

**OFFICE OF THE PROVINCIAL
ELECTION COMMISSIONER,
PUNJAB, LAHORE**



**Request for Proposal
for
Network Infrastructure Upgradation**

RFP # PEC-P/01/2026-N.I.U

18th March, 2026

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RFP Issue Date: 18th March-2026

RFP Issuing Office: Office of the Provincial Election Commissioner
(Punjab), Lahore

RFP Issuing Authority: Provincial Election Commissioner, Punjab
10-Court Street, Lahore

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Closing Date and Time: As per EPADS Schedule

Opening Date and Time: As per EPADS Schedule

This RFP consists of (28) consecutively numbered pages, including title and back pages. Please verify that you have a complete copy.

Prospective Offerors who have downloaded this document from the ECP's websites www.ecp.gov.pk or PPRA website www.ppra.org.pk (EPADS), or who have received this document from the Office of the PEC Punjab, Lahore, and who wish to assure receipt of any changes or additional materials related to this RFP, should immediately contact the procurement officer to get this RFP, amendments (if any) and other communications required by them. Otherwise, it shall be the Firm's responsibility to monitor the ECP website for any change(s)/ addenda.

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1. Executive Summary

The Office of the Provincial Election Commissioner (PEC), Punjab, Lahore intends to upgrade its network infrastructure to ensure secure, reliable, and efficient connectivity for official operations. The existing network environment requires modernization to enhance performance, strengthen cybersecurity, and support effective network management.

For this purpose, the office plans to procure and install modern networking equipment through a competitive tendering process in accordance with applicable PPRA Rules. The scope includes supply, installation, configuration, and commissioning of Next Generation Firewall, Wireless LAN Controller, Wireless Access Points, Layer-III Aggregation Switch, Layer-III LAN Switch, PoE LAN Switches, Fiber and Ethernet Cabling, UPS with power cabling, and 50-inch LED TVs for network monitoring as well as comprehensive on-site training for PEC officers and officials on the administration, maintenance, and security of the newly installed network infrastructure.

2. Introduction

The Election Commission of Pakistan (ECP) came into being on 23 March 1956 when the Second Constituent Assembly succeeded in framing and adopting the first Constitution of the Islamic Republic of Pakistan. The first Chief Election Commissioner (CEC) was appointed on 25 June 1956. The present Constitution that was adopted in 1973 provided for an Election Commission consisting of the Chairman/ Chief Election Commissioner and four Members. The number of Members of the Election Commission was raised to four in 2002. At present Election Commission consists of the Chief Election Commissioner, who is the Chairman of the Commission and four members. The Chairman and the Members are appointed for a term of five years. It is the duty of the Election Commission to organize and conduct the election and to make such arrangements as are necessary to ensure that the election is conducted honestly, justly, fairly and in accordance with the law, and that corrupt practices are guarded against.

3. Statement of Purpose

The scope of the project is to acquire network equipment necessary to enhance network performance, strengthen cybersecurity, and enable efficient monitoring and management

of network operations.

4. General

This document defines the scope and outlines the requirements of the Office of the PEC Punjab, Lahore regarding Network operations. Interested and technically qualified firms are invited to submit proposals in accordance with the specifications and requirements outlined in this Request for Proposal (RFP).

5. Purpose of this Request for Proposal

The purpose of this Request for Proposal (RFP) is to invite sealed proposals from qualified firms for the supply, installation, configuration, and commissioning of network infrastructure equipment along with support services and warranty, for the Office of the Provincial Election Commissioner (PEC), Punjab, Lahore

6. RFP Response – Vendor Presentation and Site visit

All respondents may be required to present their solution as proposed by them in response to this RFP. This will provide them a chance to present their solution and prove their edge over competitors. The Bidders are also required to send their technical team to conduct a complete site survey of Office of the PEC Punjab, Lahore.

7. Bidder Nominated Contact Person

Bidders are also required to state, in their proposals, the name, title, mobile, fixed telephone numbers, facsimile number and e-mail address of the nominated contact person through whom all communications shall be directed until the completion of the Project.

8. Questions Relating to the RFP

Questions/ clarifications regarding the RFP may be submitted to the Director (MIS) of Office of the PEC Punjab, Lahore via email at dirmispunjab@ecp.gov.pk till **26th March, 2026**. Pre-bid session will be held if required at Office of the PEC Punjab, Lahore for which date and time shall be intimated later.

