Khawaja Fareed University of Engineering & Information Technology, Rahim Yar Khan

Tender Document

Misc-195

Supply & Installation of I.T. Equipment Under Revenue Component PC-I Phase-II

For

Khawaja Fareed University of Engineering

& Information Technology

Rahim Yar Khan

Misc-195

Supply & Installation of I.T. Equipment Under Revenue Component PC-I Phase-II

TENDER PRICE Rs. 3,000/-

Last date of submission: <u>May 10, 2021</u>

FOR OFFICE USE ONLY

Serial No_____

Sold to: M/S _____

Date of Sale _____

Bank Challan No. _____

Date _____

1. Overview

Khawaja Fareed University of Engineering & Information Technology, RahimYar Khan intends to purchase the specified I.T. Equipment's as provided at **Annex 'A'**. The supplier will be responsible for delivery, installation and commissioning of all specified items, wherever required, at the Khawaja Fareed University of Engineering & Information Technology, Rahim Yar Khan. This document provides complete instructions for bidders intending to participate in this Tender

2. Instructions for Bidders

2.1. Response to the Tender (Bid) should be submitted in one part which shall include two separately sealed envelopes of **Technical Proposal** and **Financial Proposal** before **12:00 PM** on **10-05-2021.** Technical Proposals will be opened on same day at **12:30 PM** in the presence of representatives of responding bidders, if any, and Financial Proposals will be opened after completion of technical evaluation. The exact time and place for opening of financial proposals will be informed to technically qualified bidders.

2.2. Responding bidder shall deliver two sealed copies of the bid. Each copy being physically separate, bound, sealed and labeled. Proposals shall be delivered at the address given below.

Mr. Anwar Farooq

Director Procurement
Khawaja Fareed University of Engineering & Information Technology

(Abu Dhabi Palace Road) Rahim Yar Khan.

2.3. Any queries regarding this proposal should be directed to the email address listed below.

Email: dp@kfueit.edu.pk , anwar.farooq@kfueit.edu.pk

2.4. All bids must be submitted by filling the **Annex 'B'**. Same should be enclosed in the financial proposal. Bidder must use the same numbers and labels used in this Request for Proposal.

2.5. The original Tender document duly signed and officially sealed by the bidder must be submitted in whole with the proposals. Any conditional, ambiguous, incomplete, supplementary or revised offer after the opening of tender shall not be entertained

3. Technical Proposal Format

Bidders are required to include the following documents/information in their technical proposals in the order given below:

i. List of Previous/Current customers of related equipment, with contact person and telephone/fax numbers.

ii. Detailed product information

iii. Copy of National Tax Registration Certificate

iv. Copy of Sales Tax Registration Certificate

v. Bank letter of financial standing

vi. An affidavit on Rs. 100/- Stamp Paper that currently they are not black listed or debarred by any Government/Semi-Government Department to participate in bidding and to supply equipment. Failure to submit such affidavit may lead to disqualification.

vii. Valid Manufacturers authorization letter

viii. Detailed item specifications corresponding to the BOQ as given at Annex 'A'

ix. Detailed project implementation schedule which includes the delivery of items mentioned in the BOQ

x. Signed and stamped Tender document

4. Financial Proposal Format

Financial Proposal must include the following in the order given below:

    i.   Equipment prices duly entered on the form in the attached BOQ

   ii.   Validity period of the quoted price

  iii.   Any other Terms and Conditions

  iv.   Bank Draft of the Earnest Money

5. Terms & Conditions

5.1.   All prices should be quoted in Pak Rupees and inclusive of all Government Taxes & Levies.

5.2.   A bank draft equal to 2% of the Tender value should accompany the Tender as **Earnest Money** drawn in favor of **KFUEIT Rahim Yar Khan**. The Tender shall not be considered without Earnest Money. Bank guarantee will not be accepted. Bank draft for Earnest Money should be placed with the financial proposal.

5.3.   The Selected Bidder will sign a contract with the University and **5%** of contract amount will be deducted as **Performance Guarantee** (The amount already submitted as Earnest Money will be treated as part of Performance Guarantee). The Performance Guarantee will be released after successful completion of Defect /Liability/Warranty period, after removing the defects in the equipment/replacement found during the warranty

5.4.   Earnest Money for bidders not selected will be returned a minimum of two weeks after announcement of award. If the selected bidder fails to sign the contract within stipulated time, Earnest Money will be forfeited.

5.5.   KFUEIT Rahim Yar Khan reserves the right to accept / reject any or all proposals without assigning any reason thereof.

5.6.   The quantity of an order may vary depending on the quoted prices and the allocated funds.

5.7.   The decision of the KFUEIT Central Purchase Committee will be binding on all concerned and will in no case be challenged in any forum.

5.8.   KFUEIT Rahim Yar Khan reserves the right to modify the conditions / specifications of the Tender Document with written intimation to all the participants who have purchased the Tender Document.

5.9.   Delivery period will be as per contract agreement and terms & conditions of purchase order/supply order.

5.10. Delivery shall be completed according to the agreed upon schedule as per contract agreement and terms & conditions of purchase order/supply order.

5.11. In case the selected bidder fails to execute the contract strictly in accordance with the terms and conditions laid down in the contract, the Performance Guarantee shall be forfeited.

5.12. The University will get the item inspected at KFUEIT Rahim Yar Khan and reject the item, if not found according to the stated specifications.

5.13. The University reserves the right to claim compensation for the losses caused by delay in the delivery of equipment.

5.14. It is the sole responsibility of the bidder to comply with local, national and international laws.

5.15. In case any supplies/material is found not in conformity with the specifications provided in the tender, either on account of inferior quality, defective workmanship, faulty design, faulty packing or is short supplied, or wrongly supplied, the supplier will replace the same free of charges or pay the full cost of replacement.

5.16. All the proposals submitted will become the property of the University.

5.17. All prices should be valid for at least 120 days. Withdrawal or any modification of the original offer within the validity period shall entitle the KFUEIT Rahim Yar Khan to forfeit the Earnest Money in favour of the KFUEIT Rahim Yar Khan and/or putting a ban on the future inquires or taking any other suitable action against the bidder.

5.18. Delivery of the items will be free of charge at Khawaja Fareed University of Engineering & Information Technology, Rahim Yar Khan during the office hours with a copy of Delivery Challan.

5.19. Items being ordered should be brand-new and according to order specification from the current production and covered under normal warranty/guarantee etc. as mentioned in the quote. Brochures mentioned and product details must be attached.

6. Tender Evaluation Criteria

All bids shall be evaluated on technical and financial merit. The Company Evaluation Criteria is attached at **Annex 'C'** for reference. Minimum Score of 60 is required for a bidder to qualify in Technical Evaluation. Technical evaluation process may include, but not limited to the consideration of the following with respect to the functional requirements given ahead:

 a. Technical specifications of proposed item
 b. Company Profile
  i. Age of the company
  ii. Financial strength of the bidder

Financial Evaluation process will be based on the consideration of the quoted price.

7. Undertaking

On behalf of the company, it is certified that we agree to the all the Instructions and Terms & Conditions given in this Tender Document

Name of bidder…………………………………………………………………………

Authorized person…………………………………………………………………………...

Authorized signature…………………………………………………………………………

Stamp…………………………………………………………………………………………

Office Address………………………………………………………………………………

Tel No …………………………………………………………………………………………

Fax No …………………………………………………………………………………………

Supply & Installation of I.T. Equipment under Revenue Component of PC-I Phase-II

Sr. No.	Description	Specification	Qty
		Network Switches	
1	24 Ports 10/100/1000 Mbps with 10G Uplink Ports Power over Ethernet Switches	Manageable Network Switch 24Port PoE+, 24 * 10/100/1000 Base-T , 4 x 1 10GbE SFP+ w/ VC License and VC Cable Rack Mount 24 ports, 4x 1/10G Modular uplinks All Ports Must Support PoE/PoE+ Total PoE Power Budget Minimum 370Watt Port density 24 x 1GbE and 4 SFP/SFP+ 10GbE Chassis Fabric Virtual Support Yes Wired Assurance Yes Backplane speed Minimum 80 Gbps Data rate Minimum 128 Gbps Throughput Minimum 95 Mpps (wire speed) Resiliency Integrated power supply and fans Traffic monitoring sFlow Quality-of-service (QoS) queues/port Minimum 8 **Layer 2 Features** MAC addresses Minimum 16,000 Jumbo frames Minimum 9216 bytes Number of VLANs 4093 ARP entries Minimum 1500 Must support WIFI 6 802.11ax Access Points , Port-based VLAN, MAC-based VLAN, Voice VLAN, L2PT, IEEE 802.1ak, PVST+, RVI ,IEEE 802.1AB: LLDP, LLDP-MED with VoIP integration, IEEE 802.1ad Q-in-Q tunneling, IEEE 802.1br, IEEE 802.1D, IEEE 802.1p, IEEE 802.1Q, IEEE 802.1Q-in-Q, IEEE 802.1s, IEEE 802.1w, IEEE 802.1X, IEEE 802.3, IEEE 802.3u, IEEE 802.3ab, IEEE 802.3z, 1000BASE-X, IEEE 802.3ad, IEEE 802.3x, IEEE 802.3az, ,MST instances: Minimum 64 , VSTP instances: Minimum 253 **Layer 3 Features:** ARP entries: 1,500 Pv4 unicast / multicast routes Minimum 4096 / 2048	22

