



**PESHAWAR INSTITUTE OF CARDIOLOGY
(MTI)
BID SOLICITATION DOCUMENTS
FOR
PROCUREMENT OF IT EQUIPMENTS
LEFT OVER LOTS (3rd Time)
PIC-029
FOR THE YEAR 2021-22
After Pre-Bid**

Note: The prospective bidder is expected to examine the Bidding Documents carefully, including all Instructions, Terms & Conditions, and Specifications etc. Failure to furnish all information required by the Bidding documents or submission of a Bid not substantially responsive to the Bidding Documents in every respect would result in the rejection of the Bid.

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1. INTRODUCTION:

Peshawar Institution of Cardiology-MTI invites. Item wise sealed bids from the eligible bidders (General Order Suppliers) for procurement of IT Equipments for Hospital Open Competitive Bidding under rule 6(2) (a) “**Single Stage Two Envelope**” bidding procedures of Khyber Pakhtunkhwa Public Procurement Regulatory Authority (KPPRA) Rules 2014.

Description	Dates
Pre-bid meeting	13-04- 2021 at 10:00 am
Closing/Last submission/Opening	04-05-2020 11:00 hours & 11:30 Hours
Bid security	3 % of the Total Bid Value
Tender Process	Single Stage Two Envelope

2. INSTRUCTIONS TO BIDDERS:

1. This Bidding procedure will be conducted in light of Khyber Pakhtunkhwa Public Procurement Regulatory Authority (KPPRA) Laws, Rules made there under along with Standard Bidding Documents.
2. Any bid received after the deadline for submission of bids shall not be entertained and shall be returned unopened to the Bidder.
3. All the bidders are required to provide annexure wise complete requisite documents with page marking for their Technical Evaluation / Qualification as prescribed under the rules.
4. The bid should be complete in all respect and must be signed by the bidder.
5. All prices quoted must be in Pak Rupees (PKR) and should include all applicable taxes. If not specifically mentioned in the Quotation, it will be presumed that the prices include all the taxes. PIC Peshawar is exempted from GST.
6. Bidders are essentially required to provide correct and latest postal/email/web addresses, phone/mobile/fax numbers for actively and timely communication.
7. For any query, clarification regarding Services / Bid Solicitation Documents, the applicants may send a written request at least one day prior to the opening date.
8. The Bidder may after its submission withdraw its bid prior to the expiry of the deadline prescribed for submission of bids. Withdrawn bids will be returned unopened to the Bidders.
9. Any bid not received as per terms and conditions laid down in this document are liable to be ignored. No offer shall be considered if:
 - a. Received without earnest money;
 - b. It is received after the date and time fixed for its receipt;
 - c. The tender document and the bid is unsigned;

- d. The offer is ambiguous;
- e. The offer is conditional i.e. advance payment, or currency fluctuations etc.;
- f. The offer is from blacklisted firm in any Federal / Provincial Govt. Deptt:
- g. Hand written bids shall NOT be accepted; it must be typed.

- 10. Usage of correction fluid & corrections are strictly prohibited unless duly initiated.
- 11. Any erasing / cutting etc. appearing on the offer, must be properly signed by the person signing the tender.
- 12. Bids will be rejected if the Bid is in some way connected with bids submitted under names different from his own.
- 13. In case of Bid Tie, the decision will be taken by making toss/draw/Recall sealed quotation in front of the bidders.
- 14. Any direct or indirect effort by a bidding firm to influence this institution during the process of selection of a bidder or award of contract may besides rejection of its bid result into its disqualification from participation in the PIC Peshawar's future bids.
- 15. All bidders must provide compliance sheet in soft copy with bid submission.

3. ELIGIBLE BIDDERS:

- a. Bidders must give compliance to the below mentioned clauses as these are mandatory to being eligible for the bidding process. Relevant certificates must be attached.
- b. The bidder must be registered with Income / Sales Tax Department, reflected as Active Tax Payer on the list of FBR.NTN and KPK Professional tax.
- c. The bidder shall provide an undertaking that the bidder has not been declared black listed by any Governmental/ Semi-Governmental institutions.
- d. Bidders shall not be eligible to bid if they are under a declaration of Ineligibility for corrupt and fraudulent practices issued by any government organization in accordance with the Section 44(1) KPP Rules 2014.

4. GENERAL CONDITIONS: -

- 1. PIC Peshawar shall evaluate the proposal in a manner prescribed in advance, without reference to the price and reject any proposal which does not conform to the specified requirements.
- 2. At any time prior to the deadline for submission of bids, PIC-MTI Peshawar may, for any reason, whether at its own initiative or in response to a clarification requested by a prospective Bidder, modify the bidding documents by amendment.
- 3. If a bid is not substantially responsive, it will be rejected by the Procuring Entity and may not subsequently be made responsive by the Bidder by correction of the nonconformity.
- 4. PIC-MTI Peshawar may accept or reject any or all of the bids under KPPRA Rules, 2014.
- 5. Non-Provision of mandatory documents mention in these SBDs shall lead to

- disqualification of the firm / quoted items.
6. Bid document and required documents must be submitted in Hard Tap binding, Bids in the Clip or box file will not be allowed
 7. The Procuring Agency, at any stage of the procurement proceedings, having credible reasons for or prima facie evidence of any defect in Supplier's capacities may require the Suppliers to provide information concerning their professional, technical, financial, legal or managerial competence.
 8. The Procuring Agency has the right to inspect the premises of bidder to inspect the setups ensuring proper after sales services, documents mentioned in technical bids and any other relevant details. Premises (office/workshop) of bidder shall be insured through ownership/or Rent agreement.
 9. The Bid security shall be from bank account of the bidder. Ordinary cheque and Payment Order (PO) in the form of bid security shall result in bid rejection.
 10. The Unit price quoted by the bidder shall be **inclusive** of all applicable duties and taxes. All prices shall include relevant taxes & duties, where applicable. The benefit of exemption from or reduction in the GST or other taxes shall be passed on to the Procuring Agency.
 11. In case of the Importers/Authorized Dealers, the firm will ensure that the items are acquired from the original manufacturer and are procured through proper channel as advised by the original manufacturer.
 12. Different models/ prices offered for a single item by the same bidder shall be considered as alternate bid and shall be non-responsive.
 13. All reservations in SBDs shall be submitted in writing in the pre-bid meeting by authorized person/representative of the firm.
 14. Rates will be valid till **31 December 2021**.
 15. The schedule for supply of goods shall be as under:
 - i. Within 90 days from the date of issuance of supply order by the Purchasing Agency for items to be imported.
 - ii. Within 60 days from the date of issuance of supply order by the Purchasing Agency for items to be locally manufactured.
 - iii. Within 30 days from the date of issuance of supply order by the Purchasing Agency for items to be locally available
 16. The Penalty on late supply of goods shall be charged as under
 - i. Penalty @ 2% for late supply up to 15 days.
 - ii. Penalty @ 5% for late supply beyond 15 days

5. INVITATION FOR BIDS

Hospital Director, **Peshawar Institution of Cardiology-MTI** invites sealed tenders on National Competitive Bidding for the procurement of IT Equipments for Hospital, under rule 6(2)(a) ***“single stage two envelope procedure”*** of KPPRA Rules 2014, from reputed firms registered with the Income / Sales tax, reflected on Active Taxpayer List of FBR.

The bidders are required to submit bid security 3% of the total bid value in the name of Hospital Director PIC Peshawar. An affidavit is mandatory, without indicating the figure in the technical bid that bid security is placed in the financial bid. Pre-bid meeting with the interested bidders will be held on 13-04-2021 at 10:00 hrs at the address given below.

The tenders complete in all respect must reach the undersigned by 11:00 hrs. on 04-05-2021, which will be opened at 11:30 hrs. on the same day in conference room of the Complex in the presence of the procurement committee and the bidders / representatives who may choose to attend.

Competent Authority reserves the right to reject any or all the bids as per provisions contained in Rule 47 of KPPRA Rules 2014.

6. BID SECURITY

Bid security 2% of the total bid value in favor of "Hospital Director PIC Hospital" should be kept sealed in the financial proposal. An affidavit is mandatory without indicating the figure in the technical bid that bid security is placed in the Financial proposal.

Bid security of the successful bidder will be released after submission of Performance Guarantee.

The bid security may be forfeited:

- i) If a Bidder withdraws its bid during the period of bid validity specified by the Bidder on the Bid Form; or
- ii) In the case of a successful Bidder, if the Bidder fails to sign the contract Or to furnish performance Guarantee.

7. BID VALIDITY:

- i) The bids should be valid for a period of 120 days.
- ii) In exceptional circumstances, PIC Hospital may solicit the Bidder's consent to an extension of the period of validity reasons shall be recorded in writing. The request and the responses there to shall be made in writing. The bid security provided shall also be suitably extended. A Bidder may refuse the request without forfeiting its bid security. A Bidder granting the request will not be required nor permitted to modify its bid, except as provided in the bidding document.

EVALUATION CRITERIA

The bids / proposals will be evaluated on the basis of advertisement, bid solicitation documents and the point system as specified below.

A proposal shall be rejected during the technical evaluation if the bid does not fulfill the minimum specified requirements OR if it fails to achieve the minimum score as indicated in the below mentioned table. Relevant certificates / documents must be attached.