9. Scope of Work

The scope of work includes the supply, installation, configuration, testing, and commissioning of network infrastructure equipment for the Office of the Provincial Election Commissioner (PEC), Punjab, Lahore which includes civil / repair & maintenance work wherever required as well as support services & warranty of the equipment. This includes the deployment of Next Generation Firewall, Wireless LAN Controller, Wireless Access Points, Layer-III Aggregation Switch, Layer-III LAN Switch, PoE LAN Switches, Tape Library Backup Solution, Fiber and Ethernet cabling, UPS with power cabling, and installation of 50-inch LED TVs for network monitoring and provide Operational support, maintenance, Firmware upgradations, patching, Troubleshooting, Fault identification and resolution, trouble tickets management and record keeping, assistance in OEM support, warranty and Return Material Authorization (RMA) whenever required. The selected firm shall also ensure proper integration, operational testing, and handover of a fully functional network system. Additionally, the firm shall provide comprehensive, on-site training to designated officers and officials, along with complete system documentation, including as-built diagrams, configuration backups, and user manuals. Bidder must perform a comprehensive site survey before bid submission at its own cost and submit complete design document as part of technical bids. Design document must include layout of Fiber & ethernet networking, IT cabinets placement, Wi-Fi access points placements and cable routes along with HLD and LLD diagrams.

NETWORK INFRASTRUCTURE UPGRADATION ALONG WITH SUPPLY, INSTALLATION, CONFIGURATION, TESTING, AND COMMISSIONING

S No.	Items	Specifications	Usage	Qty
1	Next Generation Firewall	Minimum 8 1GE Optical & 4 10G SFP Optical interfaces Minimum 5 Gbps Firewall Throughput. Minimum 1 Gbps NGFW Throughput.	Next Generation firewall to work as edge Security gateway for data protection having Next-Generation firewalling features along with OEM Support services	2
2	Wireless LAN Controller	Minimum 4 1GE electrical interfaces & 2 10G SFP Optical interfaces along with compatible SFP modules. Wi-Fi 6 Enabled.	Wireless controller for centralized management of wireless LAN network	2

			along with OEM Support services	
3	Wireless Access Points	Minimum 2x 1GE interfaces PoE Enabled 5 GHz and 2.4 GHz band services required Minimum 500 Mbps throughput	Wi-Fi 6 enabled Wireless Access points with 2.4G & 5G supported along with OEM Support services	30
4	Layer-III Aggregation Switch	At least 48 10G SFPs Ports At least 1 Tb/sec switching capacity Minimum 400 Mpps forwarding capacity	48 Port 10G Layer-III Switch along with OEM Support services	2
5	Layer-III LAN Access Switch	Minimum 24x 1GE interfaces & 4x 10G Optical Interfaces Minimum 120 Gb/sec switching capacity	24 Port GE LAN Switches for connectivity of wired devices along with OEM Support services	16
6	PoE LAN Access Switches	Minimum 08x 1GE PoE Enabled interfaces PoE ports required (Should be fully compatible with proposed Access Points)	8 Port or Higher PoE Enabled LAN switches having all switching layer features to provide PoE power to wireless access points.	10
7	Tape Library Backup Solution	Tape library solution along with hardware, software and tapes having capacity of minimum 100 TB storage	Cold backup solution for old data and data archival at DR site	1
8	Fiber cabling	Fiber cabling for Uplinks of all LAN Switches up to Server room	Branded multi-core fiber cabling	As per Design
9	Ethernet Cabling	Cat 6 or higher STP Ethernet cabling	Complete cabling work along with Ducting, Face plates and patch panels	350 Points Approx
10	UPS Power cabling	UPS based Power backup for all LAN switches and Access points	To ensure that LAN equipment remains UP during power outages	As per Design
11	IT Cabinets	12-U or higher IT Racks	IT Racks for installation of Access Network LAN and PoE Switches	6

12	LED TV 50 Inch	50-inch 4K UHD Google TV with Quad-Core processor, 2GB RAM, 16GB storage. Connectivity: Ethernet, Dual-Band Wi-Fi, Bluetooth 5.0, 3x HDMI, 2x USB. VESA wall-mount compatible. (OS: Android 11/Google TV or later).	For Network Monitoring	4
13	SLA & Professional Services	Complete technical documentation, implementation and support services against provided LAN network infrastructure along with remote and onsite support services for the period of 1 Year	Operational support, maintenance, Firmware upgradations, patching, Troubleshooting, Fault identification and resolution, trouble tickets management and record keeping, assistance in OEM support, warranty and RMS services whenever required	1 Job

- a. Detailed specifications of each item may be seen at **Annexure-A**.
- b. Bidder shall provide professional services for supply, installation, configuration, testing, commissioning, support services, and warranty services of quoted equipment and solution as per technical requirements provided by the Procuring agency.
- c. The End of Life for proposed equipment/ solution must not be announced by the principal within the next five years.
- d. The bidders will not set forth their own terms and conditions contradictory to the terms and conditions given in the documents or PPRA rules. In the event of arbitration as a result of conflict, the terms and conditions given in the tender document or PPRA rules will prevail.