Sr. No.	Description	Specification	Qty
		IPv6 unicast / multicast routes Minimum 2048 / 1024	
		Routing Protocols: RIP v1/v2, OSPF v1/v2	
		Static routing ,Routing policy BFD) with slow timers (> 3 sec),	
		IP directed broadcast	
		Neighbor discovery, system logging, Telnet, SSH, SNMP, Network Time Protocol (NTP), Domain Name System (DNS)	
		Static routing	
		Routing protocols: RIPng, OSPF v3, Multicast Listener Discovery, Multicast Listener Discovery v2	
		Port-based ACL (PACL), VLAN-based ACL (VACL), Router-based ACL (RACL), ACL entries (ACE) in hardware per system Minimum2,000, ACL counter for denied packets ,ACL counter for permitted packets Ability to add/remove/change ACL entries in middle of list (ACL editing) ,L2-L4 ACL	
		Access Security, MAC limiting, Allowed MAC addresses—configurable per port, Sticky MAC (persistent MAC address learning) ,Dynamic ARP inspection (DAI), Proxy ARP, Static ARP support, DHCP snooping, 802.1X port-based, 802.1X multiple supplicants, 802.1X with VLAN assignment ,802.1X with authentication bypass access (based on host MAC address), 802.1X with VoIP VLAN support, 802.1X dynamic ACL based on RADIUS attributes, 802.1X Supported EAP types: Message Digest 5 (MD5), Transport Layer Security (TLS), Tunneled Transport Layer Security (TTLS), Protected Extensible Authentication Protocol (PEAP),IPv6 RA Guard, IPv6 Neighbor Discovery Inspection, Captive Portal, Static MAC authentication, MAC-RADIUS ,Control plane DoS protection, Fallback authentication, Trusted Network Connect (TNC) certified,High Availability, Link aggregation,802.3ad (LACP) support:	
		- Number of LAGs supported: 128	
		- Maximum number of ports per LAG: 8	
		Tagged ports support in LAG, Uplink Failure Detection	
		Quality of Service (QoS), Layer 2 QoS, Layer 3 QoS	
		Ingress policing: one-rate two-color; two-rate three-color markers	
		Hardware queues per port: 8	
		Scheduling methods (egress): Strict Priority (SP), shapeddeficit weighted round-robin (SDWRR), 802.1p, DSCP /IP precedence trust and marking, L2-L4 classification criteria: Interface, MAC address, EtherType, 802.1p, VLAN, IP address, DSCP/IP precedence,TCP/UDP port numbers, Congestion avoidance capabilities: Tail drop and WRED, Multicast, IGMP snooping entries: 2,000, IGMP: v1, v2, v3	
		IGMP snooping, PIM-SM, PIM-SSM, PIM-DM, MLD snooping, Services and Manageability, Out-of-band management: Serial, 10/100BASE-T Ethernet, ASCII configuration, Rescue configuration, Configuration rollback, Image rollback, Simple Network Management Protocol	

9

Sr. No.	Description	Specification	Qty
		(SNMP): v1, v2c, v3, Remote monitoring (RMON) (RFC 2819) Groups 1, 2, 3, 9, Network Time Protocol (NTP) ,DHCP server	
		DHCP client and DHCP proxy, DHCP relay and helper, RADIUS authentication,TACACS+ authentication, SSHv2, Secure copy	
		HTTP/HTTPs,DNS resolver, System log logging, Temperature sensor	
		Configuration backup via FTP/secure copy, Interface range	
		01 year Software & Hardware Support , All Mounting, Managing & Connecting Accessories.	
		Should be Rated as leader at least once during last 3 years in Gartner Magic Quadrant for Wired LAN Access Infrastructure	
		Warranty & support must be verifiable by the Principal.	
		Product near to end of life or support will not be accepted Must Have OEM Presence in Pakistan	
		Vendor must present Authorization letter from the manufacturer	
2	48 Ports 10/100/1000 Mbps with 10G uplink Ports Switches	Manageable Network Switch 48 Port, 10/100/1000Base-T, 4 x 1 10GbE, SFP+ + w/ VC License and VC Cable	22
		Port density 48 x 1GbE and 4 SFP/SFP+ 10GbE	
		Wired Assurance Yes	
		Chassis Fabric Virtual Support Yes	
		Backplane speed 80 Gbps	
		Data rate 176 Gbps	
		Throughput 130 Mpps (wire speed)	
		Resiliency Integrated power supply and fans	
		Traffic monitoring sFlow	
		Quality-of-service (QoS) queues/port Minimum 8	
		Layer 2 Features	
		MAC addresses Minimum 16,000	
		Jumbo frames Minimum 9216 bytes	
		Number of VLANs 4093 ARP entries Minimum 1500	
		Must support	
		Port-based VLAN, MAC-based VLAN, Voice VLAN, L2PT, IEEE 802.1ak, PVST+, RVI ,IEEE 802.1AB: LLDP, LLDP-MED with VoIP integration, IEEE 802.1ad Q-in-Q tunneling, IEEE 802.1br, IEEE 802.1D, IEEE 802.1p, IEEE 802.1Q, IEEE 802.1Q-in-Q, IEEE 802.1s, IEEE 802.1w, IEEE 802.1X, IEEE 802.3, IEEE 802.3u, IEEE 802.3ab, IEEE 802.3z, 1000BASE-X, IEEE 802.3ad, IEEE 802.3x, IEEE 802.3az, ,MST instances: Minimum 64	
		,VSTP instances: Minimum 253	
		Layer 3 Features:	
		Maximum number of ARP entries: 1,500	

Sr. No.	Description	Specification	Qty
		Pv4 unicast / multicast routes Minimum 4096 / 2048	
		IPv6 unicast / multicast routes Minimum 2048 / 1024	
		Routing Protocols: RIP v1/v2, OSPF v1/v2	
		Static routing ,Routing policy BFD) with slow timers (> 3 sec),	
		IP directed broadcast	
		Neighbor discovery, system logging, Telnet, SSH, SNMP, Network Time Protocol (NTP), Domain Name System (DNS)	
		Static routing	
		Routing protocols: RIPng, OSPF v3, Multicast Listener Discovery, Multicast Listener Discovery v2	
		Port-based ACL (PACL), VLAN-based ACL (VACL), Router-based ACL (RACL), ACL entries (ACE) in hardware per system Minimum2,000, ACL counter for denied packets ,ACL counter for permitted packets Ability to add/remove/change ACL entries in middle of list (ACL editing) ,L2-L4 ACL	
		Access Security, MAC limiting, Allowed MAC addresses—configurable per port, Sticky MAC (persistent MAC address learning) ,Dynamic ARP inspection (DAI), Proxy ARP, Static ARP support, DHCP snooping, 802.1X port-based, 802.1X multiple supplicants, 802.1X with VLAN assignment ,802.1X with authentication bypass access (based on host MAC address), 802.1X with VoIP VLAN support, 802.1X dynamic ACL based on RADIUS attributes, 802.1X Supported EAP types: Message Digest 5 (MD5), Transport Layer Security (TLS), Tunneled Transport Layer Security (TTLS), Protected Extensible Authentication Protocol (PEAP),IPv6 RA Guard, IPv6 Neighbor Discovery Inspection, Captive Portal, Static MAC authentication, MAC-RADIUS ,Control plane DoS protection, Fallback authentication, Trusted Network Connect (TNC) certified,High Availability, Link aggregation,802.3ad (LACP) support:	
		- Number of LAGs supported: 128	
		- Maximum number of ports per LAG: 8	
		Tagged ports support in LAG, Uplink Failure Detection	
		Quality of Service (QoS), Layer 2 QoS, Layer 3 QoS	
		Ingress policing: one-rate two-color; two-rate three-color markers	
		Hardware queues per port: 8	
		Scheduling methods (egress): Strict Priority (SP), shapeddeficit weighted round-robin (SDWRR), 802.1p, DSCP /IP precedence trust and marking, L2-L4 classification criteria: Interface, MAC address, EtherType, 802.1p, VLAN, IP address, DSCP/IP precedence,TCP/UDP port numbers, Congestion avoidance capabilities: Tail drop and WRED, Multicast, IGMP snooping entries: 2,000, IGMP: v1, v2, v3	
		IGMP snooping, PIM-SM, PIM-SSM, PIM-DM, MLD snooping, Services and Manageability, Out-of-band management: Serial, 10/100BASE-T Ethernet, ASCII configuration, Rescue configuration, Configuration	