Technical Marks:70 (Technical Passing Marks 49)

Financial Marks: 30

Total Marks (70+30) =100

Total Marks in Technical Criteria: 70

S #	Parameters	Sub-parameters	Marks
1	Product Specification		27
	Product that 100% comply with the advertised specifications	Fully compliance with the required specifications as per statement of Requirement (Up to a maximum of four Minor deviations may be accommodated subject to the condition that main function and performance in any aspect would not affect. However, up to four marks will be deducted	25
	Special features	Additional features of the product if it enhances the Performance of equipment in required Field or Additional Software Provided Free of cost	2
2	Legal Requirement		10
		Sales Tax Registration Certificate	Mandatory
		NTN Registration Certificate	Mandatory
		Registration with Khyber Pakhtunkhwa Revenue Authority	Mandatory
		Non-Shareholder certificate, that no employee of Peshawar Institute of Cardiology is shareholder in my business	Mandatory
		Most recent Sales Tax Return from FBR last one year	3
		Income Tax Returns of last three years	3
		Bank Statement of the Firm Last 2 years	4

3	Relevant Experience in (Quoted Items)		10
		i. 3 Institutes ii. 6 Institutes iii. 10 Institutes (Purchase Order should be attached (1 PO carry 1 mark)	3 6 10
4	Testing and Calibration		2
		i. List of tools, testing equipment and calibration equipment relevant to the product ii. Spare Parts readily available in Stock	1 1
5	Qualified Technical Staff		3
		i. 2 Qualified Graduate in IT ii. 4 Qualified Diploma holder in IT/Networking (Degree should be attached)	1 2
6	Financial Capabilities		10
	Turnover in Millions Audit Report / Bank Statement Should be attached	i. 1-15 million ii. 16-30 million iii. 31- 50 millions	3 6 10
7	National Office / Peshawar Office		5
		i. Availability of office in Peshawar ii. Availability of office at national Level To be verified with Ownership / Rent Agreement with Owner / Rent Agreement with Company Name.	3 2
8	Additional Warranty		3
		Additional warranty of 1 year	3
	Total Marks		70

Passing Marks :49

Financial Criteria (30 Marks):

S #	Parameters	Sub-Parameters	Total Marks: 30
	Price		30
		<p>Lowest Price will get full marks.</p> <p>The formula to calculate the marks for the price submitted is:</p> <p>$\frac{[\text{Lowest Price (Fm)} / \text{Price of Bid under consideration (F)}] \times 100 \times 0.30}{1}$</p>	30

Total Marks (Technical Criteria + Financial Criteria): 100

Financial bids of only technically responsive bidders will be opened publicly at the time to be announced by the Procuring Agency. The Financial Bids of technically disqualified bidders will be returned un-opened to the respective Bidders. After getting the financial score from the remaining 30 marks, the two scores will be combined to identify the best evaluated bid.

Merit Point Evaluation Methodology: Contract will be awarded to the best evaluated responsive bid which gets the maximum marks and becomes the highest ranking in the Combined Evaluation calculated through the Merit Point Average Methodology which puts greater emphasis on non-price factors like stringent global certifications on Conformance Specifications (i.e., meeting the required technical specifications), Performance Specifications (i.e., meeting the requirements the product is designed for) leading to customer satisfaction verification, certifications of the technical staff, provision of maintenance & services and post-warranty services etc.

STATEMENT OF REQUIREMENT WITH SPECIFICATION

LOTS	Items	Estimated Qty
LOT-1	Datacenter & Optical Fiber Cabling	1
1A	Smart Modular Data Center Solution	
1B	Multimode 10G Fiber Optic Cabling	
	Branded Fiber Optic Cable 24 Core 10G Multimode OM3	As per actual
	Branded OFDF 24 Ports OM3, LC Adapter with 16 Pigtails & Accessories	21
	Branded OFDF 48 Ports OM3, LC Adapter with 48 Pigtails fully loaded with Accessories	6
	Branded Front Cable Organizers with accessories	30
	Patch Cords - Branded Fiber Optic LC to LC OM3 3Meter Multimode (Minimum Quantity 64)	As per actual
	Patch Cords - Branded Fiber Optic LC to LC OM3 5Meter Patch Cords (Minimum Quantity 64)	As per actual
	Pigtail - Branded Fiber Optic pigtails OM3 2Meter Multimode, compatible with provided ODF (Additional)	16
	Cabinets - Branded 15U Wall Mount cabinet with 3 or 4 side access powder coated, to cater current network accessories	3
	Fiber Optic Laying Charges with UPVC Pipes & Dura Ducts included (per running meter)	As per actual
	Fiber Optic Splicing (per unit splice)	As per actual
LOT-2	Workstation	
	Workstation (High-Level)	2
	Workstation (Mid-Level)	4
	Workstation (Entry-Level)	4
LOT-3	Laptops	
	Ultra Book (Core i7)	2
	Ultra Book (Core i5, Convertible)	2
	Mobile Workstation (with 6GB Graphics)	2
	Mobile Workstation (with 4GB Graphics)	2
	Professional Series Notebook (with Core i5- 2G Graphics)	5
	Professional Series Notebook (with Core i3)	20
LOT-4	Software Licenses	
	Windows Server STD License (16-core) per server	5
	Windows 10 Professional 64-bit	30
	VMware vSphere Essentials Plus Kit	1
LOT-5	Server Accessories & SAN Switch	
	HPE 1.92TB SATA MU SFF SC MV SSD (P18436-B21)	6
	HPE 32GB 2Rx4 PC4-2933Y-R Smart Kit (P00924-B21)	8
	HPE SN1100Q 16Gb Dual Port Fiber Channel Host Bus Adapter (P9D94A-B21)	6

	HPE Ethernet 10Gb 2-port BASE-T X550-AT2 Adapter (817738-B21)	4
	Aruba 10G SFP+ LC SR 300m MMF Transceiver (J9150D)	34
	SAN switch (compatible with existing equipment)	
	Connectrix DS-6610B 8P/24P switch w/rear to front airflow (Includes 8x16GbSFPs + rack kit) (210-ASSS)	2
	Jumper Cord 12A 4M c13 / C14 (450-AFFU)	4
	Connectrix DS-6610B 8 Port 16G SFP port on Demand Upgrade Kit (407-BCFO)	2
	16 x Dell Networking Cable, OM4 LC/LC Fiber Cable, (Optics Required), 5 meter (470-ACLK)	16
	03-years on-site Warranty	

LOT-1 A Mandatory Clauses

- I. Manufacturer Authorization Letter in the name of the bidder is mandatory.
- II. Manufacturer must have sales, pre-sales and post-sales presence with registered office in Pakistan.
- III. The manufacturer should provide evidence of at least five successful deployments of the quoted brand with equivalent or higher size solution and quoted components in Pakistan. Install base site visit may be required upon request by the purchaser.
- IV. Bidder should propose their latest products and solutions in response to this RFP.
- V. The bidder should provide confirmation letter from Manufacturer taking responsibility of solution designing, delivery, implementation as well as knowledge transfer through it's partner/vendor.
- VI. The bidder should provide evidence that manufacturer is involved in the manufacturing of UPS, Cooling, Racks and Data Center products for at least 10 years.
- VII. During technical evaluation, bidder can be called to conduct presentation of the complete offered solution on the request of the purchaser.
- VIII. Bidder must provide Life cycle of the quoted product and future road map.
- IX. Manufacturer must have deployed Data Centers in Pakistan in Health Sector, Public Sector, Telco Sector and Defense Sector.
- X. Bidder must have minimum one certified CDCP resource.
- XI. The Manufacturer must have Registered office along with support team in Pakistan for last 5 years.
- XII. After delivery of equipment at site, all installations to be completed in 5-6 weeks' time. (Mandatory)
- XIII. Migration of equipment from existing Server Room to newly built Datacenter is part of the project.

LOT-1 (a)	
Smart Modular Data Center Solution	
Item	Description
Features	<p>The Smart Modular (Micro) Data center shall consist of minimum 3 racks. The total load will be approximately 4kW~6kW per 42U IT Rack. The complete solution should be expandable in terms of Rack, UPS and cooling.</p> <p>The Smart Modular (Micro) Data Center shall include:</p> <ul style="list-style-type: none"> • Minimum 3 x 42U IT Racks with support for accommodating rack-mountable UPS and battery banks. All racks with Access Control, Vertical Cable Managers, blanking panels, rack overhead cable management and other rack accessories • Redundant 32A Rack Mount Metered Zero U PDUs per IT rack • Redundant Rack Mount UPS 20kVA online (pf Unity) • Redundant Cooling Unit 20-25kW inside containment. • Racks shall contain the air on both front and back side and with emergency cooling fans. • Rack temperature, humidity, leakage and smoke monitoring sensors • Data Center Monitoring Software • Fire Suppression System (Data Center Grade) • Layout Drawing of Data Center is required to be submitted along with proposal, dually verified by the Principal on its letterhead. • Layout Drawing of NOC is required to be submitted along with proposal. <p>Details of this equipment is as follows:</p>

- Separate, standalone UPS to be installed in Path A and Path B configuration.
- 20kVA UPS (with PF 1) is required at each path with 50mins @ 70% load or more backup.
- The UPS shall be Rack mount and UPS rack shall be in the same contained area thus sharing the cooling with IT racks.
- The UPS battery bank shall be rack mount, matching with UPS and provided by the UPS manufacturer. Open batteries are not acceptable.

