITY OF PESHAWAR**

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UNIVERSITY OF PESHAWAR

Invitation to Bid for Supply, Installation and Commissioning of Equipment for Center for IT Services (Establishment of Modular IT Data Center) (ITB No. 04/UoP/MP-IV/IT)

1. Sealed bids on prescribed Tender Forms are invited from well reputed firms registered with Federal Board of Revenue for Income Tax (Active Taxpayers) and Sales Tax purposes for Supply, Installation and Commission of Equipment for Center for IT Services (Establishment of Modular IT Data Center) under the Project 'Strengthening of Academic and Professional Facilities at University of Peshawar', as per following schedule:

Activity	Date and Time
Pre-Bid Meeting and Site Survey	10-08-2018 at 10:00 AM
Last date for submission of Bid Documents (Separately Sealed Technical and Financial Proposals)	10-09-2018 up to 2:00 PM
Opening of Technical Proposals	10-09-2018 at 2:30 PM

2. The bidding documents including Contract Conditions and Item Specification can be obtained from Center for IT Services, University of Peshawar, during office hours (8:00 AM to 4:00PM) on any working day (Monday-Friday) against a Fee of Rs.1000/-. The same may also be downloaded from the University of Peshawar website (www.uop.edu.pk) free of cost.
3. Selection would be made under 'Single Stage – Two Envelope Procedure'.
4. The bidders shall clearly and boldly mark the Tender description and date/time of opening at the face of sealed bid/envelope.
5. The Sealed bids, complete in all respects, must reach the Center for IT Services, University of Peshawar, as per schedule above.
6. The Financial Proposal shall invariably be accompanied with Bid Security @ 2% of bid cost (Refundable) in the form of CDR drawn in the name of The Treasurer, University of Peshawar.
7. Bids submitted without prescribed Bid Security shall be liable for rejection at the time of Tender opening.
8. Pre-Bid Meeting and Technical Proposals opening will be held in the Video Conference Hall, Department of Physics, University of Peshawar in the presence of the bidders.
9. The University of Peshawar reserves the right to reject any or all bids in accordance with rules in vogue.
10. For any further assistance please contact Mr. Irfanullah Khan, Deputy Director CITS at irfan@uop.edu.pk or 0919222149

Project Director
Strengthening of Academic and Professional Facilities at
University of Peshawar; Email: mp4@uop.edu.pk
091-9216757

Table of Contents

1. Invitation to Bid	6
2. Bidding Details (Instructions to Bidders).....	6
3. Definitions.....	8
4. Headings and Titles.....	9
5. Notice.....	9
6. Tender Scope	9
7. Tender Eligibility/Qualification Criteria	25
8. Tender Cost	25
9. Joint Venture / Consortium.....	26
10. Examination of the Tender Document	26
11. Clarification of the Tender Document	26
12. Amendment of the Tender Document	26
13. Preparation / Submission of Tender	26
14. Tender Price	28
15. Bid Security (Earnest Money).....	28
16. Tender Validity	29
17. Modification / Withdrawal of the Tender	29
18. Opening of the Tender	29
19. Clarification of the Tender	29
20. Determination of Responsiveness of the Bid (Tender)	29
21. Correction of errors / Amendment of Tender	30
22. Technical Evaluation Criteria	30
23. Financial Proposal Evaluation	37
24. Rejection / Acceptance of the Bid	38
25. Award Criteria	39
26. Acceptance Letter	39
27. Performance Guarantee	39
28. Redressal of grievances by the procuring agency.....	40
29. Contract	45
30. Contract Duration.....	45
31. Contract Documents and Information	45
32. Contract Language	45
33. Standards	45
34. Commercial Availability.....	45
35. Patent Right.....	45
36. Execution Schedule	45
37. Packing.....	45
38. Insurance	46
39. Labeling	46
40. Delivery	46
41. Installation, Implementation and Maintenance/System Management	46

42. Site Preparation	47
43. Safety	47
44. Test Equipment and Tools	47
45. Spare Parts and Support	47
46. Inspection and Testing	48
47. Taking-Over Certificate	48
48. Warranty	48
49. Ownership of Goods and Replaced Components	49
50. Defects Liability Expiry Certificate	49
51. Payment	49
52. Price	50
53. Contract Amendment	50
54. Assignment / Subcontract	50
55. Extensions in time for performance of obligations under the Contract	50
56. Liquidated Damages	51
57. Blacklisting	51
58. Forfeiture of Performance Guarantee	51
59. Termination for Default	51
60. Termination for Insolvency	52
61. Termination for Convenience	52
62. Force Majeure	52
63. Dispute Resolution	53
64. Statutes and Regulations	53
65. Taxes and Duties	53
66. Contract Cost	53
67. Authorized Representative	53
69. Training	54
70. Documentation	54
71. Special Stipulations	55
72. ANNEXURE-A	56
73. ANNEXURE-B	60
74. ANNEXURE-C	61
75. ANNEXURE-D	62
76. ANNEXURE-E	63
78. ANNEXURE-G	66
79. ANNEXURE-H	67
80. ANNEXURE-I	68
81. ANNEXURE-J	69

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 Public Procurement Rules, 2004

This Bidding Process will be governed under Public Procurement Rules, 2004, as amended from time to time.

1. Invitation to Bid

1.1 PPRA Rules to be followed

Public Procurement Rules, 2004 will be strictly followed. These may be obtained from PPRA's website. <http://www.ppra.org.pk/>

In this document, unless otherwise mentioned to the contrary, "Rule" means a Rule under the Public Procurement Rules, 2004.

1.2 Mode of Advertisement(s)

As per Rule 12(2&3), advertisement for this Tender is placed online at both PPRA and University of Peshawar websites. The tender document is available from the Office of the Deputy Director IT Center for IT Services, University of Peshawar, Jamrud Road, Peshawar & the same may be obtained subject to the payment of cost of printing and provision of the document which is Rs. 1000/-. The same may also be downloaded from the University of Peshawar website (www.uop.edu.pk) free of cost.

1.3 Type of Open Competitive Bidding

As per Rule 36(b), Single Stage - Two Envelope Bidding Procedure shall be followed. The said procedure is reproduced as follows:

- (i) The bid shall comprise a single package containing two separate envelopes. Each envelope shall contain separately the financial proposal and the technical proposal;
- (ii) the envelopes shall be marked as "FINANCIAL PROPOSAL" and "TECHNICAL PROPOSAL" in bold and legible letters to avoid confusion;
- (iii) initially, only the envelope marked "TECHNICAL PROPOSAL" shall be opened;
- (iv) the envelope marked as "FINANCIAL PROPOSAL" shall be retained in the custody of the procuring agency without being opened;
- (v) the procuring agency shall evaluate the technical proposal in a manner prescribed in advance, without reference to the price and reject any proposal which does not conform to the specified requirements;
- (vi) during the technical evaluation no amendments in the technical proposal shall be permitted;
- (vii) the financial proposals of bids shall be opened publicly at a time, date and venue announced and communicated to the bidders in advance;
- (viii) after the evaluation and approval of the technical proposal the procuring agency, shall at a time within the bid validity period, publicly open the financial proposals of the technically accepted bids only. The financial proposal of bids found technically nonresponsive shall be returned un-opened to the respective bidders; and
- (ix) the bid found to be the lowest evaluated bid shall be accepted.

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 "**Treasurer, University of Peshawar**". The complete bids as per required under this tender document, must be delivered to the Office of the Deputy Director IT Center for IT Services, University of Peshawar, Jamrud Road, Peshawar, not later than 1000 hours on last date of submission of bids i.e. **September 10, 2018**. Late bids shall not be considered. The Technical bids shall be publicly opened in **Video Conference Hall, Department of Physics, University of Peshawar at 1430 hours on September 10, 2018**. 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 must be received in writing to the Purchaser till **August 9, 2018 upto 4:00 pm**. The same will be discussed in the **Pre-Bid Meeting along with Survey on August 10, 2018 at Video Conference Hall, Department of Physics, University of Peshawar**. Any query received after said date may not be entertained.

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 Contact for all correspondence in relation to this bid is as follows:

Contact

Mr. Irfanullah Khan

Deputy Director IT

Centre for IT Services University of Peshawar

Email: irfan@uop.edu.pk

Mobile: 03009341954

Mr. Shafaat Raza

Network Administrator

Centre for IT Services, University of Peshawar

Email: sraza@uop.edu.pk

Mobile: 03005889121

Bidders should note that during the period from the receipt of the bid and until further notice from the Contact, all queries should be communicated via the Contact and in writing (e-mail) only.

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, install, integrate and commission 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 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 "Bidder/Tenderer" means the interested Firm/Company/Supplier/Distributors that may provide or provides the 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.
- 3.4 "Commencement Date of the Contract" means the date of signing of the Contract between the Purchaser and the Contractor.
- 3.5 "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.
- 3.6 "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.
- 3.7 "Contract Price" means the price payable to the Contractor under the Contract for the full and proper performance of its contractual obligations.
- 3.8 "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.
- 3.9 "Defects Liability Expiry Certificate" means the certificate to be issued by the Purchaser to the Contractor, in accordance with the Contract.
- 3.10 "Day" means calendar day.
- 3.11 "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.
- 3.12 "Force Majeure" shall mean any event, act or other circumstances not being an event, act or circumstances under the control of the purchaser or of the contractor. Non-availability of materials/supplies or of import license or of export permit shall not constitute Force majeure.
- 3.13 "Goods" means hardware, equipment, machinery, and/or other materials which the Contractor is required to supply to the Purchaser under the Contract against each relevant Lot.
- 3.14 "Person" includes individual, association of persons, firm, company, corporation, institution and organization, etc., having legal capacity.
- 3.15 "Prescribed" means prescribed in the Tender Document.
- 3.16 "Purchaser" means the University of Peshawar 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.
- 3.17 "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.

- 3.18 "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.
- 3.19 "Taking-Over Certificate" means the certificate to be issued by the Purchaser to the Contractor, in accordance with the Contract.
- 3.20 "Works" means work to be done by the Contractor under the Contract.
- 3.21 "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 and the Purchaser, 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 University of Peshawar, (hereinafter referred to as "the Purchaser") invites / requests Proposals (hereinafter referred to as "the Tenders") to Supply, Installation and Commissioning of Equipment for Center for IT Services (Establishment of Modular IT Data Center) (Hereinafter referred to as "the Goods") and installation, configuration, deployment, commissioning, training, testing, after-sale support, of said Goods (hereinafter referred to as "the Services"), as per the requirements stipulated in this RFP. The successful bidder shall deliver conformance Tier/Rated III Data Center facility and commission the project on a turn-key with the following functional areas that will establish a Data Center, but are not limited to.
- 6.2 The equipment shall be delivered and deployed at University of Peshawar, or as specified by the Purchaser at the time of delivery.