Sr. No.	Description	Specification	Qty
		rollback, Image rollback, Simple Network Management Protocol (SNMP): v1, v2c, v3, Remote monitoring (RMON) (RFC 2819) Groups 1, 2, 3, 9, Network Time Protocol (NTP) ,DHCP server	
		DHCP client and DHCP proxy, DHCP relay and helper, RADIUS authentication,TACACS+ authentication, SSHv2, Secure copy	
		HTTP/HTTPs,DNS resolver, System log logging, Temperature sensor	
		Configuration backup via FTP/secure copy, Interface range	
		01year Software & Hardware Support, All Mounting, Managing & Connecting Accessories.	
		Should be Rated as leader at least once during last 3 years in Gartner Magic Quadrant for Wired LAN Access Infrastructure Must Have OEM Presence in Pakistan	
		Product near to end of life or support will not be accepted	
		Warranty & support must be verifiable by the Principal.	
		Vendor must present Authorization letter from the manufacturer	
3	24 Ports 10/100/1000 Mbps with 10G uplink Ports Switches	Manageable Network Switch 24 Port, 10/100/1000Base-T, 4 x 1 10GbE, SFP+ + w/ VC License and VC Cable	26
		Rack Mount 24 ports, 4x 1/10G Modular uplinks	
		Port density 24 x 1GbE and 4 SFP/SFP+ 10GbE	
		Wired Assurance Yes	
		Chassis Fabric Virtual Support Yes	
		Backplane speed Minimum 80 Gbps	
		Data rate Minimum 128 Gbps	
		Throughput Minimum 95 Mpps (wire speed)	
		Resiliency Integrated power supply and fans	
		Traffic monitoring sFlow	
		Quality-of-service (QoS) queues/port Minimum 8	
		Layer 2 Features	
		MAC addresses Minimum 16,000	
		Jumbo frames Minimum 9216 bytes	
		Number of VLANs 4093 ARP entries Minimum 1500	
		Must support	
		Port-based VLAN, MAC-based VLAN, Voice VLAN, L2PT, IEEE 802.1ak, PVST+, RVI ,IEEE 802.1AB: LLDP, LLDP-MED with VoIP integration, IEEE 802.1ad Q-in-Q tunneling, IEEE 802.1br, IEEE 802.1D, IEEE 802.1p, IEEE 802.1Q, IEEE 802.1Q-in-Q, IEEE 802.1s, IEEE 802.1w, IEEE 802.1X, IEEE 802.3, IEEE 802.3u, IEEE 802.3ab, IEEE 802.3z, 1000BASE-X, IEEE 802.3ad, IEEE 802.3x, IEEE 802.3az, ,MST instances: Minimum 64	
		,VSTP instances: Minimum 253	

Sr. No.	Description	Specification	Qty
		Layer 3 Features:	
		ARP entries: 1,500	
		Pv4 unicast / multicast routes Minimum 4096 / 2048	
		IPv6 unicast / multicast routes Minimum 2048 / 1024	
		Routing Protocols: RIP v1/v2, OSPF v1/v2	
		Static routing ,Routing policy BFD) with slow timers (> 3 sec),	
		IP directed broadcast	
		Neighbor discovery, system logging, Telnet, SSH, SNMP, Network Time Protocol (NTP), Domain Name System (DNS)	
		Static routing	
		Routing protocols: RIPng, OSPF v3, Multicast Listener Discovery, Multicast Listener Discovery v2	
		Port-based ACL (PACL), VLAN-based ACL (VACL), Router-based ACL (RACL), ACL entries (ACE) in hardware per system Minimum2,000, ACL counter for denied packets ,ACL counter for permitted packets Ability to add/remove/change ACL entries in middle of list (ACL editing) ,L2-L4 ACL	
		Access Security, MAC limiting, Allowed MAC addresses—configurable per port, Sticky MAC (persistent MAC address learning) ,Dynamic ARP inspection (DAI), Proxy ARP, Static ARP support, DHCP snooping, 802.1X port-based, 802.1X multiple supplicants, 802.1X with VLAN assignment ,802.1X with authentication bypass access (based on host MAC address), 802.1X with VoIP VLAN support, 802.1X dynamic ACL based on RADIUS attributes, 802.1X Supported EAP types: Message Digest 5 (MD5), Transport Layer Security (TLS), Tunneled Transport Layer Security (TTLS), Protected Extensible Authentication Protocol (PEAP),IPv6 RA Guard, IPv6 Neighbor Discovery Inspection, Captive Portal, Static MAC authentication, MAC-RADIUS ,Control plane DoS protection, Fallback authentication, Trusted Network Connect (TNC) certified,High Availability, Link aggregation,802.3ad (LACP) support:	
		- Number of LAGs supported: 128	
		- Maximum number of ports per LAG: 8	
		Tagged ports support in LAG, Uplink Failure Detection	
		Quality of Service (QoS), Layer 2 QoS, Layer 3 QoS	
		Ingress policing: one-rate two-color; two-rate three-color markers	
		Hardware queues per port: 8	
		Scheduling methods (egress): Strict Priority (SP), shapeddeficit weighted round-robin (SDWRR), 802.1p, DSCP /IP precedence trust and marking, L2-L4 classification criteria: Interface, MAC address, EtherType, 802.1p, VLAN, IP address, DSCP/IP precedence,TCP/UDP port numbers, Congestion avoidance capabilities: Tail drop and WRED, Multicast, IGMP snooping entries: 2,000, IGMP: v1, v2, v3	

Sr. No.	Description	Specification	Qty
		IGMP snooping, PIM-SM, PIM-SSM, PIM-DM, MLD snooping, Services and Manageability, Out-of-band management: Serial, 10/100BASE-T Ethernet, ASCII configuration, Rescue configuration, Configuration rollback, Image rollback, Simple Network Management Protocol (SNMP): v1, v2c, v3, Remote monitoring (RMON) (RFC 2819) Groups 1, 2, 3, 9, Network Time Protocol (NTP) ,DHCP server	
		DHCP client and DHCP proxy, DHCP relay and helper, RADIUS authentication,TACACS+ authentication, SSHv2, Secure copy	
		HTTP/HTTPs,DNS resolver, System log logging, Temperature sensor	
		Configuration backup via FTP/secure copy, Interface range	
		01 year Software & Hardware Support , Managing & Connecting Accessories.	
		Should be Rated as leader at least once during last 3 years in Gartner Magic Quadrant for Wired LAN Access Infrastructure Must Have OEM Presence in Pakistan	
		Warranty & support must be verifiable by the Principal.	
		Product near to end of life or support will not be accepted	
		Vendor must present Authorization letter from the manufacturer	
4	Backbone Switch 10G 48 Ports with 40G uplink ports	Core / Aggregation Switch	01
		Port density 48 x 1/10GbE SFP+ and 4 x 40G QSFP+	
		Included 2x 40G QSFP+ Transceivers Modules for 1.4km or more	
		CPU 1.8 GHz quad-core Intel or better	
		Dual redundant (1+1) and hotpluggable power supplies	
		Wired Assurance Yes	
		Campus Fabrics Virtual Chassis, MC-LAG, ESI-LAG, EVPN-VXLAN	
		Data rate 2 Tbps or better	
		Throughput 1.49 Bpps or better	
		Resiliency Redundant internal load-sharing	
		Redundant (N+1) and hot-pluggable fan modules for front-to- back and back-to-front airflow • Redundant variable-speed fans to reduce power draw	
		Traffic monitoring sFlow	
		QoS queues/port 8 or better	
		MAC addresses 288,000 or better	
		Number of link aggregation groups (LAGs) 104	
		Number of ports per LAG 32	
		Firewall filters (ingress / egress) 6,142 / 1,022	
		IPv4 unicast routes 128,000 prefixes; 208,000 host routes; 64 ECMP paths	