The UPS shall be continuous duty, dual input feed with configurable single-phase or three-phase input and output power (1:1, 3:1 or 3:3), solid-state, static Uninterruptible Power System (UPS) hereafter referred to as the UPS

**Uninterruptable
Power Supply**

Output	
UPS Rating	20kVA
Output Voltage Note	400 or 415 V 3 Phase 220/230/240 V 1 Phase
Output Voltage Distortion	Less than 5 %
Output Frequency (sync to mains)	50/60 Hz +/- 3 Hz user adjustable +/- 0.1 Hz Sync to mains
Power Factor	1.0
Load Crest Factor	3:1
Topology	Double conversion online
Waveform type	Sine wave
Overload Operation	60 seconds at 125% and 30 seconds at 150%
Bypass	Built-in static bypass, Internal bypass (automatic and manual), Optional external bypass
Input	
Input frequency	40 - 70 Hz Auto-sensing
Input voltage range for main operations	160 - 280V
Input Total Harmonic Distortion	Less than 5 % for full load
Other Input Voltages	220, 240
Input Power Factor at Full Load	0.98
Batteries & Runtime	

Battery type	Lead-acid battery
Typical recharge time	2.5hour(s)
Expected Battery Life (years)	Minimum 3 to 5 years
Runtime	50 mins or more backup at 70% load
Efficiency	>93%
Communication	
Interface Port(s)	DB-9 RS-232, RJ-45 10/100 Base-T, NMC Slot
Control panel	Multifunction LCD status and control console
Audible Alarm	Audible and visible alarms : configurable delays
Emergency Power Off (EPO)	Yes
Surge Protection	
Filtering	Full time multi-pole noise filtering : 0.3% IEEE surge let-through : zero clamping response time : meets UL 1449 or Equivalent
Environmental	
Operating Temperature	0 - 40 °C
Operating Relative Humidity	0 - 95 (Non-condensing) %
Protection Class	IP20
Conformance	
Certifications	EN/IEC 62040-1-1, EN/IEC 62040-2, ROHS

Cooling Units	<ul style="list-style-type: none"> • The Unit shall be able to support complete IT load (20-25 kW) with redundancy. • The system shall be completely factory-tested prior to shipment. Testing shall include, but not be limited to: complete pressure and leak testing to ensure system integrity, "Hi-Pot" test, and controls calibration and settings. • Each system shall ship with a completed test report to verify completion of factory testing procedure. • The fan speed is determined by the server delta-T input and the supply air temperature setpoint.
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- The controller shall use a proportional/integral/derivative (PID) environmental control method to achieve desired system response.
- The indoor unit shall come equipped with a 4 inch or above color touchscreen display to allow the user to navigate between menus, select items, and input information.
- The unit shall include a network management card with TLS 1.2 cybersecurity protection, embedded inside the user interface, to provide management through a computer network through MODBUS or BACnet TCP/IP.
- Each unit shall include at least eight (8) 200mm mixed flow direct drive DC axial fans.
- The fan assembly shall provide a total of 3,200 CFM (5,450 m3/h) of total unit airflow.
- Each fans shall be variable speed capable of automatically modulating from 20-100% and shall soft start to minimize in-rush current.
- Each fan shall allow the unit to maintain operation in the event of a fan failure and be replaceable while the unit is in operation.
- The cooling coil shall use corrugated aluminum fin and copper tube coils.
- The coil header is equipped with a drip plate in the bottom to capture and direct the condensation accumulating on the suction header tube to the drain pan.
- Dual floats are included with the unit. One float is used for condensate pump control, the other to generate condensate pan overflow alarms.
- The unit shall be equipped with a fast-responding electronic expansion valve linked to the main unit controller capable of precise control of super-heat and sub-cooling. This improves energy efficiency and allows the compressor to operate through its full range.
- The indoor unit shall come standard with two (2) power feeds (A + B) with automatic switchover upon power failure. Each power feed shall provide 100% power to the unit.
- Standard filters shall be 20% efficient per ASHRAE 52.1, MERV 1 per ASHRAE 52.2, 1/2 in. washable mesh filter.
- The compressor shall be a VFD-controlled brushless scroll compressor.
- The compressor and VFD shall be in the outdoor unit, away from the critical IT space. This shall improve serviceability, reduce sound, refrigerant oil, and high-pressure components in the IT space.
- The VFD shall automatically modulate through a range between 20 and 100 Hz to accommodate varying load conditions. VFD firmware shall include proper oil return protection in cases where pipe velocities may drop to low speeds during low loading periods.

- The compressor shall be electrically protected through the VFD, a sight glass must be provided, and shall start to minimize in-rush current.
- The unit is equipped with one variable speed, electronically commutated, 710 mm vertical flow direct drive EC axial fan.
- Coil shall have 12 circuits complete with brass distributor and copper distribution tubes.
- The system shall use standard R-410a refrigerant.
- Units shall include a main disconnect switch located on the E-panel in order to disconnect power input
- The outdoor unit shall be placed up to 120m equiv distance from the indoor location, with up to 30m max positive elevation.
- The indoor unit, when equipped with two (2) PSU's and a humidity sensor, shall be capable of supplying up to 130% fan speed (4,100 cfm). This can be enabled/disabled via unit interface.
- The second power supply shall ensure the power circuit does not get overloaded during >100% operation while the humidity sensor shall monitor the dew point to prevent excess fan speed when condensate blow off is a risk.
- Humidifier shall be able to modulate capacity. The humidifier shall be self-contained, steam-generating type, factory piped and wired, with disposable cylinder and automatic solid-state control circuit. Humidifier canisters shall be replaceable.
- The humidifier controller shall communicate directly to the microprocessor controller and provide complete status and control at the operator interface. Humidifier shall control flush cycling and conductivity via automated controls.
- Humidifier shall be capable of producing between 3.3 lbs (1.5 kg) or up to 6.6 lbs (3 kg) of steam per hour.
- Reheat elements shall be low watt density, wired for three-phase, loaded equally on all three phases and shall be electrically and thermally protected by both automatic and manual reset cutouts. Reheat capacity shall be between 3kW-6 kW.
- Heater shall be provided with self-engaging electrical connectors upon installation. Heater with manually connected conductors are not acceptable.
- A leak detection sensing cable shall be shipped loose with the unit. If water or other conductive liquids contact the cable anywhere along its length, the main controller visually and audibly annunciates the leak. The detector shall be provided with a 20 ft (6.1 m) of cable. Cable may be cascaded up to 80 ft (24.4 m).

Air Containment	<ul style="list-style-type: none"> • The Containment System shall be a modular front and rear plenum for use in isolating the supply and return air between a rack enclosure and an InRow cooling unit. • The containment system is designed to create a separate environment for air distribution in order to prevent mixing of hot and cold air streams, resulting in a more predictable cooling pattern. • The containment shall have modular design and enables medium to high density racks to be cooled in an autonomous environment without overcooling the room. • Front and rear containment configurations shall not only capture the hot exhaust air, but also supply air from the In Row cooling unit, directing it to the IT equipment inlets in the adjacent rack(s). • Higher temperature differentials, between the entering air and the cooling coil shall increase the amount of heat transfer and therefore capacity of the cooling unit. • Removal of heat shall ensure that the supply temperature has little to no mixing and can be relatively constant and within the ASHRAE recommended guidelines for air delivery. • Elevated entering and discharge temperatures shall ensure that the leaving air temperature from the cooling coil will be above dew point. This shall save energy on make-up humidification. • Containing the front and/or rear of the rack shall muffle the noise created by server and cooling unit fans. • The containment area shall be 200mm or more on the front of rack and the same on rear of racks.
IT Racks	<ul style="list-style-type: none"> • The minimum rack count is 3 racks of approximately power load of 4kW~6kW each rack. Minimum available 'U' Space required for IT equipment should be 95U or above. • The enclosure shall be designed to provide a secure, managed environment for computer and networking equipment, with a minimum dimension of 700mm x 1050mm or above, each rack. • The enclosure shall conform to EIA 310 and accommodate industry standard 19 inch (483 mm) rack mount equipment. • Cabinets shall be designed to accommodate power and cable management accessories that keep network and power cables separate and organized. • The accessories shall include Vertical cable managers, blanking panels, rack overhead data and power cable pathways.

- Each rack shall be equipped with an emergency roof fan tray consisting of 4 fans.
- Front and Rear doors shall have RFID access control installed at them.