6.3 Scope of Work

6.3.1 Site Survey:

Bidders are required to conduct site-survey to ascertain scope of work as given in this RFP, with respect to following goods and services:

- i. Renovation, Dismantling and Related Civil Work
- ii. Data Center Networking and Core Connectivity
- iii. Data Center Power System

- iv. Racks and Accessories.
- v. Data Center Cooling
- vi. Environment and Monitoring System
- vii. Access Control and Surveillance System.
- viii. Fire Detection and Suppression.
- ix. Antistatic Floor, False ceiling and Fire Rated Doors/Paint works
- x. Lighting
- xi. Diesel Generator
- xii. SAN Storage and accessories
- xiii. Firewall and its license
- xiv. Aggregation Switches
- xv. Access Switches
- xvi. IP Telephony and Telephone sets
- xvii. Training

6.3.2 General Requirements

- i. The Bidder shall follow the standards mentioned in this document. If no standards are mentioned for anything, relevant International Standards have to be followed.
- ii. If any misconduct in used materials, implemented works or quality is found during works or during the warranty period of the project, it shall be repaired to required level and to the satisfaction of Purchaser and the Bidder will be responsible for its cost.
- iii. The Bidder shall be responsible for all designing, supervision & management of the project.
- iv. Bidder shall submit the proposal design covering all the requirements of Purchaser with Bid.
- v. All the Designs shall be approved from Purchaser and bidder shall be responsible to inform the Purchaser and take approval for any change in design.
- vi. Bidder shall be responsible to submit detailed Project Implementation plan of the project.
- vii. Bidder shall be responsible to provide complete Data Center electrical design and drawings (with complete calculations).
- viii. Bidder will provide detail working drawings before the start of the project and only approved working drawings shall be executed, however only Purchaser has the right to modify as per site requirements.
- ix. Minor modifications as and when proposed or required by the Purchaser shall be incorporated with due consent of successful bidder.

NOTE:-

- i. Technical TORs above are firm and comprehensive and needs full adherence and conformance.
- ii. The bidders based on the initial survey, however proposed the best design and cost which is core responsibility of bidder for final BOM before quoting.
- iii. It is bidder's responsibility to get the approval of additional works requested by the Purchaser. If additional works are executed without prior approval, such works shall not be paid and accounted for.
- iv. Training plan must be provided including trainings for project execution (if any), solution operations and customization. A complete knowledge transfer plan should also be provided. Technical Manual, User Manual and other documents that will be supplied with the proposed solution must be mentioned.
- v. 3-years Manufacturer warranty and services for all Active Facility / faulty equipment (except cables which comes under commissioning test as per manufacture warranty) should be covered.

- vi. The successful bidders shall provide Training for Data Centre personnel and assist the CITS in developing and implementing Data Centre SOPs.

6.3.3 Dismantling and Related Civil Work

The Building premises will be provided by customer and retro fit outs will bidder's Scope of work covering all fit out cost of any civil works, (cutting, chiseling, mesh on cutting, excavation, backfilling, grouting, drilling etc.) **where applicable** and making goods associated with any item of the electrical works shall be included in the quoted price for the item. The successful Contractor shall be responsible for carrying out these civil works and making good and the cost shall be deemed to be included in the quoted price.

Bidder shall take care not to damage the structure during execution of his work. If so done, he shall repair and make good all losses at his own cost.

Wall segregation with IT data center space hall to use brick work **where applicable** to attain 60-90 minutes' fire ratings. All finished walls will be plastered from both sides as per client's Civil Engineers Supervisory teams and approvals.

The vendor will be responsible for

- i. Dismantling and removal of unwanted doors, cabinets and windows.
- ii. Dismantling of Wooden Partition and fixing it in adjacent CRL/IT offices are per UoP requirement.
- iii. Dismantling all Electric fixtures, wiring and air-conditioning system.
- iv. Dismantling of server and switch racks along with all servers, switches, routers and allied accessories and shifting it into the new ITDC with proper installation and integration.
- v. Dismantling and installation of Existing optical fiber ODF and upgrading it with latest rack mount ODF into new datacenter (The vendor will be responsible to splice all the fiber cores, documenting and testing).
- vi. Dismantling of false ceiling, room tiles, breaking down brick wall for new door and reconstruction of wall/windows.
- vii. Dismantling of existing wash basin and covering up all area as per data center standards.
- viii. Dismantling/Removal of existing PCC (1:2:4) bed upto required level **Concrete slab Structural frame for Civil works as per TIA-942-a or equivalent Guides should be installed for Rating III ITDC facility**

6.3.5 Fire Rated Doors and Walls

All the doors in the Data Center should be designed to meet the **ninety (90)** minute's fire withstand rating. All Perimeter walls of the Data Center should be designed to meet the **ninety (90)** minutes fire withstand rating.

6.3.6 Fire Rated Paint

Fire-resistant, durable paints must be applied to all areas on walls and floors. Painting includes the preparation of the various surfaces, primer and top coat.

Walls shall be painted with an anti-humidity, anti-dust material (primer). All materials used in the ITDC space will not emit any fumes, contaminants or corrosive gasses at any point in the lifetime of the ITDC.

6.3.7 Lighting

Lighting shall be a minimum of 500 lux (50 foot-candles) in the horizontal plane and 200 lux (20 foot-candles) in the vertical plane, measured 1 m (3ft) above the finished floor in the middle of all aisles between cabinets through the Facility for all rooms after segregation.

Lighting fixtures should not be powered from the same electrical distribution panel as the telecommunications equipment in the computer room. They will be connected with Non Critical Paths of

electrical system defined in system from day one from each bidder.

NOTE:-Dimmer switches should not be used.

Emergency lighting and signs shall be properly placed per authority having jurisdiction (AHJ) such that an absence of primary lighting will not hamper emergency exit.

6.3.8 Emergency Lighting

The emergency exits in rooms need to be indicated with permanently illuminated 'emergency exit' signs. Safety lights or battery powered lights need to be set up where necessary.

6.3.9 Datacenter Networking and Core Connectivity

Vendor will provide and install 80 Nodes network for NOC room, ITDC and Corridors.

6.3.10 Data Center Power System

- i. The power system required for this Data Center will have 2(N+1) redundancy.
- ii. There will be UPS's of **25kW** 2(N+1) Modular UPS scalability and scalable up to 100kW or more can be enhanced by adding power modules for future expansion
- iii. 100% of the load to accommodate fault overload conditions.
- iv. All components will have two UPS's for redundancy (N+1.)
- v. Operational and fault messages will be relayed to the centralized monitoring solution via SNMP protocol for critical alarms.
- vi. Will contain an additional module to cater the requirements of internal redundancy of "N+1."
- vii. Load per rack is considered to be 4kW, and each rack will have two metered rack PDU's of 32Amp – single phase.
- viii. The UPS should provide at least 10 minutes of back up at 80% load
- ix. The Modular UPS shall comprise of hot swappable/ user replaceable and scalable power modules which shall operate in parallel. Each power module contains a full rated input rectifier/boost converter, full rated output inverter, and battery charging circuit. The system shall also comprise of a user-replaceable continuous duty hot swappable bypass static switch module or hot swappable Power modules with advanced battery management system, redundant hot swappable control modules, redundant logic power supplies, and LCD interface display. The UPS efficiency should be >95%(TÜV certified).
- x. Modular UPS shall comply to highest industry standards performance with respect to ANSI/EIA-TIA-942A/B standard or which include CE, EN 50091-1, EN/IEC 62040-1-1, EN/IEC 62040-3.
- xi. The distribution of power to the racks will be carried out from the PDU's from the UPS's. The cables must be terminated at both ends.
- xii. The successful vendor must deploy a grounding/earthing system for the Data Center.
- xiii. Emergency Power Off must be provided. Upon its activation all the UPSs shall be shut off. It should be able to integrate with the Data Center management system.

6.3.11 Power Distribution System

- i. Power distribution from UPS to PDUs should be through an intelligent power distribution panel. The power distribution panel shall consist of 32A circuit breaker. The distribution panel shall have a microprocessor-controlled display unit in front of the system. The display shall consist of all the relative information. In addition, remote system monitoring is required through web interface, RS232 or SNMP. The power distribution modules should have cables with standard connectors that connect directly to connector of PDUs. CE, UL Listed

- ii. The Redundant 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.
- iii. It must also include power distribution to rack PDUs from UPS power distribution system including integrated power cabling system through power cable troughs/cable management as per ANSI/EIA-TIA-942A/B standards.

6.3.12 Cables Management and Fiber and Data connectivity

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 UL60950 or equivalent as part of the system. This means of cable management shall facilitate ease of installation of power and data cabling in data center.

Power and Data Cable Trough/Trays

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 above the racks as a means of separating and housing data and power cable.

Cable Management with following functionality is required

- i. Adjustable power cable troughs and data partitions fit seamlessly into the rack roof must be with a grade tailored Solution having 16swg GAVENZIED/ROSH compliant material to be used.
- ii. Cable ladders for row-to-row cable routing. Cable ladders shall be available to span the gap between rows.
- iii. The manufacturer shall offer a variety of cable management accessories to neatly organize the routing of data and power cables within the enclosure.
- iv. The unit shall include separator that allows cables and power cords to be routed through them.

Fiber Runner

Designed to provide a safe, & easy to use management system for fragile optical cables with specifications and components.

Specifications

- i. Fully modular system giving unrivalled flexibility to fit for all possible layouts.
- ii. Fully Integrated system giving unrivalled flexibility to fit for all possible layouts.
- iii. Cable Management System should allow to route fiber optic cables among equipment and provides the physical protection and bend radius management that is crucial to optical cable performance.
- iv. Constructed of halogen free PC/ABS/Metal type galvanized material / 16" SWG with ROSH Compliance of material to protect cabling from the point of building entry right up to the terminal devices.

Component

- Main Duct
- Joiner
- Vertical inside elbow
- Trumpet
- Threaded rod mounting bracket
- Threaded rod attachment bracket (ceiling mounting)
- Cross
- Reducer
- Spillover

6.3.13 Main Distribution Board

- i. The Redundant Main Distribution Board must be installed. The overall power supply system comprising dual utility supply and Two Gensets supply with (ASTA/ASEFA types tested) 4-pole automatic transfer switches, Main switchboards for power supply system must be provided by the successful vendor. It must feed the dedicated feeds to each UPS's, cooling units, and luminaries.
- ii. The main incoming feeder and the respective UPS feeder must be housed on compartmentalized approach in different cubicle as per ANSI/EIA-TIA-942A/B standards or equivalent.
- iii. The entire equipment must be ASTA/ASEFA type tested low voltage switchboard and should comply with the specifications defines in the IEC Standard to meet Non critical power with Form # 1 factor and Critical Power end to end on FORM #2 to FORM#3 factor is must.
- iv. UPS VS Switchboard/switchgears manufacturer may be different.
- v. The Main Distribution Board must be a floor-mounted enclose with minimum Form II Factor while all non-critical panels can be wall mounted and indoor type. The only type tested enclosure main bus bars must be either imported only, and 99.99% pure electric copper. 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's A and B. Each earth bar must have half the rating of a phase bus bar.
- vi. Specifications: The Switchboard must be made of Galvanized sheet steel, floor mounted, totally enclosed, and dust tight. It must be complete in all respects with material and accessories, OEM imported factory assembled, and finished all according to the specifications provided.
- vii. It should have I/O wiring diagrams in the pocket on the inside of each door of the panel.
- viii. It should be suitable for 400 volts AC, 3 phase 4 wires, and 50 Hz system with Complete surge protector safeties, Overcurrent and Earth fault relays installed on upstream side.
- ix. It should be labeled with stainless steel nameplate on the front side of door for each incoming and outgoing circuit.
- x. All the circuits should be properly labeled as mentioned in the single line diagram

6.3.14 Cables for Conduit or Channel Wiring

- i. UPS incoming & Outgoing with manufacturer's recommended specifications.
- ii. 2.5mm 3-5 core or higher flexible for control wiring of AC condenser.
- iii. Power cable for CRAC units should be as per OEM equipment classifications or better.
- iv. 2.5mm 3core power/control cabling for fire suppression NOVEC 1230 System, Video Surveillance, Access Control
- v. Lighting and other general load as per the electrical design and specification.
- vi. All equipment shall be clearly labeled according to industrial standards EIA/TIA 942A/B labeling schema including Power cables, Breakers and allied equipment for better management.
- vii. Multipoint reference ground system with (Less than or equal to 1) resistance.