Sr. No.	Description	Specification	Qty
		IPv4 multicast routes 104,000 IPv6 unicast routes 84,000 IPv6 multicast routes 52,000	
		ARP entries 48,000	
		Jumbo frame 9,216 bytes	
		Spanning Tree Protocol (STP) •	
		Multiple Spanning Tree Protocol (MSTP) Instances: 64 • VLAN Spanning Tree Protocol (VSTP) Instances: 253 Traffic mirroring •	
		Mirroring destination ports per switch: 4 •	
		Maximum number of mirroring sessions: 4 •	
		Mirroring destination VLANs per switch: 4	
		VLANs 4093	
		01-year Software & Hardware Support, All Mounting, Managing & Connecting Accessories. Must Have OEM Presence in Pakistan	
		Should be Rated as leader at least once during last 3 years in Gartner Magic Quadrant for Wired LAN Access Infrastructure	
		Warranty & support must be verifiable by the Principal.	
		Vendor must present Authorization letter from the manufacturer	
5	Fiber Modules 10G-LR	Single Mode SFP+	24
		10G Base-LR Minimum 2KM or more	
		1310nm 70c Class 1 Laser	
		Long Range Fiber Transceiver Must be Compatible with the Sr#1 to 4 Proposed Network Switches	
6	Fiber Modules 10G-SR	10G-Short Range Single Mode SFP+	10
		10G Base-SR Minimum 400m or more	
		1310nm 70c Class 1 Laser	
		Long Range Fiber Transceiver Must Be Compatible with the Sr#1 to 4 Proposed Network Switches	
7	Hardware Firewall, IDS, IPS	Next Generation Application Hardware Firewall with 3 Year Subscription & Hardware Replacement Warranty Must Have Full Features Working Even License Is Expired Minimum 12Gbps NGFW Throughput (FW + SA + IPS) Minimum 9Gbps Threat Protection Throughput (FW + SA + IPS + Antivirus) Unrestricted Concurrent User Minimum 1TB Storage Capacity Network Interfaces Bypass (Copper) 10/100/1000 Base-T SFP 10G Fiber SFP Minimum 4*1GbE BASE-T Minimum 2* 10GbE SFP+ Power Redundancy	1

Sr. No.	Description	Specification	Qty
		Must Include Intrusion Prevention System (IPS), Anti-Virus & Anti-Malware, Email Security Protection, Cloud-Based Security Sandbox, Web Filtering, Application Control, Bandwidth Management, Captive Portal Minimum 100 Concurrent Users for SSL VPN 3 Years Complete Security Features License 3 Years Software Upgrade & Technical Support 3 Years Hardware Warranty Service Onsite Configuration & Installation Onsite Training & Product Certification For 2 Participants Shoud Be Listed at least once during last 3 years in Cyber Ratings for Enterprise Firewall and Gartner Magic Quadrant for Next Generation Firewall Must Have OEM Presence in Pakistan Web Application Firewall Solution Can Be Hardware Appliance OR Software Module in Quoted NGFW Above Must Be Listed in Any Year NSS Labs for Web Application Firewall Must Have Minimum 8Gbps Web Application Firewall Throughput or more Must Include AI-Based Machine Learning Threat Detection, IP Geolocation, Data Leak Prevention, Brute Force Protection, HTTP Header Security, Custom Error Message, Error Code Handling and Local Report Center Must Include Application Attack Protection, OWASP Top 10 Protection, Cross Site Scripting, SQL Injection, Cross Site Request Forgery, Session Hijacking, Built-in Vulnerability Scanner, File Upload Scanning with Anti-Virus and Cloud-Based Sandbox 3 Years Complete Security Features License 3 Years Software Upgrade & Technical Support 3 Years Hardware Warranty Service If Propose Hardware Appliance Onsite Configuration & Installation Onsite Training & Product Certification For 2 Participants Shoud Be Listed at least once during last 3 years in Cyber Ratings for Enterprise Firewall and Gartner Magic Quadrant for Next Generation Firewall Must Have OEM Presence in Pakistan Vendor must present Authorization letter from the manufacturer	
		Network Passive Components	
1	Network/Server Racks 42U	Total Units =06 (Server Rack Units = 02 + Network Rack Unit= 04) **Server Rack 42U specifications:** Cabinet Floor Standing Rack 42U having following equivalent or better specification is required Network Rack cabinet 42U Dual vented rear doors 800mm(W) X 1000mm(D) Minimum Depth 37inches Dimensions (inches) 78 * 23 * 43 Unit Weight Minimum 281 lbs. Heavy Duty Sliding Shelf	6

Sr. No.	Description	Specification	Qty
		Cable Manager Vertical	
		Cable Manager Horizontal	
		Roof Mounted Cable through Vertical Expansion Plates	
		Minimum 2xPower Distribution Panels, must have minimum 8 power sockets slots	
		Mesh front doors Clear Acrylic Window	
		Moveable & Lockable Wheels Foundation	
		Color Black	
		Accessories: Sidewalls Split rear doors	
		Bolt Down Kits	
		Cable Management Power Strips – vertical or Rackmount Enclosure Monitoring System Tool Less Blanking Panels, Fans	
		Real Pictures of the proposed Rack must be attached with technical bid **Network Rack 42U specifications:**	
		Cabinet Floor Standing Rack 42U having following equivalent or better specification is required	
		Network Rack cabinet 42U Dual vented rear doors 800mm(W) X 1000mm(D)	
		Minimum Depth 37inches	
		Dimensions (inches) 78 * 23 * 43	
		Unit Weight Minimum 281 lbs	
		Cable Manager Vertical	
		Cable Manager Horizontal	
		Roof Mounted Cable through Vertical Expansion Plates	
		Minimum 2xPower Distribution Panels, must have minimum 8 power sockets slots	
		Single Front door with Clear Acrylic Window	
		Moveable & Lockable Wheels Foundation	
		Color Black	
		Accessories: Sidewalls Split rear doors	
		Bolt Down Kits	
		Cable Management Power Strips – vertical or Rackmount Enclosure Monitoring System Tool Less Blanking Panels, Fans	

Sr. No.	Description	Specification	Qty
		Real Pictures of the proposed Rack must be attached with technical bid	
2	Network Racks 12U	Wall Mount Network Rack 12U with mounting accessories Secures 12U of 19 in. rack equipment up to minimum 32.5 in. deep Weight Capacity 90Kg+ Grounding Lug Front and Back door frames Front Door - Solid (locking) Rear Door - Solid with knockouts Side Panels - Solid (removable, locking) 90-degree swing-out Removable laser knockouts for fans / cable slots Real Pictures of the proposed Rack must be attached with technical bid	06
3	Network Racks 6U	Wall Mount Network Rack 6U with mounting accessories Device Depth Minimum 32.5cm Weight Capacity 50Kg+ Grounding Lug Front and Back door frames Front Door - Solid (locking) Rear Door - Solid with knockouts Side Panels - Solid (removable, locking) 90-degree swing-out Removable laser knockouts for fans / cable slots Real Pictures of the proposed Rack must be attached with technical bid	14
4	24 port cat 6 loaded patch panels with cable managers	Modular Patch Panel 24 Port Loaded with Tool Free CAT6 I/O and Cable Management Tray having following equivalent or better specification is required Modular Patch Panel, Unshielded, Shuttered 24 Port, IU, Rack Mount, Color Black, With Loaded Tool Free Cat 6 I/O with Rear Cable Management Tray Vendor must present Authorization letter from the manufacturer and a sample of CAT6 I/O for technical evaluation	130
5	8 Port ODF Panels	Fiber Patch Panel /Sliding Splice Box 1U Equipped 08x x SC Duplex, inl M25 Screw, Splice Cassette	12

Sr. No.	Description	Specification	Qty
6	Fiber patch cord SC-LC	Fiber Patch Cord OS2 Single Mode 09/125-micron Duplex Length 3meter Type SC-LC Flexible Class 1 Fiber Cable	30
7	UTP CAT 6 Cable roll	UTP CAT6 24AWG Networking Cable Roll having equivalent or better specification required Cable Roll Length Minimum 300m Must be ISO Certified Brand Conductor: Stranded Bare Copper (24 AWG) Insulation: Nominal Wall Thickness: 0.178mm Min. Thickness: 0.153mm Color Code: Pair 1: Blue & White/Blue Pair 2: Orange & White/Orange Pair 3: Green & White/Green Pair 4: Brown & White/Brown Jacket: Min. Thickness: 0.458 mm Diameter: 5.8mm ± 0.3mm Impedance (Zo): 85~115Ω (1~250 MHz) Max. Conductor Resistance: 14.00Ω/100m 20o Max. Vendor must present Authorization letter from the manufacturer and proposed UTP CAT6 Cable 1meter sample piece at the time of technical evaluation	90
8	Single Mode Fiber Cable	Single Mode OS2 Outdoor Armoured Unitube Fiber Cable 12 Core G652D, 2.6mm loos tube steel wire strength, steel tape armoured , 10GBase, Loose Tube, Gel-Free, PE Jacket Per Meter Vendor must present Authorization letter from the manufacturer and proposed fiber Cable 1meter sample piece at the time of technical evaluation	3,000
		Wireless Access Points & Controller	
1	Wireless Access Points indoor Controller Integrated (Enterprise grade for 250-500 clients)	Wireless Indoor Access Point WIFI 6.0 Enabled with Licenses for Integration with Controller Inclusive of **Two (2)** Hardware Based Controller for these Access Points **Controller Specs:** AP Discovery and Control L2/L3 Authentication Support 802.1x | Active Directory | LDAP | Local database | Open | RADIUS Client Capacity Minimum 4000 or more Access Points Capacity Minimum 150 or more Deployment Tunneled and Local Breakout DHCP Server Yes Ethernet Port Types Minimum 2 x GbE or more Guest Networking/Captive Portal Yes Management Interface FlexMaster | Mobile App | SCI | Web Management Protocols SNMP v3 Number of Access Points Supported Minimum 150 or more VLAN Support Dynamic VLANs Access Points Licenses Bifurcation will be bind after the consent of university technical representative Hardware & Software Support Warranty: 1 Year	60