10. Eligible Bidders

Invitation to submission of bids/ proposals is open to all authorized partners of major OEMs (Original Equipment Manufacturers) which are registered with taxation departments of Pakistan as active taxpayers & have registered offices in Pakistan who meet the following minimum conditions:

- a. The bidder must be a legally registered firm/company in Pakistan with valid proof of registration with relevant authorities.
- b. The firm must be registered with the relevant tax authorities and possess valid NTN and Sales Tax Registration.
- c. Any OEM registered with SECP and have registered office in Pakistan will be considered as local OEM Presence.
- d. The bidder must have relevant experience in supply, installation, and configuration of networking equipment and IT infrastructure.
- e. The bidder must possess the required technical capability, qualified personnel, and necessary resources to successfully execute the project in accordance with the specifications mentioned in the tender documents and prevailing industry standards.
- f. The bidder must provide an Authorization Certificate from the OEM of the quoted brand and ensure that the proposed products are approved/marketed in Pakistan and compliant with the Government of Pakistan's applicable rules and procedures.
- g. The bidder must submit all required documents, certificates, and supporting evidence along with the proposal.
- h. The bidder must not have been blacklisted by any Government/Semi-Government organization and shall furnish an undertaking on judicial stamp paper of Rs. 1000/- to this effect.

11. Cost of Tendering

The bidder shall bear all costs associated with the preparation and submission of its bid. The PEC Punjab Office Lahore shall in no case be responsible or liable for these costs, regardless of the conduct or outcome of the tendering process.

12. Price

- a. Prices shall be quoted in Pak Rupees (PKR) both in words and figures. In case of any discrepancy, the price quoted in words shall prevail.
- b. The prices quoted shall be firm, final, and clearly written/typed without any ambiguity or overwriting. Conditional or variable prices shall not be acceptable.
- c. The quoted price shall be inclusive of all applicable taxes and duties, including

GST/SST (where applicable), transportation, delivery, installation, configuration, and all other incidental charges.

- d. No additional or hidden charges shall be admissible at a later stage beyond the quoted price.
- e. The quoted price shall remain valid for a minimum period of 180 days from the date of submission of bids.

13. Bid Security/ Performance Guarantee

- a. Each bidder shall furnish Bid Security/Earnest Money equivalent to 5% of the total estimated cost in the form of a Bank Draft or Pay Order issued by a scheduled bank of Pakistan in the favour of DDO, Office of the Provincial Election Commissioner (PEC), Punjab, Lahore.
- b. The bid shall remain valid for a period of at least 180 days from the date of submission of bids.
- c. Any bid not accompanied by the required Bid Security shall be rejected.
- d. The Bid Security of unsuccessful bidders shall be returned after award of contract to the successful bidder.
- e. The Bid Security of the successful bidder shall be returned after submission of the required Performance Guarantee and signing of the contract agreement.
- f. The Bid security may be forfeited in the following cases:
 - i. If a bidder withdraws its bid during the period of bid validity.
 - ii. If the bidder refuses to accept correction of its bid price.
 - iii. In the case of the successful bidder, If the successful bidder fails to sign the contract agreement. OR fails to furnish the required Performance Guarantee within the stipulated time.
 - iv. If any information provided by the bidder is found to be false or misleading.
 - v. If the bidder fails to fulfill any contractual obligation or comply with the terms and conditions of the tender.
 - vi. If the bidder fails to make delivery within the mentioned timelines.
- g. The successful bidder shall submit a Performance Guarantee equivalent to 5% of the contract price in the form of a Bank Guarantee issued by a scheduled bank of Pakistan within the prescribed time after issuance of the Letter of Acceptance of bid by PEC

Punjab Office Lahore. The Performance Guarantee shall remain valid until completion of the contract and shall be released after fulfillment of all contractual obligations, including the warranty/defect liability period i.e three years from the date of successful commissioning of the equipment's.

14. Bids Submission Procedure

- a. The bids shall be submitted through **EPADS** and **Bid Security/Earnest money** in original to be deposited in PEC Punjab Office Lahore as per the dates mentioned in the RFP.
- b. Bidder will quote rates of all thirteen (13) items.
- c. The bid shall be a single stage two envelopes method, containing separately the technical and the financial proposals as per PPRA rule 36(b).
- d. The procuring committee shall evaluate the technical proposal in the manner prescribed in advance, without reference to the price and shall reject any proposal which does not conform to the specified requirements.
- e. Only those technical proposals will be entertained that will provide complete equipment as mentioned in **Annexure-A**. Incomplete and part submissions will make bidder ineligible for technical evaluation.
- f. During the Technical Evaluation, no amendments in the technical proposal shall be permitted.
- g. After the evaluation and approval of the technical proposals, the procuring committee shall open the financial proposals of the technically accepted bids
- h. The bidders will not set forth their own terms and conditions contradictory to the terms and conditions given in the tender document or as per PPRA Rules. In the event of arbitration as a result of confliction, the terms and conditions given in the tender documents or PPRA Rules shall prevail.
- i. Validity period of the quoted price and bid should not be less than 180 days.