Note: Power cable payment should be made as per actual.

6.3.15 Earthing/ Grounding System

- i. Separate Earthing System of Data Center (Less than or equal to 1 Ohm)
- ii. Qty = 3pits
- iii. Separate Signal Reference Grid Earthing System for frame, Racks and Genset

The grounding system will compose a Common Bonding Network (CBN) Earthing System and will interconnect an Underflow Telecommunication Grounding Bus (TGB) constructed using bare AWG#2 busbar.

The CBN will be professionally constructed in adherence to the following applicable standards and recommendations:

- i. Alliance for Telecommunications Industry Solutions (ATIS): JSTD- 607-A-2002
- ii. Commercial Building Grounding (Earthing) and Bonding Requirements for Telecommunications referring TIA: ANSI/TIA-942-A/B – Telecommunications Infrastructure Standard for Data Center
- iii. The Institute of Electrical and Electronics Engineers (IEEE) Inc.: IEEE Std 1100-1999 (IEEE Emerald Book) – IEEE Recommended Practice for Powering and Grounding Electronic Equipment
- iv. NEBS Level 3 Approval as Tested by Telcordia Technologies: NEBS Level 3 Criteria is the minimum level of environmental compatibility needed to provide maximum assurance of equipment operability within the network facility environment
- v. Underwriters Laboratories (UL): UL 467 Grounding and Bonding Equipment
- vi. UL 486A Wire Connectors and Soldering Lugs for Use with Copper Conductors

The CBN Grounding System will effectively interconnect all sub floor metal structure, metal duct, building steel, water pipes, HVAC equipment, and air handling equipment. In addition, it will interconnect all Data Center metal structures, cabinets, racks and all above false ceiling metal structure, including Fire Suppression pipes, ducts and raceways.

To construct a network of grounding rods system to achieve a high efficiency ground system. The system will be constructed from multiple copper earth rods driven into the ground as per the industry's best practices and achieving ground resistance of less than 1 ohm or better. This Grounding System will be interconnected to the CBN. A suitable Signal Reference Grid is to be constructed effectively presenting a low-impedance path to ground for high frequency interference signals that cannot be achieved by simple 'earthing'. The Signal Ground will have the following requirements:

A signal reference grid will be installed according to IEEE 1100-1999— Grid of Copper 50mm copper strips. The high frequency signal reference structure will consist of a (60 × 60 cm or less) Bare copper, flat tape grid.

The floor structure will be connected to the grounding grid at each pedestal of Active Equipment as well as all other under-floor substructures and each PDU and air handler. Each network cabinet will be grounded to the grid with 2 grounding straps or bonding conductor

Signal reference Ground (SRG) will comply with the TIA Standards 607, 606A.

Installation of earth pits (Less than 1 or equal Ohm rating) with copper bar for distribution including, excavation, copper plates, rods, racks and all other accessories and labor involved for Earthing. This grounding system should be connected to separate earthing pits dedicated for electronics through insulated copper cables.

All national, local and all other relevant regulations shall be respected.

6.3.16 Standby Generator

Stand By generator of 100 KVA will be installed as backup second source of power availability.

SYNC PANEL together with cablings **must be quoted**.

6.3.17 Specific Requirements Genset with ATS controls

(Only internationally renowned engines Perkins/Cummins/Caterpillar acceptable)

Diesel generator 100 KVA prime rating is required, the diesel generator will be offered with Type Tested ATS/AMF panel with SYNC panel provision. The generator offered with remote monitoring features, super silenced sound proof canopy and Day fuel tank to ensure extended period of operations.

Engine and Alternator Specifications:

- 3 Phase
- Rated Frequency (Hz) 50 Hz
- Rate Voltage (AC) (V) 400-415 /215-230
- Rated Current (AC) (A) 400-450
- Power Factor (COSΦ) 0.8 (lag)
- Power Supply AC, 3-phase, 4-lines
- Type In-line, 4-strokes, water cooled, direct injection, diesel engine
- Number of Cylinders: Minimum 4-6 Vertical in line.
- Voltage Regulator
- Phase Selector
- Voltmeter
- Fuel Tank Capacity: Day tank operational load or equivalent.
- Safety Auto shutdown for exceeding load, Oil Pressure, Water Temperature, Warning Lights indicate abnormal conditions.
- **Control System:** control system based on microprocessor.
- **Remote Monitoring:** SNMP
- **Base Frame:** Bolted steel base frame with A/V mounting, with base type fuel tank.
- **Radiator:** Standard Genset mounted radiator.
- **Standard Accessories:** Exhaust elbow, exhaust bellows,

Automatic Transfer Switches

Only Type tested Enclosures permitted for the system an automatic transfer switch (ATS) which transfers the load from the utility to the generator.

Designed to Agility

The ATS must represents the most compact design of automatic power transfer switches in the industry. With space in electrical closets being at a premium, the use of wall or floor-mounted Power Transfer Switches assures designers optimum utilization of space.

All transfer switches through 100-160 amps ratings designed to be completely front accessible. This permits the enclosures to be installed flush to the wall and still allows installation of all power cabling and connections from the front of the switch. Cable entrance plates are also standard on the units to install optional side-mounted pull boxes for additional cable bending space.

Super-Silenced Acoustic Canopy

- Fresh air provided through Acoustic Louvers.
- Hinged and lockable door all around Canopy for easy access to DG Set for routine maintenance.

Sound level within 82 dB (A) at 1-6 meter.

- Canopy painted with two coats of Epoxy primer and final painted with two coats of chemical resistant Epoxy paint or plastic-coat painting for very hard environment like offshore application. Otherwise anticorrosive phosphate coating can also be used.
- The gauge of the canopy body must be around 14 to 16.

6.3.17 Precision Air Conditioning

- i. Supply, installation and commissioning of Row Based Precision Air Conditioners with **(N+1)**.
- ii. The in-row precision cooling unit's must have power redundancy and must be using utility/genset dual power paths input on 2N redundancy basis for Data Center -
- iii. Capacity: **30KW** or higher can go up to **42 KW** depending on return temperature

- iv. Qty: **2**
- v. Each Cooling unit must have Dual Power Supply availability conformation from day one to meet High Availability for Rating-3 level. The use of dedicated Transfer switches at each connected path to independent Electrical Path A/B.
- vi. Air cooled Direct Expansion
- vii. Inrow Type, front to rear air flow configuration with condensation pump in design is must
- viii. Airflow: as per **OEM best design**
- ix. Return Air Temperature: **27-29°C**
- x. Relative Humidity: **45-55%**
- xi. Ambient Temperature: **50°C(Or AS PER ASHRAE Guide Line)**
- xii. Compressor Type: **VFD / DC** inverter scroll compressor, support adjust cooling capacity according to heat load.
- xiii. Fan Type: **EC Fan**
- xiv. Electrical Re Heat: Intelligent on need basis (**As per each OEM**)
- xv. Humidification: (**As per each OEM**)
- xvi. Remote Condensers
- xvii. Use environment friendly refrigerant **R410A** with **EC Motor** based Fans
- xviii. Microprocessor Software Features: Unit and component sequencing (**As per each OEM**)
- xix. Units, LCD Display, Central Control of all units
- xx. Network Interface and Alarms: Standard component-wise status and alarms available through HTTP/SNMP, IP and current **DCIM** protocols.
- xxi. Vendor Should Provide **CFD** analysis to show the cooling capacity in ITDC
- xxii. integrated humidifier/de-humidifier, variable speed fans, active air flow management, Color Touchscreen & Network Card, easy filter replacement without the need to shutdown equipment, Field replaceable fans, high Energy Efficiency Ratio, Meets **DOE** regulations (SCOP = 3 or higher) **C-tick, CE, EAC or equiv.**
- xxiii. The condenser should be able to be placed in horizontal or vertical arrangement, up to 4.5m/15ft placement below InRow.
- xxiv. Installation will be done through hard type piping and as per standard (**Mouller or Equivalent**)

HVAC for other Facility areas - General Specifications

Indoor Comfort Air Conditioning Units with required Quantities of DX type AC Units sufficient to maintain critical areas during loss of one source of electrical power. (Cooling units must to attain N+1 Path and component level redundancy as per Rating III core conformance (Where applicable).

- i. Supply, installation, testing, commissioning and maintenance for Other ITDC Facility components with Floor Standing Split type comfort cooling OEM equivalent Air Conditioning (AC) units as per following:
- ii. Floor mounted comfort cooling units for Plant/Switchboards Room if bidders design.
- iii. Protection of voltage fluctuation, surges etc. will be provided along with the AC systems
- iv. ACs are placed at appropriate place keeping in view equipment type and row.
- v. **Bidder to provide AC design vetted and approved by the Purchaser.**
- vi. Bidder will design air-conditioning system to maintain temperature at 22-27 degree Celsius for Switchboard Room.

Below are the General Features of Air-Conditioning Units:

- i. The Air Conditioning system should be Energy-Star appliance and comply with energy efficient standards.
- ii. The AC units shall be able to work with following power supply arrangements. Bidder shall quote for the units accordingly after conducting the site survey to check the availability of power supply (1-Phase).
- iii. Input voltage : 220V ± 30% for single phase
- iv. Frequency : 50HZ (±5%)
- v. AC system must possess low voltage, over current and high voltage protection for all motors and compressors used in the Air-conditioning system.
- vi. AC system must possess low & high pressure switch protection for all compressors used in the AC system.

6.3.18 Hot /Cold Aisle Containment

The containment solution should be able to maximize the return air temperature to the cooling units and should be capable to actively control the flow of air. All system components shall be certified as suitable for this data center environment supporting OEM specifications and design.

- Closes off the aisle to prevent mixing of the hot and cold airstreams in the IT environment.
- Secures the hot/cold aisle while allowing for quick exit in case of emergency.
- Modular design provides scalable solutions to add cooling as demand increases.

6.3.19 Aisle Containment System For InRow Cooling Units

Supply, Installation of aisle containment system with their accessories to separate hot air and cold air, improve cooling efficiency. The layout should co-ordinate at site with other services for exact location and position of the aisle containment.