Sr. No.	Description	Specification	Qty
		Access Points Specs:	
		Antenna Patterns, per band 64 or better	
		Antenna Gain Up to 3 dBi or better	
		Concurrent Users Minimum 512 or more	
		Integration with Controller Yes	
		Ethernet Ports Minimum 2 x 1GbE or more	
		Should Support Technologies BeamFlex+, ChannelFly, Dual Polarized Antenna Vertical/Horizental	
		IoT Ready Yes	
		MRC Yes	
		PHY Rate at 2.4 GHz, Minimum 574 Mb/s or better	
		PHY Rate at 5 GHz, Minimum 1200 Mb/s or better	
		Radio Chains and Streams Minimum 2x2:2 (5 GHz/2.4 GHz) or better	
		Rx Sensitivity at 2.4 GHz -97 dBm or better	
		Rx Sensitivity at 5 GHz -97 dBm or better	
		Tx Power 26dbm or better on 2.4GHZ	
		Tx Power 25dbm or better on 5ghz	
		Maximum Power Operable at PoE+	
		SmartMesh Yes	
		Wi-Fi Interface Standard IEEE 802.11a/b/g/n/ac/ax	
		Wi-Fi Interface Standard at 2.4 GHz 802.11ax	
		Wi-Fi Interface Standard at 5 GHz802.11ax	
		Environmental Specifications	
		Operating Temperature 0 °C to +50 °C	
		Hardware & Software Support Warranty: 1 Year	
		Vendor must present Authorization letter from the manufacturer	
2	Wireless LR radio devices	Better than or equivalent to UBNT Nano station M5 Devices for P2P Connectivity	8
		Power Supply (PoE) 24V, 0.5A 24V, 0.5A	
		Max. Power Consumption 5.5W 8W	
		Power Method Passive PoE (Pairs 4, 5+; 7, 8 Return)	
		Operating Frequency 2412-2462 MHz	
		Gain 10.4-11.2 dBi	
		Networking Interface (2) 10/100 Ethernet Ports	
		Processor Specs Atheros MIPS 24Kc, 400 MHz	
		Memory 32 MB SDRAM, 8 MB Flash	
		Frequency 2.4 GHz	
		Cross-pol Isolation 23 dB Minimum	
		Max. VSWR 1.6:1	
		Beam width 55° (H-pol) / 53° (V-pol) / 27° (Elevation)	
		Polarization Dual Linear	
		Enclosure Outdoor UV Stabilized Plastic	

Sr. No.	Description	Specification	Qty
		Mounting Pole-Mount (Kit Included)	
		Operating Temperature -30 to 75° C (-22 to 167° F)	
		Operating Humidity 5 to 95% Noncondensing	
		Wireless Approvals FCC Part 15.247, IC RS210, CE	
		RoHS Compliance Yes	
		Shock & Vibration ETSI300-019-1.4	

KFUEIT Datacenter

Sr. No.	Description	Specification	Qty
1	Air Conditioned 4 Tons Floor Standing DC Inverter Units for Datacenter	48000 BTU 4.0 Ton Cooling Capacity Concealed LED Display DC Inverter Technology 15m Long Distance Air Throw Long Vertical Airflow Built-in Pump Floor Standing Cabinet Copper Condenser 3 Year Official Warranty Supplier must present the manufacturer authorization letter	1
2	Cable Trays, Jointer, Droppers, Bends, Datacenter Floor	Ladder Trays, Jointer, Droppers, Bends + Installation of Datacenter Cabling with below mentioned dimensions Room#1 Dimension = 14″ * 12′ Network/Server Racks 04 Room#2 Dimension = 13′.3″ * 6′.5′ Network/Server Racks 02 Sample Design is as follow Supplier/Vendor can demand the layout or pictures to estimate the required material to prepare the proposal Supplier/Vendor can visit the physical site beforehand to estimate the required material for the proposal. 	

Sr. No.	Description	Specification	Qty
3	10 KVA online UPS for Datacenter with External Battery Bank	**UPS 10KVA Online double conversion Sign Wave with Batteries** Minimum Backup Time 02:00 Hours 12V-40Ah batteries with rack Output Voltage Note Configurable for 220 : 230 or 240 nominal output voltage Output Voltage Distortion Less than 3 % Output Frequency (sync to mains) 50/60 Hz +/- 1 Hz Un-synchronised, 50/60 Hz +/- 3 Hz Sync to mains Other Output Voltages 220, 240 Topology Double conversion online Waveform type Sine wave Output Voltage THD < 3% linear load Bypass Built-in bypass Input Input frequency 50/60 Hz Input voltage range for main operations 100 - 280 Adjustable, 160 - 280V Number of Power Cords 2 Other Input Voltages 220, 240 Batteries Backup Minimum 2 Hour Expected Battery Life (years) 3 - 5 Battery Charge Power (Watts) 72 Watts Multifunction LCD status and control console Audible Alarm Surge Protection and Filtering Surge energy rating 600Joules Data Line Protection RJ45 modem/fax protection (four wire dual line) Filtering Full time multi-pole noise filtering: 0.3% IEEE surge let-through: zero clamping response time: meets UL 1449	1

Sr. No.	Description	Specification	Qty
		Conformance Approvals EN 60950, EN/IEC 60950-1, EN/IEC 62040-1, EN/IEC 62040-2 Standard warranty 1 years repair or parts replace	
Servers, Computers, Storage Devices			

1	Servers for Storage Area Network (SAN-50TB Extendable)	**Hardware Part**
		 Storage Disks
		 Eight Unit (08) Hard Disks
		 8TB NLSAS for Dell Servers 8TB 7.2K RPM NLSAS 12Gbps 512e 3.5in Hot-plug Hard Drive Dell Part Number 400-AMPG Must Be Compatible with Dell PowerEdge R730
		 1 year hardware warranty
		 Software Part
		 Software Solution for Storage Virtualization inclusive of Compute Virtualization and Network Virtualization
		 Hyper Converged Infrastructure (HCI) Complete Solution for Servers having total of 6 CPU Sockets
		
		 General Requirement
		
		     Total 6 CPU Sockets for All HCI Components
		     Must Be Listed at least once during last 3 years in Gartner
		     Magic Quadrant for Hyper-Converged Infrastructure
		     Software
		
		     Must Be Compatible with Any Intel x86 Architecture Hardware Servers
		     Must Have OEM Presence in Pakistan
		     Must Quote 3 Years Software Upgrade & 24x7 Technical Include
		     Must Quote Onsite Configuration & Installation
		     Must Quote Onsite Training & Product Certification for 2 Participants
		     Virtualization Management
		     Must Include High Availability Redundancy for Virtualization Management Platform
		     Must Include Role-Based Management with Permission Control
		     Must Include HTML5 Web Management
		     Must Include Centralized Control & Visibility
			1

Sr. No.	Description	Specification	Qty
		Must Include Future Scale Out Up to 64 Nodes	
		Must Include to Integrate with Multiple Hypervisors	
		Storage Virtualization	
		Must Be the Same Vendor as Compute Hypervisor	
		Must support 2 Copies & 3 Copies Data Redundancy	
		Must Include Data Striping Technology	
		Must Include SSD Cache & SSD Data Tiering	
		Must Include Data Disk Balancing & Data Rebuilding	
		Must Include Data-At-Rest Encryption for VM Data	
		Compute Virtualization	
		Must Include High Availability Between Nodes	
		Must Include VM Snapshot, VM Clone, VM vMotion	
		Must Include VM Resources Automated Hot-Add	
		Must Include Distributed Resource Scheduler (DRS)	
		Must Include Distributed Switch by Using Cluster-Level Network Aggregation	
		Must Include Hardware Health Check to Monitor CPU, Memory, Network Interface Card, Hard Drive and RAID Controller	
		Network Virtualization	
		Must Be the Same Vendor as Compute Hypervisor	
		Must Include to Display Whole Data Center Network Topology	
		Must Include Network L2 Bridging to Physical Environments	
		Must Include Distributed Routing & Distributed Switching	
		Must Include Distributed Firewalling & Micro-Segmentation	
		Must Include to Display Network Traffic Flow in Real-Time	
		Must Include Network Visualization with Topology overview	
		VM Backup Solution	
		Must Be Fully Compatible with Compute Hypervisor	
		Must Include Full VM Level Backup	
		Must Include to Backup VMs in All Hardware Nodes	
		Must Include Incremental Backup Technology & Differential Backup Technology	
		Must Include Automated Schedule Backup (Weekly, Daily, Hourly)	
		Must support Backup Repository to Internal Virtual Storage	