15. Bid Validity

The rates/bids submitted shall remain valid for a period of six (06) months from the date of submission of bids. During the validity period, the successful bidder may be required to supply additional quantities of the contracted items at the accepted bid rates. The procuring agency shall not be under any financial obligation to the bidders in case of any increase or decrease in the

required quantity of the contracted items.

16. Deadline for Submission of Bid

- a. Bid must be submitted through EPADS.

17. Opening of Bid

- a. The PEC Punjab Office Procurement Committee shall open the bids in the presence of the bidders representatives as may be present in the Conference Hall of Office of the PEC Punjab, Lahore.
- b. The Procurement Committee shall resolve any queries or clarifications required by the bidders in accordance with PPRA rules.
- c. The PEC office / competent authority reserves the right to accept or reject any or all bids in accordance with the approved specifications, terms, and conditions of this tender.

18. Clarification/ Corrections of Bids

- a. To assist in the examination, evaluation, and comparison of bids, the Procurement Committee, at its discretion, may ask the bidders for a clarification regarding their bids. The request for clarification from bidders and the response shall be in writing and no change in the price or substance of the bid shall be sought, offered or permitted.
- b. Arithmetical errors will be rectified as follows:-
 - i. If there is a discrepancy between the unit price and total price, the unit price shall prevail, and the total will be corrected accordingly. In case of a discrepancy between words and figures, the amount in words shall prevail. Errors in totaling may also be corrected.
 - ii. If a bidder does not accept the corrected bid, the bid shall be rejected, and the bid security forfeited.

19. Delivery Terms

- a. Bidders must mention the timeline for the completion of project in the technical bid.
- b. Successful firm if fail to complete project within the specified timeline shall be liable to penalties, including forfeiture of the Bid Security/Earnest Money and

possible blacklisting for a period of two (02) years.

20. Training

The successful firm shall provide professional-level training for all major components of the solution to five (05) officers/officials at its own cost. Training must be comprehensive to enable officers/officials to install, configure, commission, manage, maintain, and operate the system. The firm shall make all arrangements at the training venue which includes training manuals, and related logistics at its own expense.

21. Selection Criteria

The Selection Criteria for the successful bidders shall be based on the below mentioned parameters: -

- a. Compliance with requirements and specifications mentioned in “**Annexure- A**”.
- b. Quality, fitness, and suitability of the proposed equipment.
- c. Proven technical and professional expertise of the bidder.
- d. If required, PEC Punjab Office Lahore has the right to inspect similar projects executed by the bidder and/or reject the item(s) on the basis of provided sample.
- e. Bidders should provide detailed information to facilitate technical and financial evaluation.
- f. The financial proposals of technically responsive bids will be opened publicly at a pre-announced time, date and venue.
- g. Financial proposals of technically non-responsive bids will be rejected.
- h. The bidder must demonstrate a minimum company financial worth of PKR 50 million.
- i. The successful bidder shall submit a 5% Performance Guarantee, valid for three years from the date of successful commissioning of the equipment.

22. Important Bidding Documents

Bidders must submit the following with their proposal:

- a. Details of Company Registration and Profile.
- b. Installation, commissioning, configuration and complete design document.
- c. Details of minimum 5 similar projects executed by the bidder firm in public/private sector.

- d. Detailed technical proposal along with project plan, solution write-up and complete technical documentation.
- e. Compliance Certificate against of all specifications of items mentioned in Annexure-A
- f. Manufacturer Authorization letter (MAFs) from the proposed OEM
- g. NTN, GST and other relevant letters, certificates.
- h. Last three-year financial statements duly audited by the Chartered Accountant/ firm.

23. Qualification Criteria

The procuring agency will conduct a detailed evaluation of responsive bids, considering both technical and financial aspects. The bids will be assessed based on the following weighted criteria:

S.No.	Technical Evaluation Criteria	Weight
1.	Certificate of Registration	Mandatory
2.	The firm is not blacklisted by any Govt. Agency	Mandatory
3.	Technical Compliance (Annexure-A)	70%
4.	Financial Proposal	30%
<i>Any bidder obtaining less than 50% in the technical evaluation will be disqualified</i>		

24. Warranty/ Services

- a. The bidder shall warrant that item supplied under the contract are new, unused and incorporates all recent improvements in design and models and of good quality with required specifications. The warranty shall remain valid for a period mentioned in Annex-A against each item. During the warranty period, supplier/ manufacturer is bound to replace defective part at his own cost without any delay.
- b. Details of backup material/ parts/ toolkit may also be provided/ furnished to be supplied free of cost.
- c. Supply of essential parts to be replaced may be assured for five years. Details of parts and cost will be determined as per the market analysis.
- d. Warranty period will start from the date of issuance of PAC from procuring agency.

