



Tel: +92-51-9250286  
Fax: +92-51-9250368

No. I&P/Upgradation/Network/25-26

**Government of Pakistan**

Ministry of Defence

**PAKISTAN METEOROLOGICAL DEPARTMENT**

(Indent and Purchase Section)

Sector H-8/2, Post Box No. 1214, **Islamabad, Pakistan**

URL: <http://www.pmd.gov.pk/>

## **Tender Document**

Pakistan Meteorological Department invites bids from pre-qualified firms registered with sales tax/ income tax departments and are on Active Tax Payer List (ATL) of FBR for the following services during the financial year 2025-26 under PPRA rules detail is as under.

Sr. No.	Name of Work
01	Network Infrastructure Upgradation at Pakistan Meteorological Department (PMD)

Schedule for collection, submission and opening of proposals is as under:

<b>Collection and submission of documents (free of cost through the concerned website)</b>	Till 22 <sup>nd</sup> of December, 2025 by 10.30 Hrs. through PPRA EPADS.
<b>Time and place of opening of proposals</b>	On 22 <sup>nd</sup> of December, 2025 by 11.00 Hrs. at PMD Headquarters, H-8/2 Islamabad.

The bid received within stipulated date and time, will be opened by the committee on the same day (as mentioned above), in the presence of the bidders or their authorized representatives.

The procuring agency reserves the right to accept or reject any or all proposal(s) in accordance with rule 33 of PPRA Rules 2004 (as amended time to time)

1. Method of Single Stage Two Envelope Bidding Procedure under Rule 36(b) of Public Procurement Rules, 2004 will be used.
2. Proposals, prepared in accordance with the instructions in the TORs, must reach at **Director (I&P), Pakistan Meteorological Department, Pitras Bukhari Road, H-8/2, Islamabad through EPADS** on or before **22/12/2025 till 1030 hrs. PST**. This advertisement is available at [www.eprocure.gov.pk](http://www.eprocure.gov.pk)

**Terms & Conditions:**

1. Bid Security 2% of Total Cost of Proposal, in shape of Bank Draft, Pay Order, in favor of D.G. Met. Services must be attached with the **Financial Proposal**.
2. Bidding Process shall be conducted on Single Stage Two Envelope Bidding Procedure. Initially, technical proposals will be opened and the procuring agency will evaluate the technical proposal. The financial proposal of the technically responsive firms will be opened, only.
3. Competent Authority reserves the right to reject or accept any or all the tenders without assigning any reason under PPRA Rule.
4. The successful bidders will furnish performance guarantee in the shape of CDR/Pay Order/Bank Draft @ 5% of his supply order in favour of D.G. Met. Services till the completion of work/ warranty period.

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***Note: All Firms are directed to quote their Bids online through PPRA E-PADS as well as original Technical Bids must be submitted in hard forms to I&P Section, PMD Headquarters office, Islamabad***

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**(Muhammad Hussam khan)**

*Deputy Chief Administrative Officer*

Pakistan Meteorological Department

H-8/2, Islamabad

Ph. 051-9250286

## Specifications and Conformance

1. This project is critical for PMD, therefore, understand each statement carefully and answer YES only if you are sure and can provide evidence. This document contains verification parameters to assess careful working.
2. Careless working, incorrect statements, misleading statement, partially true statements and false claims shall lead to deduction in marks and reporting to higher management of your firm.
3. Maximum efforts are made to use brand-independent terms. In case any brand-specific term is used to enhance the clarity of the concept, you may quote an equivalent or alternative or an improved technology available in your quoted brand.
4. Bidders must meet or exceed this minimum level of specifications.
5. The bidders must quote all items in one, carefully complete compliance table below. Provide remarks/reference for not quoting any item with solid justifications, failure may result into disqualification.
6. In case of a yes as answer the details section must provide in depth explanation, Blank details shall be considered as non-compliance.

<b>Component - 1: Secure Network Infrastructure</b>			
<b>S/No</b>	<b>Specifications</b>	<b>Fully Compliant</b>	<b>Details</b>
<b>A</b>	<b>Common Specs for Network Infrastructure</b>		
1	All subscriptions must be considered with 3year plans except where explicitly mentioned. Wherever applicable explicitly mention perpetual or no subscription. No will be considered as no subscription.	Yes/ No	
2	Annual subscription must include:	Yes/ No	
a)	Security updates		
b)	Hardware Warranty		
d)	Online account on OEM's portal		
3	OEM must be positioned in Gartner as Leader or challenger in last 3 years. Please provide clear verification documents. Non provision of document will be considered as non-compliance.	Yes/ No	