Sr. No.	Description	Specification	Qty
		Must support Backup Repository to External SAN Storage	
		Must support iSCSI, FC, Network File Sharing Protocol	
		Software perpetual (life time) License	
		3 year Subscription & Technical Support , Upgrade License Included Software license subscription & upgrade, upgrade license included for 3 year	
2	Desktop Computer with LCDs for Faculty/Officers	**Computer Micro Farm Factor 10th Generation Corei7** Processor 10th Generation Intel® Core™ i7-10700T (8-Core, 16MB Cache, 2.0GHz to 4.5GHz, 35W) Windows 10 Pro 64bit English, French, Spanish Videocard Intel® Integrated Graphics Memory 8GB, 1x8GB, DDR4 non-ECC Memory Harddrive M.2 512GB PCIe NVMe Class 40 Solid State Drive Keyboard & Mouse Laser Wireless Intel® Wi-Fi 6 AX201, 2x2, (Gig +) + Bluetooth 5.1 Warranty Period 3 years International **Ports** 1. Power Button Universal Audio Jack Line Out USB 3.2 Gen2 Type-C Port USB 3.2 Gen 2 Type-A Port (with PowerShare) Wireless Antenna Slots HDMI 2.0/ USB 3.2 Gen 2 Type C with DP Alt Mode RJ-45 2 USB 3.2 Gen 1 Type-A Ports (1 with Smart Power on) 2 USB 3.2 Gen 2 Type-A Ports lock slot 2 DisplayPort 1.4	60

Sr. No.	Description	Specification	Qty
		Power Connection (DC-in)	
		Monitor	
		Display Type: Widescreen Flat Panel Display	
		Flat Panel Mount Interface: mounting holes for flexible mounting	
		Connectivity - HDMI 2.0 / USB-C (DP1.2)	
		Must be compatible with above proposed computer	
		Security lock slot with security cable lock to mount computer	
		Diagonal Viewing Size: 49.53 cm (19.5 inches)	
		Horizontal: 432.96 ± 0.96 mm (17.05 inches)	
		Vertical : 238.05 ± 1.71 mm (9.37 inches)	
		Maximum Preset Resolution: 1600 x 900 at 60 Hz	
		Aspect Ratio : 16:9	
		Pixel Pitch: 0.27 mm x 0.27 mm	
		Pixel Per Inch (PPI) : 94	
		Brightness: 250 cd/m² (typical)	
		Color Support: Color gamut (typical): 83% (CIE1976) 72% (CIE1931)	
		Color depth: 16.7 Million	
		Contrast Ratio : 1000:1 (typical)	
		Viewing Angle: 160°/170°	
		Response Time: 5 ms typical (Normal) (gray to gray)	
		Panel Type: TN (Twisted Nematic)	
		Display Screen Coating : Anti-Glare	
		Backlight Technology :LED	
		ComfortView with Flicker-free screen: Yes	
		Remote Asset Management : Yes	
		Connectors 1 X HDMI 1 X DisplayPort 1.2	

Sr. No.	Description	Specification	Qty
		HDCP Support DisplayPort HDCP 1.2	
		Adjustability Tilt (-5° to 21°)	
		Power AC input voltage/frequency/current 100 VAC to 240 VAC / 50 Hz or 60 Hz ± 3 Hz / 0.7 A (typical)	
		Power Consumption (Operational) 11W (Typ). 14W (Max). 10.7W (Energy Star)	
		Power Consumption Stand by/Sleep Less than 0.3W	
		Warranty 3 Years Hardware Warranty	
		Vendor Must Provide the Manufacturer Authorization letter	
3	Desktop Computers with LCDs Medium Specs for Employees	**Computer Micro Farm Factor 10th Generation Corei3**	70
		10th Generation Intel® Core™ i3-10100T (4-Core, 6MB Cache, 3.0GHz to 3.8GHz, 35W)	
		Windows 10 Pro 64bit English, French, Spanish	
		Memory 4GB, 1X4GB, DDR4 non-ECC Memory	
		Harddrive M.2 512GB PCIe NVMe Class 35 Solid State Drive	
		Laser Keyboard & Mouse	
		Wireless Intel® Wi-Fi 6 AX201, 2x2, (Gig +) + Bluetooth 5.1	
		Warranty Period 3 Years	
		Ports	
		Universal Audio Jack	
		Line-out	
		USB 3.2 Gen 1 Type-A port	
		USB 3.2 Gen 1 Type-A port	
		Knock-out Slots for Wireless Antenna	
		DP 1.4/HDMI 2.0	
		USB 2.0 Ports (2) (1 with Smart Power on)	
		USB 3.2 Gen 1 Type-A ports rear (2)	
		Thumbscrew	

Sr. No.	Description	Specification	Qty
		RJ-45 port 10/100/1000 Mbps	
		K-lock Slot	
		13. DisplayPort	
		HDMI Port	
		Monitor	
		Display Type: Widescreen Flat Panel Display	
		Flat Panel Mount Interface: mounting holes for flexible mounting	
		Connectivity - HDMI 2.0 / USB-C (DP1.2)	
		Must be compatible with above proposed computer	
		Security lock slot with security cable lock to mount computer	
		Diagonal Viewing Size: 49.53 cm (19.5 inches)	
		Horizontal: 432.96 ± 0.96 mm (17.05 inches)	
		Vertical : 238.05 ± 1.71 mm (9.37 inches)	
		Maximum Preset Resolution: 1600 x 900 at 60 Hz	
		Aspect Ratio : 16:9	
		Pixel Pitch: 0.27 mm x 0.27 mm	
		Pixel Per Inch (PPI) : 94	
		Brightness: 250 cd/m² (typical)	
		Color Support: Color gamut (typical): 83% (CIE1976) 72% (CIE1931)	
		Color depth: 16.7 Million	
		Contrast Ratio : 1000:1 (typical)	
		Viewing Angle: 160°/170°	
		Response Time: 5 ms typical (Normal) (gray to gray)	
		Panel Type: TN (Twisted Nematic)	
		Display Screen Coating : Anti-Glare	
		Backlight Technology :LED	

Sr. No.	Description	Specification	Qty
		ComfortView with Flicker-free screen: Yes	
		Remote Asset Management : Yes	
		Connectors 1 X HDMI 1 X DisplayPort 1.2	
		HDCP Support DisplayPort HDCP 1.2	
		Adjustability Tilt (-5° to 21°)	
		Power AC input voltage/frequency/current 100 VAC to 240 VAC / 50 Hz or 60 Hz ± 3 Hz / 0.7 A (typical)	
		Power Consumption (Operational) 11W (Typ). 14W (Max). 10.7W (Energy Star)	
		Power Consumption Stand by/Sleep Less than 0.3W	
		Warranty 3 Years Hardware Warranty	
		Vendor Must Provide the Manufacturer Authorization letter	
4	Laptops for Deans, HOD's, Professors	**Laptop 15.6'' Core i7 11th Generation or better**	10
		Processor 11th Generation Intel® Core™ i7-1185G7 (4 Core, 12M cache, base 3.0GHz, up to 4.8GHz)	
		Windows 10 Pro 64bit English	
		Memory 16GB,1x16GB, DDR4 Non-ECC	
		Hard drive M.2 512GB PCIe NVMe Class 40/35 Solid State Drive	
		Display 15.6" FHD (1920x1080) AG Non-Touch	
		FHD IR Cam & Mic	
		Wireless Intel® Wi-Fi 6 AX201 2x2 802.11ax 160MHz + Bluetooth 5.1	
		Inbuilt Microphone Yes	
		Webcam Yes	
		Body Metallic/Aluminium	
		Battery Type Lithium-Ion battery	
		Ports	
		Universal Audio	
		USB 3.2 Powershare|	

Sr. No.	Description	Specification	Qty
		USB 3.2	
		HDMI 2.0	
		RJ45	
		Wedge Lock Slot	
		Thunderbolt™ 4 with Power Delivery and DisplayPort (USB Type-C™)	
		Thunderbolt™ 4 with Power Delivery and DisplayPort (USB Type-C™) |	
		Warranty International 1 year	
		Vendor Must Provide the Manufacturer Authorization letter	