- a). The confined Dual aisle should consist of front and end doors, roof, panels and other necessary sealing; to ensure the cold air and hot air are effectively separated.
- b) The smoke sensor, temperature humidity sensor, IP Camera, etc. should be installed inside the data center hot/cold aisle, connected to data center management system (subject to bidder' design).
- c) Aisle containment doors shall be revolving/sliding type with access control system.
- d) Aisle containment doors shall have translucent viewing panel.
- f). The Containment should have intelligent controlling mechanism for fire propagation event if occurs with the aisle areas (subject to bidder's proposed design).
- g). The Fire suppression system must be configured as per best bidder's technical knowledge to containment design and all automated system triggering are preferred choice.

The Server room may have Cold/Hot Aisle Containment design to reduce energy consumption while supporting higher density IT and networking equipment without compromising the requirement for availability.

Aisle Containment should be design to;

Optimize Cooling system efficiency

- 30+% efficiency increase
- Continuous dynamic adaptation to load
- Less fan power per KW cooling

Eliminate Hot/Cold Air Mixing

- Uniform and predictable temperature to all IT equipment
- Integrate the Cooling unit air flow delivery with IT equipment requirements

Increase Capacity

- 25+ upto 35% increase in available cooling capacity

Allow Easy Retrofit

- No requirement to replace existing cooling infrastructure
- Component fit through standard door ways

Provide Fast Return on Investment (ROI)

- Payback within a few months to less than 2-3 years
- Low initial investment.

6.3.20 Racks and Accessories

6 OEM branded server racks of 42U with 2 InRow Cooling Racks and OEM Distribution system will be installed

inside the Data Center, with 32-40A integrated Metered Rack PDU device with the POD.

Supply and installation of floor standing server/network cabinets complete with horizontal & vertical cable management. The cabinets with the width of 19 inch and 42U installation space, the depth of cabinet should be as specified above.

Front vented single door (65% or more perforation level) with swivel handle lock (universal key);

Rear vented double door (65% or more perforation level) with swivel handle lock (universal key);

Removable four sheet steel side panels with lock (universal key);

Removable and Re-Installable Blanking panels per U for all vacant equipment mounting locations in cabinet;

Overall Weight Carrying Capacity should be greater than or equal to 1000kg;

The Racks should be of same manufacturer as of in-row cooling, UPS Equipment and DCIM.

6.3.21 Data Center Static Rack Intelligent PDUs

Power Distribution Units, 2 Nos. per rack, Vertically Mounted, single phase with having 20-24 Power Outputs (C19, C13) Metered/Intelligent integration to DCIM with LCD display, provide a sharp and highly visible reading for local strip level reading of current (Amp), Voltage (Volt), power (kW), built-in monitoring port.

Key Features

- i. Single-phase input that support strip -level metering or strip -level metering and outlet switching.
- ii. Measures and monitors voltage, current (branch), frequency, power (kW), energy consumption (kWh) and power factor.
- iii. Threshold/Alert Capabilities provide preemptive notification of any impending issues before they occur.
- iv. LED display and a built-in browser interface for local and remote access with real-time data.
- v. Power sequential startup and reboot on outlets groups defined by user – Protects plugged-in devices from sudden power surge.
- vi. Highly compatible with multiple management software platform including Low and high level integration.
- vii. Through DCIM Support for onboard data log for individual PDU with up to 12,000-400,000
- viii. Empirical data and alarm logs.
- ix. IP and Serial Interface Options – Options to install by connecting directly to the network or save IP connections by using the serial interface to connect directly to DCIM appliances already connected to the network.

6.3.22 Data Center Static Transfer Switch - STS

- i. LTS/STS supplies redundant AC power to connected equipment. Two AC lines power the unit and if the primary AC power fails, the unit will automatically switch to the alternative power source. Transfer rate should be within the industry standard and within the time power supplies will typically drop loads. The transfer of one power source to another should be seamless to the connected equipment avoiding disruption of equipment performance. Full-featured network management interfaces should provide standards-based management via SNMP.
- ii. The input shall be 220/230 volts AC at 50 Hz, single phase, 2 wire plus ground. The output shall be 220/230 volts AC at 50 Hz, single phase, 2 wire plus ground 16A.
- iii. STS/LTS units each to be installed with rackmount assembly for only single point of failure removal for single corded IT and Network Equipment.

Specifications

- Automatic transfer interval <6 ms to <11 ms
- Power factor .75 to ~ 1.0 advance or delay
- Animated mimic diagram on the front panel for immediate viewing of the energy flows and states.
- Specific Bypass Procedure diagram.

- STS network management card (NMC) should provide SNMP connectivity to DCIM Central Interface.
- Operating temperature 0°C to 40 °C
- Output efficiency 99%
- Voltage distortion <10%

6.3.23 Data Center Infrastructure Management (DCIM) Solution

A DCIM for monitoring and control of the facility's technical systems shall be provided. The systems shall be integrated into the 3rd party's (SNMP enabled) remote monitoring system to be ultimately displayed on the video wall placed inside the DCOC.

The system shall provide a unified platform to centrally monitor and manages the data center infrastrure facilities including power, cooling, environment, video, security, access and fire alarm etc. The system should have full functions for operation and maintenance, including management of rights, alarms, logs, reports, views, resources, capacity, power usage effectiveness(PUE). The user interface(UI) should provide web-based remote management function. Real-time monitoring, reports, instant fault notification and escalation enable quick assessment and resolution of critical infrastructure events that can adversely affect IT system availability. This centralized repository of critical information can be accessed by multiple users from anywhere on the network, creating a consolidated view of the physical infrastructure. Can grow with changing business needs through additional device licenses and add-on surveillance, capacity management and change management modules.

Following is the desired functionality:

- Centralized Management of the physical infrastructure.
- End-to-end monitoring and management of ITDC facility and not limited to the active part. Proposed DCIM should also monitor third party devices as well as IT & Network equipment as well.
- Real-time monitoring of entire physical infrastructure through centralized, real-time device monitoring and notification enabling quick assessment of events as they occur.
- Real-time event notification of critical physical infrastructure situations to reduce mean time to repair, improve efficiency, and maximize uptime. Receive alerts via mobile phones **SMS and Email**.
- Multi-vendor device support for monitoring networked SNMP devices. Enable visibility of SNMP devices through threshold alert notifications, data trending and reporting.
- Quickly locate devices and alerts through the free search field.
- Customize user interface to display devices in critical, warning or normal device statuses.
- Monitor the improved communication speed in transmitting control or commands to the equipment and parameter setting Records Data and Logs of historical information of alarms and notifications.
- 3rd Party Communication
- Real-time monitoring

The DCIM shall integrate, monitor and manage the following systems:

- **UPS system Monitoring:** Power phase voltage, current, battery voltage, battery current, output frequency, bypass power supply, main failure, rectifier failure, inverter failure, bypass failure
- **ATS Monitoring:** Input voltage, input current, power factor, frequency, active power, apparent power, active power.
- **Power Distribution Monitoring:** Output power phase voltage, current, frequency, output power, alarm information of overload, unbalanced load, AC power failure

- **Air Conditioner Monitoring:** The operating status and parameters of compressors, fans, pumps, heaters, humidifiers, dehumidifiers, filters, air conditioning and refrigeration temperature, supply air temperature, return air temperature, supply air humidity return air humidity, fan speed (high / medium / low), and fault alarm
- **Video Monitoring:**
 - Connect in the equipment and display real-time views on the management platform in data center
 - Uses digital cameras, supports more than two coding formats, such as H.264 and MJPEG, and supports power over Ethernet (PoE) functions
 - Controls and manages videos by the NVR, supports video recording, query, audio intercom, camera control, and alarm handling
 - Real-time monitoring video images, clicks on the appropriate icon on the view to see the camera screen
 - Supports the history of video retrieval playback features which can be retrieved according to the conditions of the video type, channel, time, playback speed is adjustable
- **Access Control Monitoring:** The access system can be integrated in the management system
- **Fire Alarm Monitoring:** Shall send the fire alarm to the data center administrators by **SMS and Email**.
- **Temperature and Humidity Monitoring:**
 - Supports setting temperature and humidity upper and lower limits and displaying and recording the real-time indoor temperature and humidity values of all the temperature and humidity sensors.
 - Sends alarms when the collected data from sensors is beyond the upper or lower limits
- **Environmental Monitoring:**
 - Prevent equipment failure from a full range of threatening environmental conditions.
 - Key integrated sensors include temperature, humidity/dew point, leak, smoke, airflow and audio.
- Water Leakage Monitoring
- Diesel Genset Monitoring

The system must support the following management functions:

- **View management:**
 - Displays equipment layout in data center and allows user customize equipment layout view and adjust the equipment layout.
 - Displays service views, such as distribution and refrigeration view and allows user to customize a service view.
 - Displays the status(for example, a fault) of managed objects and allows user to query or browse for alarm information. d) **support 2D view** display and addition, deletion, management of devices under administrative domain, and view adjustment according to actual physical location
- **Alarm management:**
 - Allows equipment to generate acquisition task, collect data and report alarms based on a monitoring data template.
 - Allow user to define monitored equipment and collect the equipment data.
 - Allows user to change the monitoring indexes and properties of monitored equipment.
 - Allows user to query the monitoring indexes of a device monitored in the past week and displays the change trend in graphics.
 - Allows user to query the network or service data monitored during a specific period.

- Monitors key performance indicators (KPIs) in real time and displays the current operating status of equipment in graphics or tables.
- Supports multiple alarms modes, including color, **SMS and Email**, and customized multimedia voice alarm, etc.
- Resource Management:
 - Supports different types of devices to be managed in the unified model.
 - Allows user to add or delete resources, change and query resource properties.
 - Provides web integration entrance to subsystems, realizing the management of subsystems.
 - Supports management grading of resources and management authority control
- Report Management:
 - Allows user execute report by creating a task and allows user to query on the report.
 - Supports the export and print of reports at defined template.
 - Supports displaying the data by excel, graph, bar chart, pie chart and other visualization
 - Reporting including historical analysis and trend monitoring shall be provided.

The GSM / Edge Modem must be provided and integrated with DCIM. The specifications of GSM / Edge Modem are as under:

- Data interface: USB specification 2.0/3.0 compliant full-speed
- Quad-band 850/900/1800/1900 MHz
- GPRS/EDGE multi-slot class 12, GPRS mobile station class B
- EDGE,GPRS and GSM circuit switched data
- Data, voice and SMS
- Support for multiple APNs
- Support for Multiplexer application
- Firmware upgrade available
- LED display
- Integration via plug & play
- USB bus-powered, requires no external power supply
- Comprehensive Manufacturer's warranty

6.3.24 Security and Environmental Management System

Environmental monitoring solutions provide early warning of conditions that lead to equipment failure, allowing you to react to changes and minimize the impact on network availability.