25. Provisional Acceptance Certificate (PAC) & Final Acceptance Certificate (FAC)

- a. After successful and complete LAN infrastructure equipment installation configurations and testing, the firm must provide all the technical documentation including final configuration files, HLD and LLD diagrams, properly mapped floor plans and cabling layouts, configuration manuals and tutorials of the deployment equipment, step by step configuration guides for the deployed solution and complete solution writeup. Firm may notify to procuring agency when he/ she considers that the works are complete. Upon such notification from the firm, the procuring agency will constitute a team and arrange/ conduct a PAT “Provision Acceptance Test” within 15 days which is approved and vetted by the relevant Committee, and also verify the installed equipment as per the BoQ. After successful conduct of PAT, procuring agency will issue a certificate of successful conduct of PAT based on which procuring agency will issue the PAC in favor of the firm subject to the satisfactory completion of work as per requirement of the contract. Alternatively, the procuring agency will notify the contractor that the work is not fully complete and firm will rectify the discrepancy. A Provisional Acceptance Certificate will be issued accordingly.
- b. Similarly, After successful completion of the warranty and SLA period and upon satisfactory services, a Final Acceptance Test (FAT) will be conducted which is approved and vetted by the relevant Committee. After successful conduct of FAT, procuring agency will issue a certificate of successful conduct of FAT based on which procuring agency will issue the a Final Acceptance Certificate (FAC) in favor of the firm subject to the satisfactory completion of all requirement of the contract. Alternatively, the procuring agency will notify the contractor that the work is not fully complete the and contractor will rectify the discrepancy.

26. Terms of Payment

- a. Payments shall be made by PEC Punjab Office Lahore on defined milestones as per the contract.

b. The Performance Guarantee shall be released after issuance of project completion certificate from PEC Punjab Office Lahore within 90 days of expiry of warranty period/defect liability period.

c. **Cost Break Down Required in below Format**

S. No	Product	Unit Price	Total Price (Including All Applicable Taxes)
1.	Next Generation Firewall		
2.	Wireless LAN Controller		
3.	Wireless Access Points		
4.	Layer-III LAN Aggregation Switch		
5.	Layer-III LAN Access Switch		
6.	PoE LAN Access Switches		
7.	Tape Library Backup Solution		
8.	Fiber Cabling		
9.	Ethernet Cabling		
10.	UPS Power cabling		
11.	IT Cabinets		
12.	LED TVs		
13.	One year SLA & Professional Services		
Total			

27.

Annexure-A

Item # 01: Next Generation Firewall

(Qty= 02 with 03 year support and warranty)

Hardware	<ul style="list-style-type: none">▪ Minimum 8 1GE Optical interfaces.▪ Minimum 2x dedicated WAN electrical interfaces.▪ Minimum 4 10G SFP Optical interfaces along with compatible SFP modules (Fully Loaded).▪ Dedicated management & console ports.▪ Must be compatible with Data Center environmental requirements.▪ HA with Active/ Active and Active/ Backup Modes.▪ Dual AC Power supply.▪ Rack mounting kits, standard power supply, Power cords and necessary accessories for mounting and deployment.
Performance	Minimum 5 Gbps Firewall Throughput Minimum 1 Gbps NGFW Throughput Minimum 1 Gbps Threat Protection Throughput Minimum 2 Gbps IPS Throughput Minimum 1 Million Concurrent Sessions. Minimum 300 Concurrent SSL VPN users. Minimum 1000 Site to Site IPSEC tunnels

<p>Features</p>	<p>User management and authentication. Application layer filtering. IP location identification. Location based policies and controls. Intrusion Prevention System (IPS). Anti-Virus & Anti-Malware. Cloud-Based Security Sandbox. Application Controls. App ID support and identification. Virtual Systems/ Virtual Domain Support. Single Sign-on and AD integration. Site to site/SSL IPSEC VPN. Support for all static and Dynamic routing protocols. Support for Layer-II interfaces, trunk & access mode, VLANs, Sub interfaces and Dot 1Q Encapsulation. SSL decryption. Bandwidth Management. Application Control. Web Filtering. Antispam service.</p>
<p>Reporting</p>	<p>VM based appliance required for logs management with capacity of Minimum 1 GB logs per day Dedicated reporting dashboard Real time Sessions logging Reporting and logging based Source IP, Destination IP, Source Zone, Destination Zone, Destination Port, Application, Location etc. Customized logs generation based on filters Support Export to CSV or PDF format Compatible with standard protocols for NMS, Syslog, API integration etc.</p>