Printers, Photocopiers, Scanners			

Sr. No.	Description	Specification	Qty
1	Office Printers (All in One)	Laserjet Professional Office Printer 3 in 1 (Functions Print, copy, scan)	30
		Better than or equivalent to HP m26nw LaserJet pro MFP Printer	
		COPYING	
		Max Copying SpeedUp to 18 ppm Max Copying ResolutionUp to 600 x 600 dpi Max Copying Speed B/W18 ppm Max Copying Resolution B/W600 x 600 dpi Max Document Enlargement400 % Max Document Reduction25 % Maximum Copies99	
		ENVIRONMENTAL STANDARDS	
		Blue Angel Compliant Yes ENERGY STAR Certified Yes	
		PRINTING	
		Max Printing ResolutionUp to 600 x 600 dpi Max Printing SpeedUp to 18 ppm Max Resolution B/W600 x 600 dpi	
		Printer Drivers / EmulationsPCLm, PCLms	
		Image Enhancement TechnologyHP FastRes 1200, HP FastRes 600	
		Max Printing Speed B/W (ppm)18 ppm	
		First Print Out Time B/W9.2 sec	
		CONNECTIONS	
		Security Protocols & Features Wi-Fi Direct	
		ENVIRONMENTAL PARAMETERS Sound Emission47 dBA (operating)	
		Sound Emission (Operating)47 dBA Min Operating Temperature59 °F	
		Max Operating Temperature90.5 °F Humidity Range Operating30 - 70%	

Sr. No.	Description	Specification	Qty
		DOCUMENT & MEDIA HANDLING	
		Max Media SizeA4/Legal	
		Document & Media Handling DetailsInput tray - 150 sheets - Legal (8.5 in x 14 in)/A4 (8.25 in x 11.7 in) weight: 60 g/m² - 163 g/m²	
		Output tray - 100 sheets	
		Speed Details	
		Printing: up to 18 ppm (A4) - B/W	
		Copying: up to 18 ppm (A4) - B/W	
		Max Original Size8.5 in x 11.7 in	
		Original Typesheets Document FeederADF	
		Media Type Classenvelopes, film / transparencies, other	
		Media Size ClassA4/Legal Min Media Size3 in x 5 in	
		Min Media Weight60 g/m² Max Media Weight163 g/m²	
		Supported Media Typecards, envelopes, labels, plain paper, transparencies	
		Supported Media Sizes3 in x 5 in, A4 (8.25 in x 11.7 in), A5 (5.83 in x 8.25 in), C5 (6.38 in x 9 in), DIN long (8.27 in x 3.9 in), JIS B5 (7.17 in x 10.12 in), Legal (8.5 in x 14 in)	
		Supported Envelope SizesInternational B5 (6.93 in x 9.83 in), International C5 (6.38 in x 9 in), International DL (4.33 in x 8.66 in)	
		Standard Media Capacity150 sheets	
		Output Trays Capacity100 sheets	
		HEADER BrandHP Product LineHP LaserJet Pro	
		ModelMFP M26nw Country KitsAmericas Packaged Quantity1	
		OFFICE MACHINE Typeprinter / copier / scanner Functionscopier, printer, scanner Monthly Duty Cycle (max)5000 pages	
		Printing Technology laser	
		Printing Output Type monochrome	
		Office Machine Featuresscan to application, scan to e-mail, scan to folder	
		INTERFACE REQUIRED	
		Connector Type4 pin USB Type B, RJ-45 TypeLAN, USB 2.0	
		SCANNING	
		Optical Resolution1200 dpi Grayscale Depth8-bit	
		Color Depth24 bit Scan ElementCIS	
		Toner Cartridge must be refillable	

Sr. No.	Description	Specification	Qty
		InterfaceLAN, USB 2.0, Wi-Fi(n) Security Protocols & Features Wi-Fi Direct Consumables Included1 x cartridge (black) - up to 500 pages Color Category white 1 year official warranty	
Voice Over IP Equipment			
1	VOIP Telephone sets	**VOIP Phone** Must be compatible with Astesrisk Open Source PBX NETWORK INTERFACE 2 10/100BASE-TX Ethernet Ports (1 to PoE LAN switch with 802.3af compliance, 1 to PC) SIGNAL, MEDIA & NETWORK PROTOCOLS SIP RFC 3261 & the related RFC standard in Appendix A SDP RFC 2327 RTP RFC 1889 IP assignment: Static IP, DHCP and PPPoE STUN, static port mapping (for NAT traversal) SNTP DNS & DNS SRV TFTP/FTP/HTTP for Auto Provision IP/TCP/UDP/ARP/ICMP VOICE CODEC G.711a/u (64k bps) G.729A/B (8k bps) G.723.1high/low G.726-32 G.722 ADVANCED VOICE QUALITY FEATURES	70

Sr. No.	Description	Specification	Qty
		Silence Suppression ,Acoustic Echo Cancellation (G.167), Voice Active Detection (VAD), Comfort Noise Generation, Jitter Buffer	
		DTMF Transmitter (SIP info,Transparent, RFC 2833) ,Packet Lost Concealment (PLC)	
		KEYPAD	
		Menu ,Phone Book,Callers, 4Navigation keys+ 1 OK key, MWI, Conference ,RLS(Release key), Mute, Transfer, R/Send (Redial and the entry to access call history; finish dialing and call the number), Hold ,Speaker, Keypad: 31 keys, including 4 Soft-keys 7 Function keys	
		4 Navigation keys + 1 OK key 12 Standard Phone Digits keys	
		2 Volume Control keys, Up/Down 1 Hands-free key	
		CALL FEATURES	
		Call Forward (Busy, No answer, Unconditional) ,Call Waiting, Call waiting Indication, Three Way Conference, Anonymous Call/Rejection	
		Message Waiting Indication, Do Not Disturb, Auto Answer, Black list	
		Limit list, Auto hangup, Ban outgoing, hotline	
		SPEAKER PHONE	
		Built-in Speaker	
		REMOTE FIRMWARE UPGRADE	
		FTP/TFTP/HTTP for Firmware remote update	
		APS auto-provisioning for firmware and profile upgrade	

Sr. No.	Description	Specification	Qty
		USER INTERFACE/NETWORK MANAGEMENT 128x48 dot-matrix LCD display and HTTP(WEB) UI in English version & other Languages QoS IEEE 802.1p Compliant Diffserv (DSCP)/ToS SECURITY/ CLASS OF SERVICE 802.1Q VLAN Tag Full range VLAN ID Support PHONE FEATURES 2 SIP Line Caller ID display Call History: 100 Missed Calls, 100 Received Calls, 100 Dialed Calls Phone book (up to 500 contact names and phone numbers) Supports XML Phonebook/Browser Supports click to dial via web phonebook Day/Time display Call/Time display 14 Selective Ring tones (9 tones & 5 melodies) 10 Speed dial number Incoming call indicator Password control for Configuration Pre-dial before sending Memo Standard RJ9 Handset Wire x1 1.5M CAT5 Ethernet Cable x1 RJ9 Phone port x2: Handset x1, Headphone x1 RJ11 EXT port x1: Extension Module x1 1 Year Hardware Warranty	
UPS for IT Equipment			
1	UPS 5KVA with External Batteries Bank	**UPS 5KVA with Dry Cell Batteries** Minimum Backup Time 02:00 Hours 12V-40Ah batteries with rack Output Voltage Note Configurable for 220: 230 or 240 nominal output voltage Output Voltage Distortion Less than 3 % Output Frequency (sync to mains) 50/60 Hz +/- 1 Hz	8

Sr. No.	Description	Specification	Qty
		Other Output Voltages 220, 240 Input Input frequency 50/60 Hz Number of Power Cords 2 Other Input Voltages 220, 240 Batteries Backup Minimum 2 Hour Surge Protection and Filtering Standard warranty 1 years repair or replace	
Air Condition Units for Central Network Rooms in Academic Buildings			
1	Air-Conditioned Units 1.5 Tons for Network Communication Rooms	1.5 Ton Cooling Capacity DC Inverter Technology Long Distance Air Throw Wall Mountable Copper Condenser 3 Year Official Warranty Vendor must present Authorization letter from the manufacturer	6
Video Surveillance Equipment			
1	Bullet IP Camera's Indoor, 4MP	4MP EXIR Fixed Bullet Network Camera, 1/3" Progressive Scan CMOS, 2560 × 1440@20fps, 4 mm fixed lens, Color: 0.028 Lux @ (F2.0, AGC ON), H.265, H.265+, H.264, H.264+, BLC/HLC/3D DNR/ROI, DWDR, IR range: Up to 30 m, 3-Axis adjustment, IP67 1 Year Hardware Warranty Vendor must present Authorization letter from the manufacturer	80
2	Bullet IP Camera's Outdoor, 8MP	Up to 8-megapixel high resolution, 1/2" Progressive Scan CMOS Max. 3840 × 2160@20fps 2.8mm mmfixed lens, horizontal FOV: 102°, vertical FOV: 55°, diagonal FOV: 120°, Video Compression: H.265+/H.265/H.264+/H.264/MJPEG Image Enhancement: BLC/3D DNR/ROI/HLC, System Compatibility: ONVIF (Profile S, Profile G), ISAPI, Built-in Micro SD/SDHC/SDXC slot, up to 128 GB Recognition: Face Detection, Power Supply:12 VDC ± 25%, PoE (802.3af Class3), Day/Night Switch: Day/Night/Auto/Schedule 1 Year Hardware Warranty	20