Rack Height 42U

Rack Width Minimum 700 mm

Rack Depth >1050mm (rack only),
>1400 mm (including containment)

Static Load Capacity $\geq 1,700$ KG

Dynamic Load Capacity $\geq 1,000$ KG

Protection Category IP20

Material and Coating Steel framework Powder coating for rack surface

Standard Compliance (19") rack mount equipment EIA-310-D
Compliance: RoHS, EIA-310E, UL 2416, UL 60950-1

Color Black

- The vertical mounting rails shall be easily adjustable to allow different mounting depths
- Each vertical mounting rail shall be marked on both sides with lines showing the top and bottom of each U and the number U space next to the middle hole. Each U consists of three square holes and is 1.75 inches high
- The unit shall include M6 caged nuts, bolts and cup washers, and caged nut tool for the mounting of equipment inside the unit
- Both the front and rear doors shall be designed with lift-off hinges allowing for quick and easy detachment without the use of tools.
- The front and rear doors shall open a minimum of 120 degrees to allow easy access to the interior
- The front door of the unit shall be reversible so that it can be mounted on either side
- Split rear doors are provided for increased service clearance

- The front door of the unit shall be capable of being installed on the rear of the unit and the rear doors shall be capable of being installed on the front of the unit.
- The unit shall include half-height side panels that are removed without tools using easy finger latches for fast access to cabling and equipment.
- The side panels on the unit shall double as privacy panels when the units are bayed together
- Side panels shall be flush with the frame so the overall width of the unit does not change with the side panels installed.
- Baying brackets must provide two sets of mounting holes for standard cabinet spacing of 600mm (or as per the specification of rack).
- All cabinet components such as doors, side panels, roofs, etc. shall be bonded directly to the frame.
- Grounding points shall be provided on the cabinet's frame to externally bond each unit to the building ground.
- The manufacturer shall offer 10 toolless blanking panel kit to prevent the recirculation of hot exhaust air from empty spaces
- The unit shall include a front door lock, rear door lock and four (4) side panel locks.
- The unit shall have four (4) adjustable leveling feet to help provide a stable base in the event of an uneven floor surface and to prevent rolling.
- The unit shall ship with provisions for stabilization in the field using the pallet mounting brackets
- The Front & Rear door RFID access control shall:
 - Grant equipment access for specific times for each proximity card configured.
 - Grant authorized people access to equipment through proximity card authentication.
 - Pinpoint the timing and sequence of events leading up to an incident with the event log.
 - Provide a simple telnet session or SSH for remote battery management access.
 - Override electronic access with a hard key for power outages and maintenance.
 - View the user interface with a browser. Gives quick access from anywhere on the network without the need to install software.
 - User-selectable password with strong password rules and reset password mechanism

	<ul style="list-style-type: none"> - Share access without risking unauthorized configuration changes.
Rack Mount PDUs	<p>For purposes of distributing power within an IT enclosure, rack mount power distribution units shall be available for installation within the IT enclosure. The rack mount power distribution units shall be capable of being installed in the back of the accompanying enclosure to consume zero U- space in the rear of the rack, and shall not require tools for installation within the rack.</p> <ul style="list-style-type: none"> - Type: Metered - Rating: 32A - Input Voltage: 200 - 240 VAC 1 Phase - Input Frequency: 50Hz - Input Connection: IEC309 32A - Output Connections (20)C13 & (4)C19 - Circuit Breaker 2 x 16A 1-pole hydraulic magnetic circuit breakers - Power Cord 3 meters - Compliance CE EN55035, EN55032, EN55024, CE, TUV, EN/IEC62368-1, RoHS & Reach <p>Required Features:</p> <ul style="list-style-type: none"> • Ultralow-profile in depth • Hydraulic-magnetic circuit breakers • Environmental monitoring port for external temperature/humidity monitoring • Full-featured network management capability via web, SNMP • User-interactive LCD display for local access • Field-replaceable network management module • Active current measurements (amps) • Active power measurements (including volts, amps, real power (kW) and energy (kWh)) • User-customizable alarms and warnings • Embedded log memory to record/review/report • Use access control with two levels
Environment Monitoring System	<ul style="list-style-type: none"> • The environmental monitoring solution shall protect computing equipment from physical threats such as high temperature, humidity, smoke, both malicious and unintentional access events.

	<ul style="list-style-type: none"> • The EMS system shall include Zigbee wired/wireless network coordinator and wireless temperature sensors that are able to connect wirelessly to the central appliance • The wireless sensors shall help reduce cable clutter and expense of cabling • There shall be an auto-join mode, in which the wireless sensors will be automatically commissioned. • The wired/wireless sensor shall be with magnetic mounting, so it can be moved periodically to evaluate hot spots or new areas in dynamic IT environments. • The EMS system shall Integrate with racks and Data Center monitoring software for easy deployment, configuration, and management. • The system shall prevent equipment failure from a full range of threatening environmental conditions. • The system shall provide Real-time event notification that minimizes response times to critical physical infrastructure situations. Enables IT Administrators to reduce mean time to repair, improve efficiency, and maximize uptime. • Can be mounted in a rack alongside other IT gear, or zero –U mounted in the back • Shall be able to customize threshold definitions (multiple thresholds per sensor, scheduling, severity levels) to requirements. • Shall be able to View the user interface with a browser. Provides quick access from anywhere on a secure network. • User-selectable password with strong password rules and reset password mechanism. • The central device shall include a switched outlet, sensor ports, Voltage and relay output, SNMP port and RS485 for monitoring • The unit shall have console port and USB port for configuration
Data Center Monitoring Software	<p>The web application shall provide a Dashboard, with a default Overview page, to display alarm status, critical alarm history, and sensor graphs; an Alarms page to provide notification options; an Assessments page to provide insights into device health scores and device security vulnerabilities, with recommendations on how to optimize the IT physical infrastructures; a Management page to provide device configuration and firmware update options; and an Administration page to allow the Administrator user to manage the organization.</p> <p>1. MONITORING</p> <ul style="list-style-type: none"> • Shall provide the user with a centralized view of networked devices. • The default Overview dashboard shall allow the user to view the status of all connected IT sites on a map to identify the sites with critical alarms and zoom to

one site to see which alarms are occurring. The alarm history shall allow the user to view the number of all critical and warning alarms.

- The user shall be allowed to create custom dashboards by selecting widgets to show maps, alarms, sensors, and graphs.
- The user shall be allowed to edit, rename, or delete any custom dashboard.
- The device hierarchy shall allow the user to define groups based on the device location using six location types in a logical hierarchy: Group, Site, Building, Room, Row, and Rack.
- The device hierarchy shall allow the user to edit, rename, or delete the device location.

2. ALARMS

- The Alarms page shall allow the user to access active and cleared alarms and display warning or critical status.
- The user shall be allowed to mute a specific alarm or all alarms for a device for an hour or up to a week and to select the reason for muting the alarms.
- The IT Expert Administrator user shall be allowed to set up an email address to send critical or warning alarms or both to an individual, a partner, or a ticketing system.
- The Administrator user shall be allowed to choose which alarms to send, and the email format, either with graphics (Original) or as plain text (Simple).

3. REPORTS

- The Inventory page shall allow the user to export CSV reports with device information including device service contract coverage, device model, device IP address, and device location name.
- The Assessments page shall allow the user to export UPS Score CSV reports with device information including UPS model, UPS production year, UPS battery production year, and UPS load.
- The Assessments page shall allow the user to export Active Lifespan Alarms CSV reports with device information including alarm messages, alarms type, and device model.
- The Assessments page shall allow the user to export Alarm CSV reports from the Assessment tab with device information including alarm messages, alarm severity, and device model.
- The Assessments page shall allow the user to export Device Security Vulnerability CSV reports from the Assessment tab with device information including device model, device application version, and device vulnerability.

4. ASSESSMENTS

- The Assessments page shall provide a UPS score from 1-100 to identify whether a UPS health status is at a low, medium, or high risk for failure based on age, battery temperature, UPS age, and critical alarms generated by the UPS. The assessment shall provide a history of significant changes to help users make educated choices.
- The assessment shall provide data-driven recommendations to help users take action to improve the UPS score.
- The Assessments page shall provide a trend analyze on the daily average load of UPS to help predict future load and understand UPS capacity usage.
- The Assessments page shall provide active and recently solved alarms indicating devices susceptible to failure or near end of life.
- The Assessments page shall provide current detected device security vulnerabilities for the discovered devices.
- The Device Security Vulnerability Assessment shall report devices with vulnerable configurations, devices with out of date firmware, and devices with old hardware unable to address security issues.
- The user shall be provided with recommendations on how to address the identified devices security vulnerabilities.
- The user shall be allowed to access a report of all devices that do not meet security standards.

5. BENCHMARK

- The Inventory page shall allow the user to benchmark devices against similar devices monitored. Benchmarking is enabled by machine data that are anonymized, stored, and analyzed in the EcoStruxure Data Lake.
- Benchmarking shall allow the user to compare device battery temperature, device battery age, device age, and UPS total load with all comparable devices, devices of the same organization country code, devices of the same device production year, or devices of the same model family.

6. DEVICE CONFIGURATION

- The Management page shall allow the user to select a SNMP device to use as the source to remotely deploy settings on a large number of identical SNMP devices.

7. FIRMWARE UPDATE

- The Management page shall allow the user to apply firmware updates to devices. The user shall be allowed to view available firmware updates, with a brief outline of the features and fixes available in the update; view all devices that need a

	<p>firmware update; select all or individual devices to update; and view previously run firmware updates.</p> <p>8. MOBILE APP</p> <ul style="list-style-type: none"> • Shall provide the user with a mobile app option. The mobile app shall be available on Android and iOS. • The app shall allow the user to receive push notifications for critical alarms. The app shall allow the user to view sensor values and alarms from the connected devices. • The app shall allow user to view a Device Groups option with a hierarchical list of device groups and locations, device status, and device and sensor data; and an Active Alarms option to view a chronological list of alarms and alarm details. • The app shall allow the user to view and select devices monitored by software in the All Devices group, or in a specific location, and access options to view device details, active alarms reported by the device, and a list of device sensors.
Electrical Panel & Power Distribution Boxes	<ul style="list-style-type: none"> • Electrical panel should be installed at suitable place to feed power for UPS, Cooling, lightning. The panel should be indoor type with an IP rating of 42, fabricated out of 16 SWG sheet and powered coating. The circuit breaker will be triple pole/single pole of reputed brand i.e Schneider/ABB/Vertiv. • All meters should be digital display type. Ammeters & voltmeter selector switch should be complete with front plate. Indication lamp should be suitable for flush mounting complete with base, 230V incandescent lamps will have resettles of suitable color. • Dedicated ground / earthing should be available for Datacenter • Power Cable for Datacenter should be from Power Station to Datacenter
Fire Suppression System (Rack Based)	<p>The work under this scope consists of supplying, installation and commissioning of all material and services of the complete Intelligent Addressable Fire Alarm system as specified herein and / or shown on the Tender Drawings. The Contractor shall discuss the electrical layout with the Engineer and coordinate at site with other services for exact route, location and positions of the system. The Fire Alarm system with accessories shall also comply with the General Specifications for Electrical Works, and with other relevant provisions of the Tender document.</p> <p><u>STANDARDS</u></p> <p>The latest editions of the following standards / codes shall be applicable for the materials covered within the scope of this specification: NFPA 72/75</p>

Any other standard referred to in above standards or these specifications.