Following functionality is required for the monitoring of data center closets environment:

- Remote device management
- Temperature monitoring
- Humidity monitoring
- Fault notification
- Data logging
- Event logging
- Expandable
- Password Security
- Read-only Access

- Remote device management
- Monitor at minimum the temperature and relative humidity. It should have historical records capabilities. The historical data will be used to analyze seasonal changes and other outside influences. The temperature and humidity information is to be gathered from all areas of the Data Center using sensors.
- Integration with a tracking system for all parts of the Data Center which can include the in-room air conditioners and humidifiers, cooling support systems, power backup, water detection, security.
- The monitoring system should have critical alarm capabilities. At the very least, the system should be set to notify when conditions move outside the set parameters.
- The monitoring system can use SNMP/Modbus protocol to integrate into overall Data Center management systems.
- Integrated environmental sensors (temperature, humidity, airflow, door)
- External temperature sensor
- External humidity sensor
- Leak Sensor
- Motion Sensor
- Integrated Security Cameras.
- The security cameras will be fixed type with a built in motion sensor; whereas the environmental monitoring system includes a sensor in each rack that can monitor both temperature and humidity. Also, the environmental monitoring device will have the capacity to not only house the sensors but the cameras as well.
- The centralized management software not only monitors and records footage from cameras, but it is also connected to the environmental monitoring device and the UPSs; the in-row cooling; or any SNMP enabled device and sensors installed inside the Data Center. This software is capable of delivering information sent by the devices on a single screen and via **SMS and Email**..

6.3.25 Environment Management and Monitoring System

- i. The system should be able to assist users in monitoring their facilities equipment or environment information. This information includes health and status of the equipment, room temperature, air humidity, air-con speed or airflow and other information. It should be able to alert the user when an abnormal condition occurs. It should also provide periodical reports to the users, such as alarms summary and usage summary of equipment. Scalable to add more devices in future. The EMS software shall show temperature and humidity data of individual racks as well as data from cooling units, UPS, PDUs and all other connecting sensing devices and compute the data intelligently. The software shall be able, alarms and warnings.
- ii. The EMS data can be viewed through web browser with customizable viewing panes as well a desktop client.
- iii. An example of such a usage summary report is the total Run-Time of all Air Conditional Units. The user should be able to use these reports to generate a Maintenance Service Report.

6.3.26 Access Control System

It should be an RFID based card reader and a Biometric Finger print reader. In case of an issue in any or both of the above mentioned devices, there should be a manual process to handle entry and exit from the Data Center.

6.3.27 Fire Detection and Suppression System

The objective of the fire suppression system is to ensure utmost safety of ITDC active components/systems including 0 point of failure to IT equipment and ensuring human safety which is back bone and in-evitable

during fire incidents. A fire and smoke detection system should provide an alert and conforms to the following features:

- Programmable temperature sensors.
- 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 designated staff.
- A fire extinguishing system is required to be installed in the Data Center. It should comply with **NOVEC 1230 standards.**
- Fire suppression systems, such as **NOVEC should be installed**
- In this way, intervention measures can be implemented at the earliest stage of a fires development, preventing unnecessary down time, asset damage and recovery time/costs. Smoke detection by means of the air sampling detection system.
- The system is fully monitored and supervised for critical function faults and can be linked to an Addressable Fire Alarm Control Panel of ITDC and in parallel reporting all FSS/VESDA to enable annunciation and display of all system alarm and fault signals. Fail-safe alarm system to prevent false discharge. All the materials must be fire resistant and certified from internationally recognized body.
- Finally, portable fire extinguishers suitable for class C type (Carbon Dioxide) fires shall be deployed throughout the data center. Powder based devices shall not be used in or around the IT areas.

Automatic Smoke detectors:

Analogue addressable optical smoke detectors shall be installed.

Manual alarm call points:

Manual alarm call points shall be installed.

6.3.28 Storage Area Network

Note: SAN Storage with SAN Switches required for 4 Servers (Huawei RH2288H V3 having VMWare 6.5 Standard already installed) installation and configuration and compatibility and training.

Detailed Technical Specifications of Unified Storage System			
S. No.	Feature	Requirements	Qty
A. UNIFIED SAN STORAGE			
1	SOLUTION REQUIRMENT	Rack Mounted (2U), SAS - Tier storage solution support required with SAS with at least one hot spare disk per SAS drives as per OEM recommendations. Offered storage should support at least 150 drives.	1
2	USABLE STORAGE	6 TB of Usable (Approx.) Space	
3	DRAM CACHE	48 GB per Array for the whole storage must support extended cache	
4	TIER-1 (SAS)	Usable Capacity Approx. 100 % 1800 GB with 10K rpm Disks	
5	POINT IN TIME RECOVERY	Clone with Snap Shoot 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.	
6	HARDWARE MANAGEMENT SOFTWARE	Storage Management Software with GUI (Auto tiering software needs to be part of storage management without extra cost)	

7		Management should have Web based GUI.	
8	PROTOCOLS	Fiber Channel, NFS, SMB 3.0 (CIFS), iSCSI etc	
9	PORTS & REDUNDANCY	Must support at least 4 x 10 G (Optic/SFP+) Gbps ports (to maintain redundancy) – Primary Slots Must support at least 4 x 16 Gbps FC ports (to maintain redundancy) – Additional Slots	
10	FC TO IP ROUTES	FC to IP Routers are required if Native IP based replication is not supported	
11	FC CABLES	16 x 5M 16Gbps OM4 LC/LC Optical Cables	

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 five (5) years;
- 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 equipment and relevant bid security;
- 7.1.5 must be **Tier-1 (Data Center/Power/Cooling/DCIM) sales partner together with Authorized Services Partner to support business (MAF by Principal)** as required to be supplied under this Tender.
- 7.1.6 has authorization of the principal / manufacturer, where required;
- 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 on legal stamp paper is mandatory), 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 is eligible for this tender(The committee has decided to allow Joint Venture subject to the condition that the Principal vendor should be Tier-1 partner and principal vendor will be responsible for overall project execution)

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 in writing **upto 4:00 pm on August 9, 2018** in writing.

Bidders should note that during the period from the receipt of the bid and until further notice from the Contact given herein this document, all queries should be communicated via the Contact and in writing (e.g. e-mail and letter) only.

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 Public Procurement Rules, 2004.
- 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-23(3) of Public Procurement Rules, 2004.

13. Preparation / Submission of Tender

- 13.1 The Tenderer shall bid for **all items of Establishment of Modular IT Data Center on Turnkey Basis** as required to be purchased under this Tender.
- 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, where required;
- 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, unaltered 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 List of firm's major international and national clientele
- 13.6.11 Submission of undertaking on legal valid and attested stamp paper 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.
- 13.6.12 Valid Registration Certificate for Income Tax & Sales Tax
- 13.6.13 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]
[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]
[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]
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]
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 reach/be submitted in the Office of the Office of the Deputy Director IT, Center for IT Services, University of Peshawar , Jamrud Road, Peshawar, **not later than 1000 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 University of Peshawar, Peshawar.
- 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 Tenderer shall furnish the Bid Security (Earnest Money) as under:
- 15.1.1 02 % (Two Percent) of the bid price;
- 15.1.2 denominated in Pak Rupees;
- 15.1.3 separately against each Lot given in this tender document;
- 15.1.4 as part of financial bid envelope, failing which will cause rejection of bid.
- 15.1.5 in the form of Demand Draft / Pay Order / Call Deposit Receipt in the name of the purchaser;
- 15.1.6 have a minimum validity period of one hundred and twenty (120) days from the last date for submission of the Tender or until furnishing of the Performance Guarantee, 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 Guarantee, 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 Guarantee.

16. Tender Validity

The Tender shall have a minimum validity period of **one hundred and twenty (120) 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 1030 hours on the last date of submission of bids i.e. , **2018**, in the presence of the Tenderer(s) for which they shall ensure their presence without further invitation, as per provision of Rule-28 of Public Procurement Rules, 2004. 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

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

A. Mandatory Requirement:

S.No.	Requirement	Response (Yes/No)	Documentary Proof/ Page No.										
1	Brief Company Profile												
2	Active Income Taxpayer Status												
3	Active Sales Taxpayer Status												
4	Undertaking on legal valid and attested stamp paper that the firm is not blacklisted by any of Provincial or Federal Government Departments, Agencies, Organizations or autonomous bodies or Private Sector Organizations anywhere in Pakistan.												
5	A Certificate must be attached showing that the equipment/supplies quoted by the firm are imported through legal channel/(s) and no grey channel/smuggled product is quoted.												
6	A Certificate on the Official Letterhead that the quoted products Hundred Percent (100%) comply to the technical specifications of hardware (all items) to be procured mentioned vide Annexure-A of this document												
7	Manufacturer Authorization Letter/Certificate for participating in this tender from Manufacturer												
8	A Certificate from Principal to provide startup commissioning under its supervision services technical team.												
9	A Certificate from Principal that bidder is Tier-1 (Data Center/Power/Cooling/DCIM)) authorized sales and service letter from OEM must be attached.												
10	Technical expertise available (complete list of technical manpower to be provided indicating position, qualification and experience)												
11	Undertaking that the bidder has completely read the bid document and is agreed to fully comply with its terms and conditions and the Execution												
12	At least 3 Years' Experience in supplies/installation of ITDC to government/semi-government/ private company/ department (Documentary Proof in form of Work Order/Satisfactory Report must be attached). Detail as per following proforma be attached: The bidders should fill the table given below as mandatory requirement.												
<table border="1"> <thead> <tr> <th>S.No.</th> <th>Name of Customer</th> <th>Number of ITDC</th> <th>Amount</th> <th>Year</th> </tr> </thead> <tbody> <tr> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> </tbody> </table>				S.No.	Name of Customer	Number of ITDC	Amount	Year					
S.No.	Name of Customer	Number of ITDC	Amount	Year									

13	A Certificate that the Quoted Brands of Modular IT Data Center is in the business globally for a minimum period of 05 years		
14	Verifiable presence at Peshawar with ability to provide rapid/prompt support at University of Peshawar		
15	Upon request, bidder must arrange onsite visit where the solution is deployed.		
16	The compliance sheet duly filled and signed/stamped by the bidder and the same must be submitted along with technical proposal failing which bid would be considered technically non responsive. (Compliance Sheet table 01)		
17	A Certificate that CDR @ 2% of bid cost is attached with Financial Proposal		

B. Non-Mandatory/Scoring Requirement/Criteria

S.No	Categories "Technical Evaluation"	Total Points
1	Bidder's Company Profile	20
1.1	Total Number of Regular & Contract Employees 5 to 50 = 1, 51 to 75 = 2, > 75 = 3	3
1.2	Number of IT/Engineers: Civil, Electrical, Certified Resources in Power, Cooling, Server, Storage, CCNA-CCIE, CDCP Datacenter or equivalent. (ANNEXURE-J) 3 to 5 = 3, 6 to 12 = 5, > 12 = 7	7
1.3	Provide ISO 9001:2008 or ISO 9001:2015: i. ISO 9001:2008: 3 marks ii. ISO 9001:2015: 5 marks.	5
1.4	Bidder has successfully completed at least one (01) Modular ITDC Project and its corresponding Principal has successfully deployed at least four (04) projects of similar nature (copy of PO/Contract and Job Completion required).	5
2	Bidder's Relevant Experience	35
2.1	Company experience in Number of turnkey Data Center job in following technology. Reference required (Certificates and Authorization letters)	10
	UPS	
	Cooling	
	Electrical equipment	
	DCIM	
	Switches	
	Storage	
	Structured ITDC Cabling	

2.2	Organization Financial Strength Annual Turnover for last Three (03) years and Audit Report confirming company sound financial Position. Less then 200 Million = 0 Marks More then 200 million = 5 Marks per year	15
2.3	Value of Similar Data Center Projects Similar Data Center projects in last five years. Each project will be vetted as follows: Below 20 Mn. PKR = 0 marks Above 20 and below 30 Mn = 2 marks Above 30 and below 40 Mn = 3 marks Above 40 Mn = 4 marks	10
3	Presentation on Proposed Solution –	35
3.1	Understanding of Requirement presentation Demonstration marks=10 Design and diagram(CFD and other relevant)=5 Project Proposal and timeline =5	20
3.2	ITDC Similar Project Site Visits(Bidder 1 Site, Principal 2 Sites) (5 Marks per site)	15
4	Support Offices and Resource allocation	10
4.2	Number of Offices and Support Facilities in Pakistan. Marks per Office=1 in all major Cities of Pakistan Additional Marks=1 shall be awarded for a fully functional office in Khyber Pakhtunkhwa and should commitment for retaining office in Peshawar for next 3 years during warranty/support period.)	5
4.3	Number of resources relevant dedicated for this project (Experience and CV's required) 1 to 3 = 1, 3 to 5= 3, > 6 = 5	5
	Total Marks	100

Note: Verifiable documentary proof for all above requirements and criteria points are mandatory requirement and marks will be awarded on the basis of these verifiable proofs.