Sr. No.	Description	Specification	Qty
		Vendor must present Authorization letter from the manufacturer	
3	Dome IP Camera Outdoor,8 MP	K Fixed Dome Network Camera High quality imaging with 8 MP resolution Efficient H.265+ compression technology Clear imaging against strong back light due to 120 dB true WDR technology 1/2" Progressive Scan CMOS Max. 3840 × 2160@20fps 2.8mm mmfixed lens, horizontal FOV: 102°, vertical FOV: 55°, diagonal FOV: 120°, Video Compression: H.265+/H.265/H.264+/H.264/MJPEG Image Enhancement: BLC/3D DNR/ROI/HLC , System Compatibility: ONVIF (Profile S, Profile G), ISAPI , Built-in Micro SD/SDHC/SDXC slot, up to 128 GB Recognition: Face Detection , Power Supply:12 VDC ± 25%, PoE (802.3af Class3) , Day/Night Switch: Day/Night/Auto/Schedule Water and dust resistant (IP67) and vandal proof (IK10) Robust structure design with full metal materials. 1 Year Hardware Warranty Vendor must present Authorization letter from the manufacturer	9
4	PTZ Dome IP Camera Outdoor	8MP Network IR Speed Dome Cameras produce images with a resolution of up to 3,840 x 2,160 pixels. The embedded 2/3" progressive scan CMOS chip supports Digital WDR, and the 36x optical zoom allows for greater detail to be collected over more expansive areas. Minimum Illumination: Color: 0.005 Lux @ (F1.5, AGC ON) B/W: 0.0005 Lux @ (F1.5, AGC ON) 0 Lux with IR Up to 3,840 x 2,160 Resolution H.265+/H.265 Video Compression Main Stream: 50 Hz: 25 fps (4096 × 2160, 3840 × 2160, 3072 × 1728, 2560 × 1440, 2048 × 1536, 1920 × 1080, 1280 × 960, 1280 × 720) Smart IR up to 655 ft (200 m) 24 VAC/Hi-PoE, 60 W 1 Year Hardware Warranty	1

Sr. No.	Description	Specification	Qty
		Vendor must present Authorization letter from the manufacturer	
5	Wireless Devices for Outdoor IP Camera's Connectivity	Better than or equivalent to UBNT Nano station M5 Devices for P2P Connectivity Power Supply (PoE) 24V, 0.5A 24V, 0.5A Max. Power Consumption 5.5W 8W Power MethodPassive PoE (Pairs 4, 5+; 7, 8 Return) Operating Frequency 2412-2462 MHz Gain 10.4-11.2 dBi Networking Interface (2) 10/100 Ethernet Ports Processor Specs Atheros MIPS 24Kc, 400 MHz Memory 32 MB SDRAM, 8 MB Flash Frequency 2.4 GHz Cross-pol Isolation 23 dB Minimum Max. VSWR 1.6:1 Beamwidth 55° (H-pol) / 53° (V-pol) / 27° (Elevation) Polarization Dual Linear Enclosure Outdoor UV Stabilized Plastic Mounting Pole-Mount (Kit Included) Operating Temperature -30 to 75° C (-22 to 167° F) Operating Humidity 5 to 95% Noncondensing Wireless Approvals FCC Part 15.247, IC RS210, CE RoHS Compliance Yes Shock & Vibration ETSI300-019-1.4 1 Year Hardware Warranty Vendor must present Authorization letter from the manufacture	8

Supply & Installation of I.T. Equipment under Revenue Component of PC-I Phase-II

S.No.	Description	Qty	Unit Rate (inclusive of all taxes)	Total Amount (inclusive of all taxes)
	Network Switches			
1	24 Ports 10/100/1000 Mbps with 10G Uplink Ports Power over Ethernet Switches	22		
2	48 Ports 10/100/1000 Mbps with 10G uplink Ports Switches	22		
3	24 Ports 10/100/1000 Mbps with 10G uplink Ports Switches	26		
4	Backbone Switch 10G 48 ports with 40G uplink ports	1		
5	Fiber Modules 10G-LR	24		
6	Fiber Modules 10G-SR	10		
7	Hardware Firewall, IDS, IPS	1		
	Network Passive Components			
1	Network/Server Racks 42U	6		
2	Network Racks 12U	6		
3	Network Racks 6U	14		
4	24 port cat 6 loaded patch panels with cable managers	130		
5	8 Port ODF Panels	12		
6	Fiber patch cord SC-LC	30		
7	UTP CAT 6 Cable rolls	90		
8	Single Mode Fiber Cable	3,000		
	Wireless Access Points & Controller			
1	Wireless Access Points Indoor Controller Integrated (Enterprise grade for 250-500 clients)	60		
2	Wireless LR radio devices	8		
	KFUEIT Datacenter			
1	Air Conditioned 4 Tons Standing Units for Datacenter	1		
2	Cable Trays, Jointers, Droppers, Bends, Datacenter Floor etc.	-		
3	10 KVA online UPS for Datacenter with External Battery Bank	1		
	Servers, Computers, Storage Devices			
1	Servers for Storage Area Network (SAN-50TB Extendable)	1		

S.No.	Description	Qty	Unit Rate (inclusive of all taxes)	Total Amount (inclusive of all taxes)
2	Desktop Computer with LCDs for Faculty/Officers	60		
3	Desktop Computers with LCDs Medium Specs for Employees	70		
4	Laptops for Deans, HOD's, Professors	10		
Printers, Photocopiers, Scanners				
1	Office Printers (All in One)	30		
Voice Over IP Equipment				
1	VOIP Telephone sets	70		
UPS for IT Equipment				
1	UPS 5KVA with External Battery Bank	8		
Air Condition Units for Central Network Rooms in Academic Buildings				
1	Air-Conditioning Units 1.5 Tons for Network Communication Rooms	6		
Video Surveillance Equipment				
1	Bullet IP Camera's Indoor, 4MP	80		
2	Bullet IP Camera's Outdoor, 8MP	20		
3	Dome IP Camera Outdoor,8 MP	9		
4	PTZ Dome IP Camera Outdoor, 12MP	1		
5	Wireless Devices for Outdoor IP Camera's Connectivity	8		

Total Amount in Figure (inclusive of all taxes) _____

Total Amount in Words (Inclusive of all taxes)

Company Evaluation Criteria

Basic Evaluation Criteria

Listed below is checklist to successfully qualify for detailed evaluation. Any shortage in documents ranging from I-X would render disqualification to bidder.

I. List of Previous/Current customers of related equipment, with contact person and telephone/fax numbers.

II. Detailed product information

III. Copy of National Tax Registration Certificate

IV. Copy of Sales Tax Registration Certificate

V. Bank letter of financial standing

VI. An affidavit on Rs. 100/- Stamp Paper that currently they are not black listed or de-barred by any Government/Semi-Government Department to participate in bidding and to supply equipment. Failure to submit such affidavit may lead to disqualification.

VII. Valid Manufacturers authorization letter

VIII. Detailed item specifications corresponding to the BOQ as given at Annex 'A'

IX. Detailed project implementation schedule which includes the delivery of items mentioned in the BOQ

X. Signed and stamped Tender document

Detailed Evaluation Criteria

Bidder must score minimum 60 marks out of 100 for successful qualification.

Sr. No.	Evaluation Criteria	Max. Marks
1	**Work Experience**	20
	Year of establishment of firm / 10 years or above, full marks	
	For firms less than 10 years, marks will be awarded proportionately according to number of years.	
2	**Bank Statement**	20
	Turnover for last one year - 2 times to 50M or more, full marks	
	Turnover less than 100M will be evaluated proportionately	
3	**Project Handling**	20
	Project of similar nature (completed)	
	Project of similar nature (in hand)	
	Each project 5-marks	
	Note: Proof of projects in hand and completed shall be in shape of letter of award and completion certificate respectively.	
4	**After Sales Services**	20
	Affidavit by the firm to provide at least 6-months after sales services	
	Warehouse facility	
5	**Human Resource**	20
	IT / software experts with minimum BS Qualification in relevant field to provide expertise	
	Hardware experts with minimum BS Qualification in relevant field to provide expertise	
	Total	100