License & Support Requirements	<p>Must be listed as Leaders Gartner magic quadrant in relevant category or equivalent at least once during last 3 years. American brands preferred Must Have OEM Presence in Pakistan for Minimum 5 Year. 03 Year license subscription of IPS/ IDS and Complete NGFW Features. 03 Years license of Log analyzer appliance 03 Year Software Upgrade & 24x7 Technical Support. 03 Year Hardware Warranty Service. Onsite Configuration & Installation.</p>
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Item # 02: Wireless LAN Controller
(Qty= 02 with 03 year support and warranty)

Hardware	<p>Minimum 4 1GE electrical interfaces. Minimum 2 10G SFP Optical interfaces along with compatible SFP modules. Dedicated management & console port. Rack mounted unit. Must be compatible with datacenter environmental requirements. HA with Active/Active and Active/Backup mode supported. AC Power supply. Rack mounting kits, standard power supply, Power cords and necessary accessories for mounting and deployment.</p>
Performance	<p>Management of Minimum 50 wireless access points with 50 AP Licenses Full duplex, half duplex and auto negotiation modes required Flow control, Jumbo frames, broadcast control required. Link aggregation and link load balancing required. Broadcast storm compression required</p>

<p>Features</p>	<p>Wi-Fi 6 Enabled.</p> <p>Support for multiple SSIDs.</p> <p>Support for CAPWAP tunnel.</p> <p>DHCP Server to assign IPs to wireless users.</p> <p>User management based on SSID, APs and profiles.</p> <p>VLAN based SSID Mapping.</p> <p>SSID based Security policies.</p> <p>SSID based QoS polices.</p> <p>Compatible with 802.11 a /b /g /n /ac /ac wave 2/ ax Radio Protocols.</p> <p>Support for WPA/ WPA2/ WPA3 authentication, radius authentication, Portal authentication, 802.1X authentication, MAC based authentication, PSK authentication.</p> <p>Radio Profile Management.</p> <p>Channel Management.</p> <p>Co channel interference detection.</p> <p>Roaming profiles and auto roaming.</p> <p>Compatible with 2.4 G and 5G frequency bands.</p> <p>Best channel selection and fixed channel allocation.</p> <p>AP Power management.</p> <p>Station and traffic-based load balancing.</p> <p>BYOD support along with device identification based on MAC address, user, DHCP option etc.</p>
<p>Reporting</p>	<p>Dedicated reporting dashboard.</p> <p>Real time reporting and logging.</p> <p>Total Connected Users and Session Duration.</p> <p>Bandwidth utilization per Group/ per User/Per SSID/ Per AP.</p> <p>Per user traffic logs with details such as URL, MAC address, Source IP, Destination IP, Timeline.</p> <p>Customized report generation based on filters.</p> <p>Support Export to CSV or PDF format.</p>

	<p>Availability of at least 30 days reporting data and logs on device.</p> <p>Compatible with standard protocols for NMS, Syslog, API integration etc</p>
License & Support Requirements	<p>Must be listed in as Visionary, Challenger or Leaders in recent Gartner magic quadrant in relevant category or equivalent</p> <p>OEM must have 5 similar deployment reference in public sector.</p> <p>03 Year license subscription of complete Features</p> <p>03 Years Licenses for 50 APs required</p> <p>03 Year Software Upgrade & 24x7 Technical Support</p> <p>03 Year Hardware Warranty Service</p> <p>Onsite Configuration & Installation</p>

Item # 03: Wireless Access Points
(Qty= 30 with 01-year support and warranty)

Hardware	<p>Minimum 1x 1GE interfaces (compatible with proposed PoE switches).</p> <p>Robust and environment resistant regarding temperature and humidity.</p> <p>Dedicated web GUI</p> <p>Support SSH, Telnet, FTP, TFTP</p> <p>PoE enabled</p> <p>LED status indicator</p> <p>Additional DC Power adapter (Qty =10)</p> <p>Mounting kit</p>
Performance	<p>5 GHz and 2.4 GHz band services required</p> <p>Minimum 100 Mbps throughput</p> <p>Support for full duplex, half duplex and auto negotiation modes</p> <p>Support for flow control, Jumbo frames, broadcast control</p> <p>Support for Link aggregation and link load balancing</p> <p>Support for IMGP spoofing and IMGP proxy</p>
Features	<p>Wi-Fi 6 enabled (802.11, 802.11ax support)</p> <p>Support for all IEEE 802.11, 802.11ax Wi-Fi standards</p> <p>Support for multiple SSIDs</p> <p>Support for CAPWAP tunnel</p> <p>VLAN based SSID Mapping</p> <p>MIMO Support</p>