Compliance sheet table 01

COMPLIANCE SHEET					
Sr. #	Description of Items	Qty	Unit	Response of Bidder	
				Quoted Model/Specifications	Compliance FC/PC/NC
1	Dismantling and Related Civil Work				
1.1	Dismantling, Shifting/reinstalling wooden partitions and all Related Civil Work	1	Job		
1.2	Anti-Static Flooring in the Data Center & Electrical Panel Room, Skirting, Floor Laying, False Ceiling, Fitting & Fixing, complete in all respect.	1	Job		
1.3	Fire Rated Paint Works	1	Job		
1.4	LED Lights,	34	Nos		

1.5	Motion Sensors OEM	5	Nos		
1.6	Emergency Lights	8	Nos		
1.7	Exit Lights	3	Nos		
1.8	90 Minutes Fire rated doors Local 16 SWG	3	Nos		
2	Datacenter Networking and Core Connectivity (Structured Cabling)				
2.1	Cat 6, Cable (305m), Original Copper	18	Nos		
2.2	24-port patch panels (Incl jacks) and 6U Cabinets	4	Nos		
2.3	Horizontal Cable Manager Front Only 1 RU	4	Nos		
2.4	Cat 6 patch cord CM (3m)	160	Nos		
2.5	Cat 6 patch cord CM (5m)	160	Nos		
2.6	CAT 6 Cable laying and termination	1	Job		
2.7	CAT 6 complete nodes certification with Fluke tester (With Reports) along with ducts and all accessories	80	Node		
2.8	24-Fiber (OM3) LSZH, Multi Mode Fiber Cable	1000	Mtr		
2.9	Rack Mountable 24 port type ODF SC along with Pigtails, complete in all respect	13	Nos		
2.10	SC-LC Patch Cord, LSZH, Duplex, SM 1 Meters	50	Nos		
2.11	SC-LC Patch Cord, LSZH, OM3, Duplex, MM 1 Meters	50	Nos		
2.12	6U Wall Mount Cabinet with PDU	4	Nos		
2.13	Fiber cable Splicing charges	350	Node		
3	Data Center Power System UPS 2(N+1)				
3.1	UPS 2(N+1) 25 KW UPS with Expandability Up to 100KW, Installation, configuration, integration commissioning and test run. complete in all respect.	2	Lots		
4	Power Distribution System, Type Tested LV Electrical Panel, Metered Rack PDU				
4.1	Type tested Low Voltage Electrical Panels Two Mains Incoming circuits, ATS and STS end to end connectivity, Installation, configuration, integration, commissioning and test run. complete in all respect.	2	Lots		
4.2	Power distribution rack based metered/intelligent system, Installation, configuration, integration, commissioning and test run. complete in all respect.	2	Lots		
4.3	Rack PDU Metered, ZeroU, 32-40A, 230V, Installation, configuration, integration, commissioning and test run. complete in all respect.	12	Nos.		
5	Power Cabling				
5.1	1 x 4C x 95sqmm + 50sqmm Earth cable per phase and neutral from Gen Set to ATS/AMF Panel & Electrical Panel including	1	Lot.		
5.2	1 x 4C x 50 sqmm+ 50sqmm Earth from Electrical Panel to UPS				
5.3	1 x 1 x 50 sqmm for LV Panel Grounding				
5.4	1x 1 x 50 sqmm for UPS Grounding				
5.5	1 x 4C x 50 sqmm for Main In-Row ACs panels A and B				
5.6	SRG and Earthing Bus Bars common interfacing				

	including cabling				
5.7	1.5 sq mm for lights				
5.8	Installation, configuration, integration, commissioning and test run. complete in all respect.				
6	Cable Ladder,Tray/trough for Power, Cooling & Data				
6.1	Powder Coated Galvanized Cable Tray for Power and Cooling, Cable Ladder as per specs given Installation, configuration, integration, commissioning and test run. complete in all respect.	1	Lot		
6.2	Fiber Runner, All Fiber and Data Cables trays and trough will be over head and Separate for power and Data, Installation, configuration, integration, commissioning and test run. complete in all respect.	1	Lot		
7	Earthing/Grounding System				
7.1	Earthing System of Data Center, electrical panel, gensets. Installation, configuration, integration commissioning and test run. complete in all respect.	3	Pits		
8	Diesel Generator				
8.1	Powered Diesel Generator 100kVA. Construction of RCC Foundation Pad, Supply of Sound and Weather Proof Canopy, Day tank Storage Installation, configuration, integration, commissioning and test run. complete in all respect.	1	No		
8.2	SYNC Panel, Direct Tap in of transformer output cable and removal of existing TAP Off bus bar will be required Installation, configuration, integration, commissioning and test run. complete in all respect.	1	No		
8.3	Integration of existing Generator with DCIM with necessary hardware installation and configuration complete in all respect.	1	No		
9	Precision Air Conditioners				
9.1	In-Row 30kW-42 kW, Air Cooled, 380-415V, 50/60Hz, with humidifier and condensation pump (dual power supply function) Detail in RFP(N+1), Installation, configuration, integration, commissioning and test run. complete in all respect.	2	Nos.		
10	Hot/Cold Aisle Containment				
10.1	This will be complete solution as per RFP for Hot/Cold Aisle containment with Ceiling and doors and all assembly material	1	Job		
11	Racks and Accessories for Modular Data Center				
11.1	6 x 42U 600mm Wide x 1000mm or greater Deep Enclosure and 2 x InRow Cooling Racks expendable upto 08 Racks with 1 KVM 8Ports Console with cables, Installation, configuration, integration, commissioning and test run. complete in all respect.	1	Lot.		
12	Data Center Infrastructure Management (DCIM) Solution				
12.1	DCIM, Installation, configuration, integration and test run. complete in all respect.	1	Job.		

13	Security and Environmental Monitoring System				
13.1	Security and EMS as per detail specs given. Installation, configuration, integration, commissioning and test run. complete in all respect.	1	Job.		
14	Access Control				
14.1	Door Access control with integrated TCP/IP controller, Installation, configuration, integration, commissioning and test run. complete in all respect.	3	Nos		
15	Fire Detection & Suppression				
15.1	Supply and installation of intelligent addressable fire detection system in Data Center, ITDC POD Room and Switchboard room. Each room is considered as separate fire suppression zone and all zones will be monitored through fire alarm control panel (FACP). Smoke Detectors, installation, configuration, integration, commissioning and test run. complete in all respect.	1	Job		
15.2	Hand Held Fire Extinguisher.	4	Job		
16	IP Based CCTV Cameras				
16.1	Indoor Fixed Mini Dome POE, 12/24V Camera Standard 2MP Resolution 20FPS, 1/2 RU Network Video Recorder 8TB, Installation, configuration, integration, commissioning and test run. complete in all respect.	12	Nos		
17	Comfort AC				
17.1	2 Tons Floor Standing units installation and commissioning	2	No		
18	SAN Storage with Switches				
18.1	should support iSCSi, IP SAN, FC SAN and NAS, having dual controller in active-active mode as per specs for 4 Servers(Huawei RH2288H V3 having VMWare 6.5 Standard already installed) with Emulex, FC HBA, 16Gb(LPe16002B), 2-Port, SFP+(with 2xMulti-Mode Optical Transceiver), PCIe 3.0x8 The bidder should provide 2 x 16G FC SAN 24 Port switches with dual power supply, each should have 12 ports activated, Total 24 multimode SFPs for both switches. Installation, configuration, integration, commissioning and test run. complete in all respect.	1	No		
19	Firewall With RPS				
19.1	Fortinet Firewall 501E including RPS with 3-years subscription UTM license, VPN licenses for 50 Users Installation, configuration, integration, commissioning and test run. complete in all respect.	1	No		
20	Aggregation Switches				
20.1	Aggregation Switch with 1/10G SFP Modules: Gigabit Ethernet L3 fixed configuration chassis in a 1U form factor with 24 100/1000 Base-X SFP ports, 2 10G fixed SFP+ ports; L3 Lite routing: Static Routes, IPv4 and IPv6; Stackable Switch, dual power supply without SFP Modules (US, European or Huawei brand only) 3 years	2	No		

	warranty/Support				
21	Access Switches				
21.1	Access Switches with POE feature and having 24-port 10/100/1000 Base T with 2x1 GE SFP Ports, Dual power supplies, Standard 3 years, without SFP Modules Warranty/Support.(US, European or Huawei brand only)	20	No		
22	Smart LED Screen				
22.1	Smart LED Screen 40" with LAN and Wifi ports	4	No		
23	IP Telephone				
23.1	8 FXS ports with PSTN FXO line in case of power failure 2 10/100 Mbps network ports (switched or routed) Comprehensive codec support, caller ID, flexible dial plans and security protection Support for T.38 fax Advanced security protection with SRTP installation and configuration and integration with University telephone exchange	1	No		
24	IP Phone Sets				
24.1	Basic IP Phone sets (19) with 2 ethernet ports vlan support and RJ-9 port , operator set(1) 128x384 or equivalent backlit LCD display20 programmable dual-color buttons per module, 2 pages per module (40 contacts total) BLF/speed dial Daisy-chain up to 3or4 modules for up to 120 or above contacts/extensions BLF (busy lamp field) Call Park/Pick-up, Speed Dial, Presence, Intercom, and conference/ transfer/forward and more)	20	No		
25	Training				
25.1	VVMare VCP6-NV , CISSP, CEHv10 from authorized training center for 3 IT Staff with exam vouchers	1	No		
26	Warranty/Support and Services				
26.1	3 years Warranty/Support and Services. including power fluctuation coverage	1	Job		
27	AVR				
27.1	100kva AVR with installation, Integration and 3 years warranty . Power:100 kVA . Phase: 3 Phases , Input: 280V – 460V Frequency: 50/60Hz , Dual Output , 380/400/200 (Phase to Phase) +/- 3% (Regulated), Power Factor: 0.9 Control: Servo Motor , Short Circuit Protection Required Overloading Protection Required, Bypass Manual Switching, Surge Protection Required, Standard CE Certified or equivalent	2	No		
Note: All quantities will be charged on as per actual basis.					