OPERATION

In case of any Fire, the manual station shall be operated by pulling down the handle or breaking glass. The actuation of this station shall cause an audio as well as visual alarm at the fire alarm control and indication unit, duly indicating the location of the respective station/zone. An authorized person shall immediately visit the affected area and if after investigating, it is deemed necessary, alarm in the whole building shall be initiated from either the alarm switch located beside the fire alarm control panel by inserting a special key or the actuation of any indication at the Fire Alarm Control Panel. The general alarm shall be initiated by an authorized person after inspecting the affected location. Circuit shall be so arranged that an open circuit in an initiating or indicating loop shall cause the individual zone and common trouble indication at the fire alarm control panel.

ASPIRATING SMOKE DETECTOR:

The Aspiration based detector system should be an addressable device consisting of Smoke aspiration pipe, Air sampling openings, Detection unit incl. airflow sensors, Aspiration unit etc. The system should be designed with pipe system with defined air sampling openings to draw in air samples from the monitoring range and route them to the detection unit. The system should be UL / EN 54 approved. Depending on the programmed response sensitivity of the detection unit and the alarm threshold, the Aspirating Smoke Detector should trigger the alarm when the appropriate light obscuration level is reached. The system should provide for minimum two level alarm levels The system should be capable of adjusting various time-delay settings for displaying and forwarding alarms and malfunctions. Alarm and malfunction messages should be displayed simultaneously. The Aspiration system should have the following minimum features:

- Avoiding false alarms
- Airflow monitoring Response sensitivity Diagnostic features Air.
- Stream monitoring

FIRE SUPPRESSION SYSTEM

GENERAL REQUIREMENT

SCOPE OF WORKS

This section forms an integral part of each section of Fire Suppression system.

A. The work covered by this section consists of providing all material and equipment and performing all the work necessary for the complete execution and completion, including testing and commissioning of all systems of Fire Suppression works as specified and as shown on the Drawings or as directed by the Engineer.

B. All the above mentioned systems complete in all respects including connection of the internal systems with the external systems are included in the scope of work.

C. All the materials and equipment shall be of the specifications mentioned herein and shall be limited to products regularly produced and recommended by the manufacturers for the service intended. Contractor shall submit samples, necessary catalogue, sketches, the name of manufacturer and guarantee, if necessary, before installation for approval by the Engineer. All material and equipment shall be new and unused.

D. All other equipment and material shall be installed in strict accordance with manufacturer's instructions. These instructions shall be considered as part of specifications.

E. It is specifically intended and shall be agreed to by the Contractor that any material or labor which is usually furnished as a part of such equipment and which is necessary for its proper completion and best operation shall be furnished as a part of this contract without any additional cost whether or not shown in detail on the drawings or described in detail in the specifications.

F. The Contractor shall be responsible for his work until its completion and final acceptance and shall replace any of the same which may be damaged, lost or stolen without any additional cost to the Engineer.

G. All openings left in floor for passage of ducts, pipes and cables etc. shall be covered and protected.

H. All open ends of pipes shall be properly plugged off to prevent any foreign material from entering the pipe during installation.

I. The Contractor shall include in his bid for the cost of all cutting, making of holes and subsequently making good to the desired finish as approved by the Engineer. No separate payment shall be made for this item. Also the Contractor shall allow in his bid for the cost of providing protective painting or coating as specified in the relevant sections and no claim shall be entertained for this item.

	<p>J. The arrangement, positions and connections of pipe fittings and appurtenances shall be as shown on the drawings but the Engineer reserves the rights to change the locations. Special precautions shall be taken for the installation of concealed pipes as shown on the drawings and/or as required. Should it be necessary to correct piping so installed, the Contractor shall be held liable for any injury caused to other work in the correction of piping For any expedient change, the Contractor will correctly show it in shop drawings. A minimum distance between different services shall be maintained as shown in the contract documents or as approved by the Engineer.</p> <p>K. The systems shall be in accordance with the requirements of the Civil Defense Department and National Fire Protection Association (NFPA).</p> <p>L. These specifications are supplementary to the requirements above. All required approvals of shop drawings and materials shall be obtained by the Contractor from the appropriate authorities before proceeding with work on site.</p> <p>M. All connections to/from city points of utilities supply/discharge shall be the mechanical contractor's responsibility.</p>
Civil & Miscellaneous Works	<ul style="list-style-type: none"> • Removal of debris from site and dumped outside as per the client requirement. • ICI or equivalent fire retardant paint work on the walls and partitions free from contamination and asbestos (complete in all respects.) • Supply and fixing of 12mm tempered glass partition of Data Center area (21ftx16ft) Width x Depth with Door, mortise lock set. Datacenter depth may be increase/decreased as per the design/layout of the proposed datacenter. • Antistatic Vinyl flooring with complete installation for DC (if required). • Supply and fixing of Fire Resistant DAMPA/Gypsum 2' x 2' False Ceiling • Supply & install new lighting point's c/w light switches and using 2 x 1C/1.5mm sq PVC cable in PVC pipe for DC • Supply, installation and fixing of data center special lights LED (min 500 LUX) antiglare size 2' x 2'. • Supply & installation of Emergency Light c/w battery pack and accessories. • Installation of In Row Cooling Indoor/Outdoor Units covered with Liquid and Hot gas hard copper piping in powder coated trays c/w, nitrogen, refrigerant charging, water tank etc. all accessories and fittings. • Construction of foundation pillar for condenser unit as per manufacturer recommendation. • Supply & Installation of grounding system for Data center as per industry standards for data centers.

	<ul style="list-style-type: none"> • Earth pit as per industry standards to be made and connected with data center, by the bidder. • Relocating and installing existing IT & Network Equipment from current server room to the new data center racks. It includes dismounting from current server room and complete mounting in new data center racks with required accessories, where applicable. • Provisioning of MMR (Meet Me Room).
Installation & Commissioning	<ul style="list-style-type: none"> • The vendor is responsible for complete Installation & Commissioning of the Smart Rack Solution, including civil work and power cabling from main circuit board till server room.
Warranty	<ul style="list-style-type: none"> • 3 years 24x7 comprehensive warranty at site

LOT-1 (B) Mandatory Clauses

1. OEM Authorization Letter in the name of the purchaser is mandatory for the bidder to participate in the tender, for authorization by OEM.
2. Since it is a turnkey basis LOT, the bidder should quote all the products required in this LOT.
3. Proposed solution is based on as per actual, however bidders should conduct survey and also propose complete solution. The bidder must have to submit design document of proposed solution.
4. The brand quoted should have an operational spares depot in Pakistan.
5. The vendor should have minimum 03 Technical Certified resources in Peshawar/Islamabad.
6. The bidder should have a registered & support office in Peshawar/Islamabad.
7. Fluke testing will be required for bandwidth measuring as per standard
8. OTDR testing will be required for measuring laid cable length
9. Bidder should propose their latest products and solutions in response to this RFP.
10. Samples will be required for the fiber optic items before the finalization of the contract.

LOT-1 (b)**Branded Multimode 10G OM3 Fiber Optic Cabling**

Item	Description
Features	<p>Backbone cabling from the system equipment (Data Centre) to the Network switch cabinets shall be connected with minimum 10G optical fiber cable in Star/Ring Topology with failover optical fiber link to connecting cabinet.</p> <p>Fiber-optic cabling shall comply with ANSI X3. 166-1990 and shall be multi-strand OM3 50/125 micron for core/cladding diameter multimode graded index fibers, tightly jacketed. The sheath shall be colored Blue or some other bright color to help distinguish fiber media from other wiring. The cable construction should be metal free to avoid requirement of grounding, lightening protection etc.</p> <p>All fiber optic cables used in the backbone system shall conform to the following transmission characteristics:</p> <ul style="list-style-type: none">• No. of Fibers: 24• Core Diameter: 50.0±3.0µm• Numerical Aperture: 0.200±0.0015• Cladding Diameter: 125.0±2.0µm• Core-Clad Concentricity: ≤3.0µm• Cladding Non-Circularity: <2.0%• Core Non-Circularity: ≤5%• Coating Diameter: 245±5µm• Coating-Cladding Concentricity: <12µm• Operating Wavelengths: 850 and 1300 nm• Bare Fiber Attenuation: 2.5 dB/km per 850 nm 0.8 dB/km per 1300 nm