	Dynamic frequency selection Beam forming DHCP Client support Compatible with 802.11 a/b/g/n/ac/ac wave 2/ax Radio Protocols Support for WPA/WPA2/WPA3 authentication, radius authentication, Portal authentication, 802.1X authentication, MAC based authentication, PSK authentication. Channel Management Co channel interference detection Best channel selection and fixed channel allocation
License & Support Requirements	Must be listed in as Visionary, Challenger or Leaders in recent Gartner magic quadrant in relevant category or equivalent OEM must have 5 similar deployment reference in public sector. 01 Year license subscription of complete Features 01Year Software Upgrade & 24x7 Technical Support 01 Year Hardware Warranty Service Onsite Configuration & Installation

Item # 04: Layer-III LAN Aggregation Switches
(Qty= 02 with 01 years support and warranty)

Hardware	At least 24 10G SFPs Ports Fully loaded with supported SFP modules AC power supply Dedicated management and console port Support for Web GUI, SSH, Telnet, FTP, TFTP Support HA Compatible with datacenter environmental requirements Rack mounting kit
Performance	At least 1 Tb/sec switching capacity Minimum 100 Mpps forwarding capacity Minimum 1 GB RAM
Features	Complete Layer-III and Layer-II Features IP, MAC and port based VLAN Assignment Multiple Spanning Tree Protocol, Rapid Spanning Tree Protocol, Link aggregation with LACP 802.1Q VLAN Tagging MAC Addressing learning Static and dynamic MAC learning Static routing

	<p>Dynamic Routing (RIP, OSPF,BGP)</p> <p>VTP, STP, RSTP support</p> <p>Inter VLAN routing support</p> <p>Support for ACLs and QoS</p> <p>Support for rate limiting and bandwidth capping</p>
License & Support Requirements	<p>Must be listed in as Visionary, Challenger or Leaders in recent Gartner magic quadrant in relevant category or equivalent</p> <p>01 Year license subscription of complete Features</p> <p>01 Year Software Upgrade & 24x7 Technical Support</p> <p>01 Year Hardware Warranty Service</p> <p>Onsite Configuration & Installation</p>

Item # 05: Layer-III LAN Access Switches
(Qty= 16 with 01 years support and warranty)

Hardware	<p>Minimum 2x 10G Optical Interfaces along with supported 10G SFP Modules</p> <p>Minimum 24x 1GE interfaces</p> <p>AC power supply</p> <p>Dedicated management and console port</p> <p>Support for Web GUI, SSH, Telnet, FTP, TFTP</p> <p>Support HA</p> <p>Rack mounting kit</p>
Performance	<p>Minimum 60 Gb/sec switching capacity</p> <p>Minimum 50 Mpps forwarding capacity</p>
Features	<p>IP, MAC and port based VLAN Assignment</p> <p>MAC Addressing learning</p> <p>Static and dynamic MAC learning</p> <p>VTP, STP and RSTP support</p> <p>Static Routing Support</p> <p>Support for all dynamic routing protocols</p> <p>Support for ACL</p> <p>Support for QoS</p> <p>Support for rate limiting and bandwidth capping</p>
License & Support Requirements	<p>Must be listed in as Visionary or Leaders in recent Gartner magic quadrant in relevant category or equivalent</p> <p>OEM must have 5 similar deployment reference in public sector.</p>

	01 Year license subscription of complete Features 01 Year Software Upgrade & 24x7 Technical Support 01 Year Hardware Warranty Service Onsite Configuration & Installation
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Item # 06: PoE LAN Access Switches
(Qty=10 with 01 years support and warranty)

Hardware	Minimum 08x 1GE PoE Enabled interfaces PoE ports required (Should be fully compatible with proposed Access Points) AC power supply PoE + Support for PoE enabled LAN devices and wireless access points Dedicated management and console port Support for Web GUI, SSH, Telnet, FTP, TFTP Support HA Rack mounting kit
Performance	Minimum 10 Gb/sec switching capacity Minimum 5 Mpps forwarding capacity
Features	IP, MAC and port based VLAN Assignment MAC Addressing learning Static and dynamic MAC learning VTP, STP, RSTP support Static Routing Support Support for all dynamic routing protocols Support for ACL Support for QoS Support for rate limiting and bandwidth capping
License & Support Requirements	Must be listed in as Visionary or Leaders in recent Gartner magic quadrant in relevant category or equivalent OEM must have 5 similar deployment reference in public sector.