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 Public Procurement Rules, 2004. 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.
- 23.3 In cases of discrepancy between the cost/price quoted in Words and in Figures, the lower of the two will be considered.
- 23.4 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.;
- 23.5 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.
- 23.6 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-33 of Public Procurement Rules, 2004 towards the bidders. However, bidders shall be promptly informed about the rejection of the bids, if any (As per Rule 33 of Public Procurement Rules, 2004).
- 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 is not submitted completely for all the items required to be purchased under this Tender; or
 - 24.2.5 bid security is not submitted; or
 - 24.2.6 subjected to interlineations / cuttings / corrections / erasures / overwriting; or
 - 24.2.7 the Tenderer refuses to accept the corrected Total Tender Price; or
 - 24.2.8 the Tenderer has conflict of interest with the Purchaser; or

- 24.2.9 the Tenderer tries to influence the Tender evaluation / Contract award; or
- 24.2.10 the Tenderer engages in corrupt or fraudulent practices in competing for the Contract award;
- 24.2.11 the Tenderer fails to meet all the requirements of Tender Eligibility / Qualification Criteria (Clause-7);
- 24.2.12 the Tenderer fails to meet the evaluation criteria requirements (clause-22);
- 24.2.13 the tenderer has been blacklisted by any public or private sector organization;
- 24.2.14 the tenderer has been served any legal notices or displeasure letters by any public sector organization on serious failures to provide satisfactory services;
- 24.2.15 the tenderer has mentioned any financial implication(s) in the financial proposal that is in contradiction to this document and Government rules and regulations.
- 24.2.16 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.
- 24.2.17 the Tenderer submits any financial conditions as part of its bid which are not in conformity with tender document.
- 24.2.18 Non-submission of verifiable proofs against the mandatory as well as general documentary, qualification and eligibility related requirements.
- 24.2.19 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 (38) of Public Procurement Rules 2004, the Purchaser shall issue the Acceptance Letter to the successful Tenderer, at least after 10 days of announcement of bid evaluation reports (Ref. Rule-35 of Public Procurement Rules, 2004) 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 Guarantee

- 27.1 The successful Tenderer/The Contractor shall furnish Performance Guarantee as under:
- 27.1.1 within twenty-eight (28) days of the receipt of the Acceptance Letter from the Purchaser;
- 27.1.2 in the form of a Bank Guarantee, issued by a scheduled bank operating in Pakistan, as per the format provided in the Tender Document;
- 27.1.3 for a sum equivalent to 10% of the contract value;
- 27.1.4 denominated in Pak Rupees;

- 27.1.5 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 Guarantee shall be acceptable with any validity less than the prescribed time period.
- 27.2 The Performance Guarantee 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 guarantee to be extended for such period(s) as the contract performance may be extended. The Performance Guarantee 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 Guarantee 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 Any bidder feeling aggrieved by any act of the Purchaser after the submission of his bid may lodge a written complaint concerning his grievances, to the Grievance Redressal Committee of the Procuring Agency, not later than ten days after the announcement of the bid evaluation report.
- 28.2 The committee shall investigate and decide upon the complaint within fifteen days of the receipt of the complaint.
- 28.3 Mere fact of lodging of a complaint shall not warrant suspension of the procurement process.
- 28.4 Any bidder not satisfied with the decision of the committee of the Purchaser may lodge an appeal in the relevant court of jurisdiction.

Contract Title:

Supply, Installation and Commissioning of Equipment for Center for IT Services

Establishment of Modular IT Data Center

[Name of Contractor]

Dated:

TABLE OF CONTENTS

I.	Agreement
II.	General Conditions of Contract
29.	Contract
30.	Contract Duration
31.	Contract Documents and Information
32.	Contract Language
33.	Standards
34.	Commercial Availability
35.	Patent Right
36.	Execution Schedule
37.	Packing
38.	Insurance
39.	Labeling
40.	Delivery
41.	Installation and Implementation
42.	Site Preparation
43.	Safety
44.	Test Equipment and Tools
45.	Spare Parts and Support
46.	Inspection and Testing
47.	Taking-Over Certificate
48.	Warranty
49.	Ownership of Goods and Replaced Components
50.	Defects Liability Expiry Certificate
51.	Payment
52.	Price
53.	Contract Amendment
54.	Assignment / Subcontract
55.	Extensions in time for performance of obligations under the Contract
56.	Liquidated Damages
57.	Blacklisting
58.	Forfeiture of Performance Guarantee
59.	Termination for Default
60.	Termination for Insolvency
61.	Termination for Convenience
62.	Force Majeure
63.	Dispute Resolution
64.	Statutes and Regulations
65.	Taxes and Duties
66.	Contract Cost
67.	Authorized Representative
68.	Waiver
69.	Training
70.	Documentation
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 Guarantee
 - k. Warranty and Support Agreement (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 _____ Signature _____

CNIC # _____ CNIC # _____

Name _____ Name _____

Designation _____ Designation _____

Address _____ Address _____

II. General Conditions of Draft Contract

29. Contract

The Purchaser shall, after receipt of the Performance Guarantee 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 **three (3) years**, starting from the date of delivery, installation, deployment & commissioning of all Goods / Equipment / Items till end of warranty / support period.

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.

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 twelve **(12)** 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. All 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 designated (installation) site. 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 the University of Peshawar, Peshawar, or any other site within Peshawar, 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 Purchaser 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 Purchaser 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, Implementation and Maintenance/System Management

- 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 Purchaser 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 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 Purchaser 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 Equipment / Hardware, 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 Guarantee.
- 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 Purchaser 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 Purchaser, apply for a Taking-Over Certificate.
- 47.2 The Purchaser shall, within fourteen days of receipt of Contractor's application, either issue the Taking-Over Certificate to the Contractor, 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 three (3) year 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 Purchaser shall, by written notice served on the Contractor, 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 Purchaser, apply for a Defects Liability Expiry Certificate.
- 50.2 The Purchaser shall, within fourteen days of receipt of such notice, either issue the Defects Liability Expiry Certificate to the Contractor, 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 of the University of Peshawar 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, to the Contractor, as per Government policy, in Pak Rupees, through crossed cheque.
- 51.5 The Contractor shall cause the validity period of the performance guarantee 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.
- 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, 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, 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 Public Procurement Rules, 2004.

58. Forfeiture of Performance Guarantee

- 58.1 The Performance Guarantee 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 guarantee 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 Guarantee 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 Guarantee 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, 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 Purchaser 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, 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 The University of Peshawar may, at any time, by written notice sent to the Contractor, may terminate the Contract, in whole or in part, for its convenience. The notice of terminations shall specify that termination is for the University of Peshawar's convenience, the extent to which performance of Supplier under the Contract is terminated, and the date upon which such termination becomes effective.

61.2 The Goods and the Services which are complete and ready for shipment within **thirty (30) days** after the Contractor's receipt of termination 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 at the Contract terms and prices; 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.

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 Peshawar, 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 Guarantee, 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 Peshawar, 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 Peshawar 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 Government rules and regulations for signing of the formal contract.

67. Authorized Representative

- 67.1 The Purchaser 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.
- 67.2 The Authorized Representative shall only carry out such duties and exercise such authority as may be delegated to him, by the Purchaser or the Contractor.
- 67.3 Any such delegation or revocation shall be in writing and shall not take effect until notified to the other parties to the Contract.

- 67.4 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.
- 67.5 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 Purchaser to disapprove such Goods or Services or Works and to give instructions for the rectification thereof.
- 67.6 If the Contractor questions any decision or instruction of the Authorized Representative of the Purchaser, the Contractor may refer the matter to the Purchaser who may confirm, reverse or vary such decision or instruction.

68. 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.

69. Training

- 69.1 The Contractor shall arrange and undertake a comprehensive training program for the staff nominated by the Purchaser 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.
- 69.2 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 and proceed to implement suitable remedial measures after consultation with them.

70. 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.

71. Special Stipulations

SCHEDULE-A, SPECIAL STIPULATIONS	
For ease of Reference, certain special stipulations are as under:	
Bid Security (Earnest Money)	<p>The Contractor shall furnish the Bid Security (earnest Money) as under:</p> <ul style="list-style-type: none"> • 02% (Two Percent) of the Bid Price in the form of Demand Draft / Pay Order / Call Deposit Receipt, in the name of the Purchaser; denominated in Pak Rupees; • Have a minimum validity period of one hundred and twenty days (120) from the last date for submission of the Tender or until furnishing of the Performance Guarantee, whichever is later.
Performance Guarantee	<p>The successful Contractor shall furnish Performance Guarantee as under:</p> <ul style="list-style-type: none"> • 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 contract value; • in subsequence to the issuance of Letter of Acceptance; 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	Within twelve (12) weeks from the issuance of Acceptance Letter.
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.

72. ANNEXURE-A

TECHNICAL SPECIFICATION AND BILL OF MATERIAL

Sr. #	Description of Items	Qty	Unit
1	Dismantling and Related Civil Work		
1.1	Dismantling, Shifting/reinstalling wooden partitions and all Related Civil Work	1	Job
1.2	Anti-Static Flooring in the Data Center & Electrical Panel Room, Skirting, Floor Laying, False Ceiling, Fitting & Fixing, complete in all respect.	1	Job
1.3	Fire Rated Paint Works	1	Job
1.4	LED Lights,	34	Nos
1.5	Motion Sensors OEM	5	Nos
1.6	Emergency Lights	8	Nos
1.7	Exit Lights	3	Nos
1.8	90 Minutes Fire rated doors Local 16 SWG	3	Nos
2	Datacenter Networking and Core Connectivity (Structured Cabling)		
2.1	Cat 6, Cable (305m), Original Copper	18	Nos
2.2	24-port patch panels (Incl jacks) and 6U Cabinets	4	Nos
2.3	Horizontal Cable Manager Front Only 1 RU	4	Nos
2.4	Cat 6 patch cord CM (3m)	160	Nos
2.5	Cat 6 patch cord CM (5m)	160	Nos
2.6	CAT 6 Cable laying and termination	1	Job
2.7	CAT 6 complete nodes certification with Fluke tester (With Reports) along with ducts and all accessories	80	Node
2.8	24-Fiber (OM3) LSZH, Multi Mode Fiber Cable	1000	Mtr
2.9	Rack Mountable 24 port type ODF SC along with Pigtails, complete in all respect	13	Nos
2.10	SC-LC Patch Cord, LSZH, Duplex, SM 1 Meters	50	Nos
2.11	SC-LC Patch Cord, LSZH, OM3, Duplex, MM 1 Meters	50	Nos
2.12	6U Wall Mount Cabinet with PDU	4	Nos
2.13	Fiber cable Splicing charges	350	Node
3	Data Center Power System UPS 2(N+1)		
3.1	UPS 2(N+1) 25 KW UPS with Expandability Up to 100KW, Installation, configuration, integration, commissioning and test run. complete in all respect.	2	Lots.
4	Power Distribution System, Type Tested LV Electrical Panel, Metered Rack PDU		
4.1	Type tested Low Voltage Electrical Panels Two Mains Incoming circuits ATS and STS, end to end connectivity, Installation, configuration, integration, commissioning and test run. complete in all respect.	2	Lots.
4.2	Power distribution rack based metered/intelligent system, Installation, configuration, integration, commissioning and test run. complete in all respect.	2	Lots.
4.3	Rack PDU Metered, ZeroU, 32-40A, 230V, Installation, configuration, integration, commissioning and test run. complete in all respect.	12	Nos.