	<ul style="list-style-type: none"> Cables Fiber Attenuation: 3.5 dB/km per 850 nm 1.5 dB/km per 1300 nm <p>Minimum bending radii criteria should be followed for the installation of the Optical fiber cable.</p> <p>Mechanical Specifications</p> <p>Crush Resistance 2000 N/10 cm</p> <p>Min. Bend Radius Installation 150 mm</p> <p>Min. Bend Radius Operation 110 mm</p> <p>Nominal Outer Diameter 7.5 mm</p> <p>Cable Design</p> <p>Fiber Count 24</p> <p>Number of Ripcords 2</p> <p>Outer Jacket Color Black</p> <p>Outer Jacket Material Flame-retardant, non-corrosive/low-smoke, zero-halogen (FRNC/LSZH) material</p> <p>Outer Jacket Nominal Thickness 1.5 mm</p> <p>Tensile Strength Elements and/or Armoring - Layer 1 Corrugated steel tape armor with dielectric strength elements (aramid yarns) and swellable elements</p> <p>Buffer Tube Diameter 3 mm</p> <p>Fiber Coloring Blue, Orange, Green, Brown, Slate, White, Red, Black, Yellow, Violet, Rose, Aqua</p> <p>Environmental Conditions</p> <p>Temperature Range, Installation -5°C - 50°C (23 °F - 122°F)</p> <p>Storage Temperature -25°C- 70°C (-13 °F - 158°F)</p>
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General Specifications	
Environment	Indoor/Outdoor
Cable Type	Loose Tube
Product Type	Corrugated Steel Armor
Central Tube Indoor/Outdoor	Steel Armor
Fiber Category	50 µm MM (OM3)
Flame Rating	LSZH™/FRNC
Application	Direct Buried , Duct , Vertical Riser , General Purpose Horizontal
Optical Characteristics	
Fiber Code	T
Fiber Name	G50/125 ULTRA-BEND 7.5
Fiber Type	Multimode
Fiber Core Diameter	50 µm
Minimum Effective Modal Bandwidth (EMB)	2000 MHz*km / -
Maximum Attenuation	2.8 dB/km / 1.0 dB/km
Min. Overfilled Launch (OFL) Bandwidth MHz*km	1500 MHz*km / 500
Serial 1 Gigabit Ethernet MHz*km	1100 MHz*km / 600
Serial 10 Gigabit Ethernet MHz*km	300 MHz*km/ 333
Typical Attenuation	2.4 / 0.8
Wavelengths	850 nm / 1300 nm
Fiber Category	OM3

ODF'S	<p>High density 19 Inch Rack universal polarized system and highest density per U available as required Core Sliding Type Patch Panel / ODF with LC Duplex adaptors having Pigtail splicing, field connectorisation, preterminated cables, Plug & Play™ or trunks can be installed in the same housing.</p> <p>Patch cords should be LC Duplex with reversing polarity option</p> <p><u>Specifications</u></p> <p><u>Design - Adapter</u></p> <table> <tr> <td>Adapter housing color</td><td>Turquoise</td></tr> <tr> <td>Shuttered adapter</td><td>Yes</td></tr> <tr> <td>Adapter type</td><td>LC duplex shuttered</td></tr> </table> <p><u>Design</u></p> <table> <tr> <td>Fiber count</td><td>12/24/48/72</td></tr> <tr> <td>Splice tray type</td><td>Universal cassette with organizers for heat-shrink and crimp splice protectors</td></tr> <tr> <td>Housing material</td><td>Aluminum</td></tr> <tr> <td>Additional cable number reachable with</td><td>4</td></tr> <tr> <td>Accessories</td><td></td></tr> <tr> <td>Maximum cable number in basic unit with accessories</td><td>4</td></tr> <tr> <td>Cable entry type</td><td>Pre-punched circular</td></tr> <tr> <td>Number of pigtails</td><td>12/24/48/72</td></tr> <tr> <td>Number of splice trays</td><td>4</td></tr> </table>	Adapter housing color	Turquoise	Shuttered adapter	Yes	Adapter type	LC duplex shuttered	Fiber count	12/24/48/72	Splice tray type	Universal cassette with organizers for heat-shrink and crimp splice protectors	Housing material	Aluminum	Additional cable number reachable with	4	Accessories		Maximum cable number in basic unit with accessories	4	Cable entry type	Pre-punched circular	Number of pigtails	12/24/48/72	Number of splice trays	4
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Cable entry type	Pre-punched circular																								
Number of pigtails	12/24/48/72																								
Number of splice trays	4																								

	Pigtail length 2 m Splice protectors type Without organizer and protectors Number of adapters 6/12/24/36 Total Splice Capacity 12/24/48/72 universal splices General Specifications Fibre category 50 µm MM (OM3/OM4) Access type Front, top, rear Lockable Yes Mounting Type Rack 19"
<u>Rack Cabinets</u>	General Specifications. <ul style="list-style-type: none"> • Branded 15U ~600x600 cabinet • Heavy duty • Front glass door with lock • 4 side openable with lock • Powder coated • Top Fan Tray with Guard & Filter (Low Noise)
<u>UPVC Pipes with All Accessories</u>	<ul style="list-style-type: none"> • 1-Inch 3 Meter Length UPVC Pipe with Accessories • 2-Inch 3 Meter Length UPVC Pipe with Accessories • 3-Inch 3 Meter Length UPVC Pipe with Accessories
<u>Dura Ducts</u>	<ul style="list-style-type: none"> • 16x38 3 Meter Length uPVC Dura Duct or Equivalent

	<ul style="list-style-type: none"> • 60x60 3 Meter Length uPVC Dura Duct or Equivalent • 40x40 3 Meter Length uPVC Dura Duct or Equivalent
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Scope of Work	<p>Turn Key Solution required for laying & connecting existing network switch cabinets via OM3 10G Fiber Optics Multimode cable with new datacenter. The connectivity of each point will be redundantly connected via fiber optic ring.</p> <p>Layout diagram for the fiber optic connectivity to be submitted along with bid.</p> <p>Installation and commissioning of ODF & splicing of fiber optic cable as per the agreed plan.</p> <p>Laying of Fiber optic cables as per standard or as advised by the site engineer using upvc pipes & ducts with clamps as required.</p> <p>Installation of the cabinets on required location and shifting of network cable.</p> <p>OTDR & Fluke Testing.</p> <p>Removal of old fiber optic cable from ceiling & cabinets after the network switched to newly laid fiberoptic network.</p> <p>As this is a turn key solution bidder has to provide all the necessary items for completion of the project.</p>	
	Item Description	QTY
	Branded Fiber Optic Cable 24 Core 10G Multimode OM3	As per actual
	Branded OFDF 24 Ports OM3, LC Adapter with 16 Pigtails & Accessories	21
	Branded OFDF 48 Ports OM3, LC Adapter with 48 Pigtails fully loaded with Accessories	6
	Branded Front Cable Organizers with accessories	30
	Patch Cords - Branded Fiber Optic LC to LC OM3 3Meter Multimode (Minimum Quantity 64)	As per actual
	Patch Cords - Branded Fiber Optic LC to LC OM3 5Meter Patch Cords (Minimum Quantity 64)	As per actual
	Pigtail - Branded Fiber Optic pigtails OM3 2Meter Multimode, compatible with provided ODF (Additional)	16
	Cabinets - Branded 15U Wall Mount cabinet with 3 or 4 side access powder coated, to cater current network accessories	3
	Fiber Optic Laying Charges with UPVC Pipes & Dura Ducts included (per running meter)	As per actual
	Fiber Optic Splicing (per unit splice)	As per actual

LOT-2

- The bidder should be at least Tier-2/OEM Authorized partner of the quoted brand.
- The bidder must submit Manufacturer Authorization Letter in the name of purchaser.
- Bidder must have registered offices in Peshawar/Islamabad for after-sales support.
- The bidder must be registered for at least 5 years for the quoted brand in Pakistan.

Sr. No.	Workstation (High Level)		
	Item	Description	Qty
1	Processor	Dual Intel Xeon Bronze 3206R 1.9GHz, (8C, 9.6GT/s 2UPI, 11MB Cache, (85W)	2 Nos.
	Chipset	Intel® C621/C622 Chipset or higher	
	Memory	64GB (4x16GB) DDR4 2133 RDIMM ECC Memory (with 24 slots (12 slots per CPU) expansion slots)	
	SSD Drive	512GB M.2 PCIe NVMe SSD	
	Hard Disk Drive	1TB 7.2KRPM SATA 3.5in HDD	
	External ports	Front: 2 x USB 3.1 Gen 1 Type A, 2 x USB 3.1 Type C, 1 x Universal Audio Jack Rear: 6 x USB 3.1 Gen 1 Type A, 1 x Serial, 2 x RJ45 Network, 2 x PS2, 1 x Audio Line out, 1 x Audio Line in/Microphone	
	Network Card	2-port 1G NIC	
	Power Supply	1400W 90% Efficient or higher	
	Audio	Integrated Realtek HD Audio	
	Cooling	Standard Air cooling	
	Operating System	FreeDOS	
	Keyboard & Mouse	OEM USB Business Slim Wired Keyboard & Optical Mouse	
	Graphics	NVIDIA Quadro P620 2GB (support 4 mini Displays to DP Adapters) Graphic Card	
	Optical Disk Drive	8x DVD-/RW Slimline	
	Display	27 inch 4K IPS Bezel-less/Narrow Bezel Display with Display Port, HDMI Port, USB C & USB 3.0 Ports, accessories	
	Cables	OEM miniDP-to-DP Adapter (2-pack)	
	Warranty	03 year OEM Onsite Warranty	
	Additional Display with Dual Monitor Stand	27 inch 4K IPS Bezel-less/Narrow Bezel Display with Display Port, HDMI Port, USB C & USB 3.0 Ports, accessories and Mounting Stand supporting Dual Displays	

Sr. No.	Workstation (Mid Level)		
	Item	Description	Qty
2	Processor	Dual Intel Xeon Bronze 3204 1.9GHz, (6C, 9.6GT/s 2UPI, 8.25MB Cache, HT (85W)	4 Nos.