4	Centralized management capability is required in form VM, supported by Hypervisor/virtualization Proxmox, to manage head office and regional devices from single pane of glass.	Yes/ No	
5	The proposed solution should have centralized logging, reporting, log retention and analytics capabilities for entire WAN infrastructure.	Yes/ No	
6	All features must be perpetual, vendor should provide in tabular format, with clear in written all features compliance against each feature.	Yes/ No	
7	All the relevant clarifications have been made regarding this document before quoting the required items.	Yes/ No	
8	Must be declared as Enterprise solution (Neither SMB, nor SME)	Yes/ No	
9	The solution (hardware + software) launched date must not be earlier than 2024. Provision of proof is mandatory.	Yes/ No	
10	No declaration of End-of-Manufacturing or similar information (EoL) should have been published in technology roadmap, technical documents, news and marketing material or others, till the time of bid submission. If published EoL must be beyond next 5 years.	Yes/ No	
11	Hardware Combo interfaces will be counted as one instead of two.	Yes/ No	
12	The proposed system (Active/Active) shall support seamless link fail-over to improve user experience in case of link-failure or one of the (High availability) HA devices failure.	Yes/ No	
13	Jumbo frames functionality is required with verifiable evidence.	Yes/ No	
14	Detect and control physical link loop with verifiable evidence	Yes/ No	
15	Control flood attack on the ingress interface with verifiable evidence	Yes/ No	
16	Protect from exhausting the resources like CPU, RAM while blocking flood attack/ malfunctioning connected switch, with verifiable evidence.	Yes/ No	
17	All relevant installations and configurations of provided hardware and software solutions are the responsibility of the vendor	Yes/ No	
18	Must support BPDU Guard	Yes/ No	
19	Must support Fast convergence STP protocol	Yes/ No	
20	Must support DHCP Snooping	Yes/ No	

21	Must support Dynamic ARP inspection	Yes/ No	
22	Must support RADIUS authentication support	Yes/ No	
23	Must support Idle timeout	Yes/ No	
24	Must support SNMPv3	Yes/ No	
25	Must support SSHv2	Yes/ No	
26	Rack mounting provision	Yes/ No	
27	Accompanied/ original power cable(s)	Yes/ No	
28	Power supply: AC 220V	Yes/ No	
29	Encryption protocols and Hashing techniques must include AES-256, SHA2 with backward compatibility.	Yes/ No	
30	Online support by the vendor through indigenous ticketing system.	Yes/ No	
31	Warranty and OEM Online Support: Client's own Online Ticketing Support account, Support 24x7, patches and firmware upgrade.	Yes/ No	
<b>A1</b>	<b>Integration and Migration of Existing Setup</b>		
1	Provision of matching SFPs/GLC-T for integration with the existing co-located edge router and servers is responsibility of the vendor, whether required/quoted or not.	Yes/ No	
2	IP Address planning is responsibility of the vendor.	Yes/ No	
3	Ensure readiness of DHCP Server	Yes/ No	
4	Migration of existing servers, PCs, other network devices on the new setup, must be done by the vendor with complete schematic/diagrams in soft and hard form.	Yes/ No	
5	Vendor will make sure to formulate all relevant security and network access policies for optimal use of newly implemented security features of the whole system.		
6	Integration of newly installed network with the existing setup is responsibility of the vender. For optimal use of firewall and switches, vendor will configure and apply all the relevant policies.	Yes/ No	
<b>A2</b>	<b>Training and Certifications</b>		

1	Vendor must provide trainings on each of the solution. Training modules and outline be provided along with the bid document.	Yes/ No	
2	Training must be conducted in PMD head office for all the trainees.	Yes/ No	
3	Training must include with all administrative arrangements except related to the venue.	Yes/ No	
4	Vendor must provide training certificates to all the trainees.	Yes/ No	
5	Vendor must provide post-deployment trainings to the relevant regional team right after the deployment.	Yes/ No	
6	Vendor must provide OEM certified trainings through OEM certified resources.	Yes/ No	
8	1 Week Cyber security Training for IT personnel's	Yes/ No	
<b>A3</b>	<b>Vendor's Support</b>		
1	Provide onsite support for 3 years in case of network breakdown and resolve the issue	Yes/ No	
2	Provide on premises 2x Resident Engineers, one for network maintenance and one for security guidelines implementation of IT Infrastructure, during office hours, for two years.	Yes/ No	
3	Resident Engineers must be graduate in IT/Computer Science and must possess certifications in Networking and Cyber Security, vetted by PMD IT team.	Yes/ No	
4	Assistance and ensure OEM support & warranty in time	Yes/ No	
5	Ensure stability of the network with bug-free latest stable firmware	Yes/ No	
6	Provide support to expedite/ escalate ticket resolution with the OEM	Yes/ No	
<b>B1</b>	<b>Type 1: Firewall (two sets with two subscriptions )</b>		
1	03x 10G SFP+ ports	Yes/ No	
2	7x 1G SFP (1 x MGMT port, 1 X HA port)	Yes/ No	
3	16x 1G Copper	Yes/ No	
4	Firewall Throughput: 25-28Gbps	Yes/ No	
5	Unified Threat Protection (UTP) (IPS, Advanced Malware Protection, Application Control, URL, DNS & Video Filtering Throughput: 2.5 – 2.8 Gbps	Yes/ No	