5	Power Cabling		
5.1	1 x 4C x 95sqmm + 50sqmm Earth cable per phase and neutral from Gen Set to ATS/AMF Panel & Electrical Panel including	1	Lot.
5.2	1 x 4C x 50 sqmm+ 50sqmm Earth from Electrical Panel to UPS		
5.3	1 x 1 x 50 sqmm for LV Panel Grounding		
5.4	1x 1 x 50 sqmm for UPS Grounding		
5.5	1 x 4C x 50 sqmm for Main In-Row ACs panels A and B		
5.6	SRG and Earthing Bus Bars common interfacing including cabling		
5.7	1.5 sq mm for lights		
5.8	Installation, configuration, integration, commissioning and test run. complete in all respect.		
6	Cable Ladder, Tray/trough for Power, Cooling & Data		
6.1	Powder Coated Galvanized Cable Tray for Power and Cooling, Cable Ladder as per specs given Installation, configuration, integration, commissioning and test run. complete in all respect.	1	Lot
6.2	Fiber Runner, All Fiber and Data Cables trays and trough will be over head and Separate for power and Data, Installation, configuration, integration, commissioning and test run. complete in all respect.	1	Lot
7	Earthing/Grounding System		
7.1	Earthing System of Data Center, electrical panel, gensets Installation, configuration, integration, commissioning and test run. complete in all respect.	3	Pits
8	Diesel Generator		
8.1	Powered Diesel Generator 100kVA. Construction of RCC Foundation Pad, Supply of Sound and Weather Proof Canopy, Day tank Storage Installation, configuration, integration, commissioning and test run. complete in all respect.	1	No
8.2	SYNC Panel, Direct Tap in of transformer output cable and removal of existing TAP Off bus bar will be required Installation, configuration, integration, commissioning and test run. complete in all respect.	1	No
8.3	Integration of existing Generator with DCIM with necessary hardware installation and configuration complete in all respect.	1	No
9	Precision Air Conditioners		
9.1	In-Row 30kW-42 kW, Air Cooled, 380-415V, 50/60Hz, with humidifier and condensation pump (dual power supply function). Detail in RFP(N+1), Installation, configuration, integration, commissioning and test run. complete in all respect.	2	Nos.
10	Hot/Cold Aisle Containment		
10.1	This will be complete solution as per RFP for Hot/Cold Aisle containment with Ceiling and doors and all assembly material	1	Job
11	Racks and Accessories for Modular Data Center		
11.1	6 x 42U 600mm Wide x 1000mm or greater Deep Enclosure and 2 x InRow Cooling Racks expendable upto 08 Racks with 1 KVM 8Ports Console with cables, Installation, configuration, integration, commissioning and test run. complete in all respect.	1	Lot.
12	Data Center Infrastructure Management (DCIM) Solution		

12.1	DCIM, Installation, configuration, integration and test run. complete in all respect.	1	Job.
13	Security and Environmental Monitoring System		
13.1	Security and EMS as per detail specs given. Installation, configuration, integration, commissioning and test run. complete in all respect.	1	Job.
14	Access Control		
14.1	Door Access control with integrated TCP/IP controller, Installation, configuration, integration, commissioning and test run. complete in all respect.	3	Nos
15	Fire Detection & Suppression		
15.1	Supply and installation of intelligent addressable fire detection system in Data Center, ITDC POD Room and Switchboard room. Each room is considered as separate fire suppression zone and all zones will be monitored through fire alarm control panel (FACP). Smoke Detectors, installation, configuration, integration, commissioning and test run. complete in all respect.	1	Job
15.2	Hand Held Fire Extinguisher.	4	Job
16	IP Based CCTV Cameras		
16.1	Indoor Fixed Mini Dome POE, 12/24V Camera Standard 2MP Resolution 20FPS, 1/2 RU Network Video Recorder 8TB, Installation, configuration, integration, commissioning and test run. complete in all respect.	12	Nos
17	Comfort AC		
17.1	2 Tons Floor Standing units installation and commissioning.	2	No
18	SAN Storage with Switches		
18.1	SAN Storage should support iSCSi, IP SAN, FC SAN and NAS, having dual controller in active-active mode as per specs for 4 Servers(Huawei RH2288H V3 having VMWare 6.5 Standard already installed) with Emulex, FC HBA, 16Gb(LPe16002B), 2-Port, SFP+(with 2xMulti-Mode Optical Transceiver), PCIe 3.0x8 The bidder should provide 2 x 16G FC SAN 24 Port switches with dual power supply, each should have 12 ports activated, Total 24 multimode SFPs for both switches. Installation, configuration, integration, commissioning and test run. complete in all respect.	1	No
19	Firewall With RPS		
19.1	Fortinet Firewall 501E including RPS with 3 years subscription UTM license, VPN licenses for 50 Users, Installation, configuration, integration, commissioning and test run. complete in all respect.	1	No
20	Aggregation Switches		
20.1	Aggregation Switch with 1/10G SFP Modules: Gigabit Ethernet L3 fixed configuration chassis in a 1U form factor with 24 100/1000 Base-X SFP ports, 2 10G fixed SFP+ ports; L3 Lite routing: Static Routes, IPv4 and IPv6; Stackable Switch, dual power supply without SFP Modules (US, European or Huawei brand only) 3 years warranty/Support.	2	No
21	Access Switches		
21.1	Access Switches with POE feature and having 24-port 10/100/1000 Base T with 2x1 GE SFP Ports, Dual power supplies, Standard 3 years Warranty/Support. Without SFP Modules (US, European or Huawei	20	No

	brand only)		
22	Smart LED Screen		
22.1	Smart LED Screen 40" with LAN and Wifi ports	4	No
23	IP Telephone		
23.1	8 FXS ports with PSTN FXO line in case of power failure 2 10/100 Mbps network ports (switched or routed) Comprehensive codec support, caller ID, flexible dial plans and security protection Support for T.38 fax Advanced security protection with SRTP installation and configuration and integration with University telephone exchange	1	No
24	IP Phone Sets		
24.1	Basic IP Phone sets (19) with 2 ethernet ports vlan support and RJ-9 port , operator set(1) 128x384 or equivalent backlit LCD display 20 programmable dual-color buttons per module, 2 pages per module (40 contacts total) BLF/speed dial Daisy-chain up to 3or4 modules for up to 120 or above contacts/extensions BLF (busy lamp field) Call Park/Pick-up, Speed Dial, Presence, Intercom, and conference/ transfer/forward and more)	20	No
25	Training		
25.1	VWMare VCP6-NV , CISSP, CEHv10 from authorized training center for 03 IT Staff with exam vouchers	1	No
26	Warranty/Support and Services		
26.1	3 years Warranty/Support and Services. including power fluctuation coverage	1	Job
27	AVR		
27.1	100kva AVR with installation, Integration and 3 years warranty . Power:100 kVA . Phase: 3 Phases , Input: 280V – 460V, Frequency: 50/60Hz , Dual Output:380/400/200 (Phase to Phase) -/+ 3% (Regulated), Power Factor: 0.9, Control: Servo Motor, Short Circuit: Protection Required, Overloading Protection Required, Bypass Manual Switching, Surge Protection Required, Standard CE Certified or equivalent	2	No
Note: All quantities will be charged on as per actual basis.			

FORMS & OTHER REQUIRED DOCUMENTS

73. ANNEXURE-B

Technical Proposal Submission Form

[Location, Date]

To (Name and address of 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 / Khyber Pakhtunkhwa 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 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 _____

74. ANNEXURE-C

[Location, Date]

Financial Proposal Submission Form (Part of Financial Bid Envelope)

To (Name and address of 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 / Khyber Pakhtunkhwa 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:

75. ANNEXURE-D

Price Schedule/ Financial Cost Sheet

Sr. No.	Item Description	Brand	No of Units/Qty	Unit Rate (Excl. Taxes) Rs.	Sales Tax	Unit Rate (Incl. all Taxes) Rs.	Total Price (Incl. all Taxes) Rs
			(1)	(2)	(3)	(4=2+3)	(5=1x4)
1							
2							
	Total Bid Price						X

Notes to Price Table:

- i. X will determine the total bid price for all items.
- ii. Prices must be quoted for all items.
- iii. The Purchaser reserves exclusive rights to increase / decrease the quantities of Goods/equipment/ hardware mentioned vide this tender document.
- iv. Hardware quoted must be legally imported in Pakistan after paying all taxes.

Total Cost (in words) Rs. _____

Signature of authorized person _____

Name: _____

In the capacity of _____

Date _____

(Company Seal)

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

76. ANNEXURE-E

Format for Covering Letter

To
(Name and address of Purchaser)

Subject: _____.

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 University of Peshawar.
- 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 University of Peshawar, 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

77. 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 University of Peshawar including signing and submission of all documents and providing information/responses to University of Peshawar 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:

78. 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:

79. ANNEXURE-H

(To be submitted on legal stamp paper)

(Integrity Pact)

AFFIDAVIT

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 University of Peshawar. 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 University of Peshawar 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 University of Peshawar and has not taken any action or will not take any action to circumvent the above declaration, representation or warranty.

[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. 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 University of Peshawar under any law, contract or other instrument, be voidable at the option of the University of Peshawar.

Notwithstanding any rights and remedies exercised by the Purchaser in this regard, [the Seller/Supplier/Contractor] agrees to indemnify the University of Peshawar for any loss or damage incurred by it on account of its corrupt business practices and further pay compensation to the University of Peshawar in an amount equivalent to ten time 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 University of Peshawar.

Signature & Stamp _____

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

Notary Public

80. ANNEXURE-I

PERFORMANCE GUARANTEE

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 Guarantee, 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 University of Peshawar, for the sum of PKR (in figures _____) (in words _____) and undertakes to pay to the University of Peshawar, 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 University of Peshawar 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 University of Peshawar 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 University of Peshawar 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 2018.

GUARANTOR

Signature _____
CNIC # _____
Name _____
Designation _____
Address _____

81. ANNEXURE-J

S. No	Resource Name	Education	Certification by OEM	No. of Similar assignments	Value of Similar Assignment	Role in Similar Assignment	Time with Firm	Document Proof Attached(Yes/No)
1								
2								
3								