Chipset	Intel® C621/C622 Chipset or higher
Memory	32GB (2x16GB) DDR4 2133 RDIMM ECC Memory (with 24 slots (12 slots per CPU) expansion slots)
SSD Drive	250GB M.2 Drive PCIe NVMe SSD or above
Hard Disk Drive	1TB 7.2KRPM SATA 3.5in HDD
External ports	Front: 2 x USB 3.1 Gen 1 Type A, 2 x USB 3.1 Type C, 1 x Universal Audio Jack Rear: 6 x USB 3.1 Gen 1 Type A, 1 x Serial, 2 x RJ45 Network, 2 x PS2, 1 x Audio Line out, 1 x Audio Line in/Microphone
Network Card	2-port 1G NIC
Power Supply	1400W 90% Efficient or higher
Audio	Integrated Realtek HD Audio
Cooling	Standard Air cooling
Operating System	FreeDOS
Keyboard & Mouse	OEM USB Wired Keyboard & Optical Scroll Mouse
Graphics	NVIDIA Quadro P400 2GB (support 3 Displays Ports) Graphic Card
Optical Disk Drive	8x DVD-/RW Slimline
Display	27 inch 4K IPS Bezel-less/Narrow Bezel Display with Display Port, HDMI Port, USB C & USB 3.0 Ports and accessories
Cables	OEM miniDP-to-DP Adapter
Warranty	03 year OEM Onsite Warranty

Sr. No.	Workstation (Entry Level)		
	Item	Description	Qty
3	Processor	Intel® Xeon® W-1270 (8 Core, 16M cache, base 3.4GHz, up to 5.0GHz) DDR4-2933	4 Nos.
	Chipset	Intel® C246 Chipset or higher	
	Memory	16GB (1x16GB) DDR4 2933 RDIMM ECC Memory	
	SSD Drive	250GB SSD or above	
	Hard Disk Drive	1TB 7.2KRPM SATA 3.5in HDD	
	External ports	Front: 2 x USB 2.0 Type A; 1 x USB 3.1 Type A (5Gb); 1 x USB 3.1 Type C (10Gb), data only; 1 x Microphone; 1 x Headphone Rear: 2 x USB 2.0 Type A (with SmartPower); 4 x USB 3.1 Type A (5Gb); 2 x PS2; 2 x DisplayPort; 1 x Optional Port (VGA, HDMI 2.0, DP++ 1.2, Type C w/DP-Alt mode); 1 x RJ45 Network Connector; 1 x Serial; 1 x Audio Line out	
	Network Card	Single-port 1G NIC	
	Power Supply	850W 90% Efficient or higher	
	Audio	Integrated Realtek HD Audio	
	Cooling	Standard	
	Operating System	FreeDOS	

	Keyboard & Mouse	OEM USB Wired Keyboard & Optical Scroll Mouse	
	Graphics	NVIDIA Quadro P400 2GB (support 3 Displays Ports) Graphic Card	
	Optical Disk Drive	8x DVD-/RW Slimline	
	Display	27 inch 4K IPS Bezel-less/Narrow Bezel Display with Display Port, HDMI Port, USB C & USB 3.0 Ports and accessories	
	Cables	OEM miniDP-to-DP Adapter	
	Warranty	03 year OEM Onsite Warranty	

LOT-3

- The bidder should be at least Tier-2/OEM Authorized partner of the quoted brand.
- The bidder must submit Manufacturer Authorization Letter in the name of purchaser.
- Bidder must have registered offices in Peshawar/Islamabad for after-sales support.
- The bidder must be registered for at least 5 years for the quoted brand in Pakistan.

Sr. No.	Ultra Book (Core i7)		Qty
	Item	Description	
1	Processor	Intel® Core™ i7-1065G7 Processor (8MB Cache, up to 3.9 GHz)	2 Nos.
	Memory	16GB LPDDR4x Dual Channel SDRAM at 3733MHz (onboard)	
	Hard Disk	512 GB, M.2 PCIe NVMe SSD or higher	
	Display	13.3-inch 4K Ultra HD+ InfinityEdge touch display or higher	
	Graphics	Integrated Intel® Iris XE Graphics	
	Wireless Connectivity	Intel® Wi-Fi 6 + Bluetooth® 5.0 or higher	
	External ports	Minimum 2 x Thunderbolt-4 ports with Power Delivery, 1 x headset (headphone and microphone combo) port 1 x MicroSD card slot	
	Webcam	Widescreen HD (720p) webcam or higher	
	Audio features	Stereo Dual speakers; dual array microphone	
	Battery Type	Standard battery with 6-8 hours backup (with Express Charge Capable) or higher	
	Operating System	Free DOS	
	Keyboard / Pointing device	Keyboard with Backlit, Touchpad with multi touch support	
	Dock	USB-C Dock (RJ-45 Gigabit, USB, Display ports) Branded	
	Carry Case	Premium Carry Case / Sleeve	
	Warranty	01 year Onsite Warranty	

Sr. No.	Ultra Book (Core i5, Convertible)		Qty
	Item	Description	
2	Processor	Intel® Core™ i5-1135G7 processor with Intel® UHD Graphics (2.4 GHz base frequency, up to 4.2 GHz with Intel® Turbo Boost Technology, 8 MB cache, 4 cores)	2 Nos.
	Memory	8 GB LPDDR4-4267 SDRAM (onboard)	
	Hard Disk	512 GB, M.2 PCIe NVMe SSD or higher	
	Display	13.3-inch, UHD+ WLED Touch Display or higher	
	Graphics	Integrated Intel® Iris XE Graphics	
	Wireless Connectivity	Intel® Wi-Fi 6 + Bluetooth® 5.0 or higher	
	External ports	Minimum 2 x Thunderbolt-4 ports with Power Delivery, 1 x headset (headphone and microphone combo) port 1 x MicroSD card slot	
	Webcam	Widescreen HD (720p) webcam or higher	
	Audio features	Stereo Dual speakers; dual array microphone	
	Battery Type	Standard battery with 6-8 hours backup (with Express Charge Capable) or higher	
	Operating System	Free DOS	
	Keyboard / Pointing device	Full Size Keyboard with Backlit, Touchpad with multi touch support	
	Type	Convertible	
	Other Features	Backlit Keyboard, Fingerprint Sensor Touchpad with multi touch support	
	Carry Case	Carry Case / Sleeve	
	Warranty	01 year Onsite Warranty	

Sr. No.	Mobile Workstation (with 6GB Graphics)		Qty
	Item	Description	
1	Processor	Intel® Xeon® W-10855M vPro™ with Intel® UHD Graphics 630 (2.8 GHz base frequency, up to 5.1 GHz with Intel® Turbo Boost Technology, 12 MB cache, 6 cores)	2 Nos.
	Memory	16GB (2x8GB) DDR4 2933 or higher	
	Hard Disk	512GB M.2 PCIe NVMe SSD	
	Display	15.6 inch UHD anti-glare WLED-backlit, 500 nits or higher	
	Graphics	NVIDIA® Quadro® RTX 3000, 6GB, GDDR6 video memory	
	Wireless Connectivity	Intel Wi-Fi 6 + Bluetooth 5.0 or higher	

External ports	Minimum 2 USB 3.2 Gen 1 with PowerShare Minimum 2 USB 3.2 Gen 2 Type C Thunderbolt™ 3.0 1 Headphone Jack 1 HDMI 2.0 1 Mini DisplayPort 1.4 1 RJ-45
Webcam	HD webcam with IR
Audio features	Dual stereo speakers Audio with digital microphone
Battery Type	Battery for 4-6 hours backup time (6 cell 68 WHr) or higher
Keyboard / Pointing device	Full Size Keyboard with Backlit, Touchpad with multi touch support
Operating System	Free DOS
Other Features	Finger Print Sensor
Carry Case	Carry Case
Warranty	01 year Onsite Warranty

Sr. No.	Mobile Workstation (with 4GB Graphics)		Qty
	Item	Description	
2	Processor	Intel® Xeon® W-10855M vPro™ with Intel® UHD Graphics 630 (2.8 GHz base frequency, up to 5.1 GHz with Intel® Turbo Boost Technology, 12 MB cache, 6 cores)	2 Nos.
	Memory	16GB (2x8GB) DDR4 3200	
	Hard Disk	512GB M.2 PCIe NVMe SSD or higher	
	Display	15.6 inch UHD anti-glare WLED-backlit 500 nits (3840 x 2160)	
	Graphics	NVIDIA® Quadro® T2000 with 4 GB dedicated GDDR6 video memory	
	Wireless Connectivity	Intel Wi-Fi 6 + Bluetooth 5.1 or higher	
	External ports	Minimum 2 USB 3.2 Gen 1 with PowerShare Minimum 2 USB 3.2 Gen 2 Type C Thunderbolt™ 3.0 1 Headphone Jack 1 HDMI 2.0 1 Mini DisplayPort 1.4 1 RJ-45	
	Webcam	HD webcam with IR	
	Audio features	Dual stereo speakers Audio with digital microphone	
	Battery Type	Battery for 4-6 hours backup time (6 cell 68 WHr Long Life) or higher	
	Keyboard / Pointing device	Full Size Keyboard with Backlit, Touchpad with multi touch support	
	Operating System	Free DOS	
	Other Features	Finger Print Sensor	
	Carry Case	Carry Case	
	Warranty	01 year Onsite Warranty	