6	SSL Inspection Throughput: 2.5-2.7 Gbps	Yes/ No	
7	Concurrent Sessions: 2.9 Million	Yes/ No	
8	New sessions per second: 138,000	Yes/ No	
9	SSL VPN Throughput: 1 Gbps	Yes/ No	
10	Local Storage: 480GB	Yes/ No	
11	Dual AC Power Supply	Yes/ No	
12	Accompanied/ original Power cable(s)	Yes/ No	
13	Integrated SD-WAN	Yes/ No	
14	Bandwidth Shaping must be provided	Yes/ No	
15	OSPF must be ready to use.	Yes/ No	
16	IPSec Tunnels: 1800	Yes/ No	
17	IPSEC VPN License: 30	Yes/ No	
18	Dedicated hardware for security processing	Yes/No	
19	Relevant Rack mount tray	Yes/No	
<b>B2</b>	<b>Type 2: Firewall ( two sets with one subscription)</b>		
1	2x 10G SFP+	Yes/ No	
2	6x 1G Copper	Yes/ No	
3	Firewall Throughput: 26Gbps	Yes/ No	
4	Unified Threat Protection (UTP) (IPS, Advanced Malware Protection, Application Control, URL, DNS & Video Filtering Throughput: 2 Gbps	Yes/ No	
5	SSL Inspection Throughput: 2.5 Gbps	Yes/ No	
6	Concurrent Sessions: 2.7 Million	Yes/ No	
7	New sessions per second: 120,000	Yes/ No	
8	SSL VPN Throughput: 1 Gbps	Yes/ No	
9	Local Storage: 100 GB	Yes/ No	
10	Accompanied/ original Power cable(s)	Yes/ No	
11	Integrated SD-WAN	Yes/ No	
12	Bandwidth Shaping must be provided	Yes/ No	
13	OSPF must be ready to use.	Yes/ No	

14	IPSec Tunnels: 180	Yes/ No	
15	Dedicated hardware for security processing	Yes/No	
16	One hardware cold spare, with all necessary configurations, with provision of license switching on primary hardware failure.	Yes/ No	
17	Relevant Rack mount tray	Yes/No	
<b>B3</b>	<b>Type 3: Firewall ( six sets with five subscriptions )</b>		
1	5x 1G Copper ports	Yes/ No	
2	Firewall Throughput: 4 Gbps	Yes/ No	
3	Unified Threat Protection (UTP) (IPS, Advanced Malware Protection, Application Control, URL, DNS & Video Filtering Throughput: 1 Gbps	Yes/ No	
4	SSL Inspection Throughput: 1 Gbps	Yes/ No	
5	Concurrent Sessions: 700000	Yes/ No	
6	New sessions per second: 80,000	Yes/ No	
7	Local Storage: 64 GB	Yes/ No	
8	Original Power cable(s)	Yes/ No	
9	Integrated SD-WAN	Yes/ No	
10	Bandwidth Shaping must be provided	Yes/ No	
11	OSPF must be ready to use.	Yes/ No	
12	IPSec Tunnels: 180	Yes/ No	
13	Dedicated hardware for security processing	Yes/No	
14	One hardware cold spare, with all necessary configurations, with provision of license switching on primary hardware failure.	Yes/No	
15	Relevant Rack mount tray	Yes/No	
<b>C1</b>	<b>Type 1: Switch-24T (two sets with two subscription)</b>		
1	OEM's official literature must declare the quoted switch as its core, distribution, or aggregation switches.	Yes/ No	
2	24 x 5G ports	Yes/ No	
3	4 x 25G SFP28 ports	Yes/ No	
4	Switching Capacity: 300+ Gbps	Yes/ No	