	<p>01 Year license subscription of complete Features</p> <p>01 Year Software Upgrade & 24x7 Technical Support</p> <p>01 Year Hardware Warranty Service</p> <p>Onsite Configuration & Installation</p>
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Item # 7: Tape Library Backup Solution
(Qty= 01 with 03 year support and warranty)

Hardware	<p>Enterprise-class modular Tape Library</p> <p>Tape library hardware having dedicated tape slots and library controller</p> <p>Must have 16G or higher FC connectivity support</p>
Performance	<p>Minimum 100 TB overall capacity</p>
Features	<p>Must support LTO-8 or higher tape drives</p> <p>Drives must support hardware encryption</p> <p>Each tape drive must provide minimum 400 MB/s native transfer rate</p> <p>Tape library must support LTO-8 or higher cartridges.</p> <p>Library must support minimum 10 tape drives initially.</p> <p>Must scale to at least 50 plus drives</p> <p>Web-based GUI management interface</p> <p>CLI management</p> <p>SNMP monitoring support</p> <p>Integration with enterprise monitoring systems</p>
License & Support Requirements	<p>03 Year license subscription of complete Features</p> <p>03 Year Software Upgrade & 24x7 Technical Support</p> <p>03 Year Hardware Warranty Service</p> <p>Onsite Configuration & Installation</p>

Item # 8: Fiber Cabling

(Qty= As per design with 01 years support and warranty)

<p>Requirement</p>	<p>Optical fiber-based connectivity required between Server Room 10G aggregation switches and all access layer LAN switches</p> <p>2x Uplinks per switch required for redundancy</p> <p>Hard fiber cables to be installed between ODFs and soft fiber patch cords to be installed from ODF to switches.</p> <p>Supply and installation of media converters/ODFs wherever required</p> <p>Standard cabling management, cable harnessing and machines-based tagging of all cables, ODFs and uplinks</p> <p>Note: Any break & fix during the cabling including but not limited to damage caused to building infrastructure during cabling work the complete repair & maintenance will be responsibility of vendor</p> <p>Actual quantity and BoQ is required to identified during site survey, it is required to propose based on site survey and design:</p>	<p>48x Optical fiber points (Approx.)</p> <p>Bidder has to quote per point price</p>
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Item # 9: Ethernet Cabling
(Qty= 350 Approx with 01 years support and warranty)

Requirement	<p>Good Quality 3M brand or equivalent Cat 6 plus or above Ethernet cables meeting international standards required</p> <p>Standard ethernet cabling, ducting and passive work for Wired LAN and Wireless network equipment along with all accessories.</p> <p>One Ethernet network point means complete cable laying, ducting, face plate installation, patch panel punching and patch cord connectivity between nearest LAN switch to user workstation.</p> <p>Machines based tagging of all equipment, wired and wireless network</p> <p>Approximate requirements are given below, Actual quantity and BoQ of passive work is required to identified during site survey, it is required to propose based on site survey and design:</p> <p>Note: Any break & fix during the cabling including but not limited to damage caused to building infrastructure during cabling work the complete repair & maintenance will be responsibility of vendor</p> <p>Actual quantity and BoQ is required to identified during site survey, it is required to propose based on site survey and design:</p>	<p>20x patch panels and Cable managers</p> <p>350x Ethernet CAT-6 points (Approx.)</p> <p>350x face plates</p> <p>350x 1 meter patch cords</p>
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Item # 10 : UPS Power Cabling

(Qty= As per design with 01 years support and warranty)

Requirement	<p>UPS Based power cabling from Server room Power area till all IT Racks installed in the building so that all the Layer-III LAN switches and PoE Switches are powered on UPS based power source.</p> <p>Good quality copper-based cabling to be done</p> <p>Dedicated breaker for each floor to be installed in Server Room Power area</p>	As per design and site survey
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Item # 11 : IT Cabinets

(Qty= 6 with 01 years support and warranty)

Requirement	<p>12-U or higher Network Cabinets along with built-in FAN, Patch panel and cable manager</p> <p>Must be compatible for installation of Layer-III LAN Switches and PoE Switches</p>	Installation as per design and site survey
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Item # 12 : LED TV

(Qty= 4 with 01 year support and warranty)

Requirement	<p>50-inch 4K UHD Google TV with Quad-Core processor, 2GB RAM, 16GB storage. Connectivity: Ethernet, Dual-Band Wi-Fi, Bluetooth 5.0, 3x HDMI, 2x USB. VESA wall-mount compatible. (OS: Android 11/Google TV or later). (With installation, cabling and testing)</p> <p>1 Years warranty and replacement</p>	04
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