Sr. No.	Professional Series Notebook (with Core i5- 2G Graphics)		Qty
	Item	Description	
1	Processor	Intel® Core™ i5-10210U processor with Intel® UHD Graphics, Premium (1.6 GHz base frequency, up to 4.2 GHz with Intel® Turbo Boost Technology, 6 MB L3 cache, 4 cores)	5 Nos.
	Memory	8GB (1x8GB) DDR4 2667	
	Hard Disk	512GB M.2 PCIe NVMe SSD	
	Display	15.6-inch, FHD, 1920x1080, 60 Hz, Anti-Glare, Non-Touch, 220 Nits, IPS Display or higher	
	Graphics	NVIDIA® GeForce® MX230 (2 GB DDR5 dedicated) or higher	
	Wireless Connectivity	Intel Wi-Fi 6 + Bluetooth 5.1 or equivalent	
	External ports	1 Universal Audio Jack; 1 USB 2.0 Type-A port; 1 USB 3.2 Gen 1 Type-A port; 1 RJ-45 with status LED 1 HDMI 1.4 port; 1 USB 3.2 Gen 1 Type-A port with PowerShare; 1 USB 3.2 Gen 1 Type-C port with DisplayPort 1.2 Alt mode	
	Webcam	1280x720 Integrated HD Webcam or higher	
	Audio features	Stereo Speakers with Integrated microphone	
	Battery Type	Standard battery backup of 4-6 hours (3 Cell 40 WHr Express Charge Capable) or higher	
	Keyboard / Pointing device	Full Size Keyboard with Backlit, Touchpad with multi touch support	
	Operating System	Free DOS/Ubuntu Linux	
	Other Features	Touch Finger Print Sensor	
	Carry Case	Carry Case	
	Warranty	01 year Onsite Warranty	

Sr. No.	Professional Series Notebook (with Core i3)		Qty
	Item	Description	
2	Processor	Intel® Core™ i3-10110U processor with Intel® UHD Graphics, Premium (2.1 GHz base frequency, up to 4.1 GHz with Intel® Turbo Boost Technology, 4 MB L3 cache, 2 cores)	20 Nos.
	Memory	8GB (1x8GB) DDR4 2667	
	Hard Disk	256GB M.2 PCIe NVMe SSD	
	Display	15.6-inch, FHD, 1920x1080, 60 Hz, Anti-Glare, Non-Touch, 220 Nits, IPS Display or higher	
	Wireless Connectivity	Intel Wi-Fi 6 + Bluetooth 5.1 or equivalent	
	External ports	1 Universal Audio Jack; 1 USB 2.0 Type-A port; 1 USB 3.2 Gen 1 Type-A port; 1 RJ-45 with status LED, 1 HDMI 1.4 port; 1 USB 3.2 Gen 1 Type-A port with PowerShare; 1 USB 3.2 Gen 1 Type-C port with DisplayPort 1.2 Alt mode	
	Webcam	1280x720 Integrated HD Webcam or higher	
	Audio features	Stereo Speakers with Integrated microphone	

	Battery Type	Standard battery backup of 4-6 hours (3 Cell 40 WHr Express Chage Capable) or higher	
	Keyboard / Pointing device	Full Size Keyboard with Backlit, Touchpad with multi touch support	
	Operating System	Free DOS/Ubuntu Linux	
	Graphics	Intel® UHD Graphics	
	Other Features	Touch Finger Print Sensor	
	Carry Case / Security Lock	Carry Case	
	Warranty	01 year Onsite Warranty	

LOT-4

The bidder must be atleast Tier-2/OEM Authorized partner of the quoted brand.

OEM Authorization Letter in the name of the purchaser is mandatory for the bidder to participate in the tender, for authorization by OEM.

Perpetual License for Microsoft Products

The bidder should have a registered & support office in Peshawar.

On-site support from vendor is required.

Purchase Orders of the software bundled with hardware are acceptable.

Testing and calibration is not required for this LOT only.

Performance Security is not applicable on this LOT only.

Software Licenses		
Sr. No.	Item Description	Qty
1	Windows Server STD License (16-core) per server	5
2	Windows 10 Professional 64-bit	30
3	<p>VMware vSphere Essentials Plus Kit (with 03 year Support & Subscription) This kit includes 6 CPU licenses of vSphere Essentials Plus (for 3 servers with up to 2 processors each) and 1 license for vCenter Server Essentials.</p> <p>The vSphere Essentials Plus Kit consists of the following: vSphere Hypervisor (ESXi) vCenter Server Essentials vSphere Data Protection vSphere High Availability (HA) vSphere vMotion Cross Switch vMotion vSphere vShield Endpoint vSphere Replication</p>	1

LOT 5

1. The bidder must be at least Tier-2/OEM Authorized partner of the quoted brand.
2. OEM Authorization Letter in the name of the purchaser is mandatory for the bidder to participate in the tender, for authorization by OEM.
3. Since it is a turnkey basis solution for this LOT, the bidder should quote all the products required in this LOT and ensure connectivity between Servers & SAN.
4. Configuration & Testing of equipment is required for HBA, SAN Switch & RAM.

Items for HPE DL380 Gen10 Server		
Item	Part Number	Item Description
Hard Drives	P18436	HPE 1.92TB SATA MU SFF SC MV SSD
Memory	P00924	HPE 32GB 2Rx4 PC4-2933Y-R Smart Kit
HBA	P9D94A	HPE SN1100Q 16Gb Dual Port Fiber Channel Host Bus Adapter
10Gb LAN Card	817738	HPE Ethernet 10Gb 2-port BASE-T X550-AT2 Adapter
SFP+	J9150D	Aruba 10G SFP+ LC SR 300m MMF Transceiver

Fiber Channel SAN Switch (Qty: 02 units)		
Item	Part Number	Item Description
SAN Switch	210-ASSS	Connectrix DS-6610B 8P/24P switch w/rear to front airflow (Includes 8x16GbSFPs + rack kit) or equivalent compatible with available IT equipment (DELL EMC Unity 380X & HP Gen 10 Server)
Power Cords	450-AFFU	Jumper Cord 12A 4M c13 / C14
Ports-on-Demand (POD Kit, SFPs + Licenses	407-BCFO	Connectrix DS-6610B 8 Port 16G SFP port on Demand Upgrade Kit
MultiMode Fiber LC/LC Patch Cables	470-ACLK	16 x Dell Networking Cable, OM4 LC/LC Fiber Cable, (Optics Required), 5 meter
Warranty		03 year on-site support

8. BLACKLISTMENT OF DEFAULTED BIDDER/CONTRACTOR

Conditions for Blacklistment of Defaulted Bidder/Contractor under rule 44 of KPPRA Rules 2014

The following are the events, which would lead to initiate (Rule 44 of KPPRA Rules 2014) blacklisting/debarment process;

- a. Consistent failure to provide satisfactory performances.
- b. Found involved in corrupt/fraudulent practices.
- c. Abandoned the place of work permanently

Conditions for debarment of Defaulted Bidder/Contractor

- I. Failure or refusal to;
- II. Accept Purchases Order / Services order terms;
- III. Make supplies as per specifications agreed:
- IV. Fulfill contractual obligations as per contract
- V. Non execution of work as per terms & condition of contract.
- VI. Any unethical or unlawful professional or business behavior detrimental to good conduct and integrity of the public procurement process.
- VII. Persistent and intentional violation of important conditions of contract.
- VIII. Non-adherence to quality specifications despite being importunately pointed out.
- IX. Security consideration of the State i.e., any action that jeopardizes the security of the State or good repute of the Peshawar Institute of Cardiology Peshawar.

Procedure for black listment and debarment

1. Competent authority of Peshawar Institute of Cardiology may on information, or on its own motion, issue show cause notice to the bidder.
2. The show because notice shall contain the statement of allegation against the Bidder.

3. The bidder will be given maximum of seven days to submit the written reply of the show cause notice.
4. In case the bidder fails to submit written reply within the requisite time, the competent authority may proceed forth with ex-parte against the bidder.
5. Direct to issue notice of personal hearing to the bidder/ authorized representative of the bidder and the competent authority shall decide the matter on the basis of available record and personal hearing, if availed.
6. The competent authority shall decide the matter within thirty days from the initiation of proceedings.
7. The order of competent authority shall be communicated to the bidder by indicating reasons.
8. The order past as above shall be duly conveyed to the PKPRA and defaulting bidder within three days of passing order.
9. The duration of debarment may vary up to five years depending upon the nature of violation.

9. REDRESSING OF GRIEVANCES

- a. The purchaser shall constitute a committee comprising of disagreed & notified by the competent authority proper powers and authorizations to address the complaints of bidders that may occur prior to the entry into force of the procurement contract.
- b. Any bidder feeling aggrieved by any act of the purchaser after the submission of his bid may lodge a written complaint concerning his grievances not later than 03 days after the announcement of the bid evaluation report.
- c. The grievance redressed Officer shall investigate and decide upon the complaint within 06 days of the receipt of the complaint. The report along with decision shall be forwarded to the purchaser officer within the prescribed period.
- d. Mere fact of lodging of a complaint shall not warrant suspension of the procurement process.

- e. Note: Grievance notified & designated who can invite appropriate official as co-opted member for grievance.

10. AWARD OF CONTRACT:

Contracts shall be confirmed through a written agreement signed by the successful bidder and the PIC Peshawar.

11. PAYMENT:

- a. No advance payment will be permissible.
- b. The payment will be made after successful supply, installation/inspection and test run of all requisite items.