5	Forwarding Capacity: 500+ Mpps	Yes/ No	
6	OSPF must be ready to use.	Yes/ No	
7	Accompanied/ original Power cable(s)	Yes/ No	
8	Dual Power supply	Yes/ No	
9	Smart Fan/temperature control	Yes/No	
<b>C2</b>	<b>Type 2: Switch-48P ( four sets with three subscription)</b>		
1	4x 10G Fiber ports	Yes/ No	
2	48x 1GE Copper ports with (24 Ports PoE+ 24 standard Ethernet)	Yes/ No	
3	Switching Capacity: 175 Gbps	Yes/ No	
4	Forwarding Capacity: 260 Mpps	Yes/ No	
5	Power Budget: 740 W or above	Yes/ No	
6	Accompanied/ original Power cable(s)	Yes/ No	
7	Smart Fan/temperature control	Yes/No	
<b>C3</b>	<b>Type 3: Switch-24P (10 sets with nine subscriptions)</b>		
1	4x 10G Fiber ports	Yes/ No	
2	24x 1GE Copper ports with PoE+	Yes/ No	
3	Switching Capacity: 88 Gbps	Yes/ No	
4	Forwarding Capacity: 170 Mpps	Yes/ No	
5	Power Budget: 370 W or above	Yes/ No	
6	Accompanied/ original Power cable(s)	Yes/ No	
7	Smart Fan/temperature control	Yes/No	
<b>C4</b>	<b>Type 4: Switch-8P ( eleven sets with ten subscriptions)</b>		
1	2x 1G Fiber ports	Yes/ No	
2	8x 1GE Copper ports with PoE+	Yes/ No	
3	Switching Capacity: 20 Gbps	Yes/ No	
4	Forwarding Capacity: 38 Mpps	Yes/ No	
5	Power Budget: 123 W or above	Yes/ No	
6	Accompanied/ original Power cable(s)	Yes/ No	

7	Smart Fan/temperature control	Yes/No	
<b>D1</b>	<b>Type 1: Access Point ( ninety sets with ninety subscriptions )</b>		
1	Wi-Fi-7 IEEE 802.11be, 2 Stream, Three-Radio 2.4GHz + 5GHz + 6GHz	Yes/ No	
2	Internal Antennas, 100/1000/2500/5000 Base-T RJ45, Up to 680 Mbps + 2.8 Gbps + 5.7 Gbps data rate or more	Yes/ No	
3	1x RS-232 RJ45 Serial Port.	Yes/ No	
4	PoE supported, Ceiling/wall mount kit included	Yes/ No	
5	Modulation: BPSK, QPSK, 16/64/256/1024/4096 QAM	Yes/ No	
6	Manageable through a wireless LAN controller function outside Wireless Access Points	Yes/ No	
<b>D2</b>	<b>Type 2: Access Point (twelve sets with twelve subscriptions)</b>		
1	Outdoor	Yes/ No	
2	Tri radio (802.11 b/g/n/ax 2x2 MU MIMO, 802.11 a/n/ac/ax 2x2 MU-MIMO and 1x 802.11 a/b/g/n/ac Wave 2)	Yes/ No	
3	2x 10/100/1000 RJ45 port	Yes/ No	
4	BT/BLE, Console Port (RJ45).	Yes/ No	
5	Pole/wall mount kit	Yes/ No	
6	PoE supported	Yes/ No	
7	Modulation: BPSK, QPSK, QAM64, QAM256, and QAM1024	Yes/ No	
8	Manageable through a wireless LAN controller function outside Wireless Access Points	Yes/ No	
<b>E1</b>	<b>Type 1: Wireless Network Adapters ( twenty five sets)</b>		
1	IEEE 802.11be (Wi-Fi 7) with backward compatibility to 802.11ax/ac	Yes/ No	
2	2.4 GHz + 5 GHz + 6 GHz	Yes/ No	
3	688 Mbps on 2.4 GHz + 2,000 Mbps on 5 GHz + 2,500 Mbps on 6 GHz	Yes/ No	
4	Support for USB 2.0 and 3.x	Yes/ No	
5	Windows 10/11 and Linux compatibility		
6	External Antennas for better signal coverage.	Yes/ No	
<b>E2</b>	<b>Type 2: Wireless Network Adapters ( four hundred sets)</b>		

1	IEEE 802.11ac, dual-band (2.4 GHz + 5 GHz)	Yes/ No	
2	Support for USB 2.0 and 3.x	Yes/ No	
3	400 Mbps on 2.4 GHz + 850 Mbps on 5 GHz	Yes/ No	
4	Supports WEP, WPA/WPA2, WPA-PSK/WPA2-PSK encryption	Yes/ No	
5	Windows 7/10/11 and Linux compatibility	Yes/ No	
6	<p><b>a)</b> Fiber transceivers, short range 100m 25GE SFP28 transceiver module, LC connector ( eight sets)</p> <p><b>b)</b> Fiber transceivers, 10GE SFP+ transceiver module, short range 300m, LC connector (fifty six sets)</p> <p><b>c)</b> Fiber transceiver, 1GE SFP SX transceiver module, short range 500m, LC connector (forty sets)</p>	Yes/ No	
<b>Component - 2: Passive Networking</b>			
<b>S/No</b>	<b>Specifications</b>	<b>Fully Compliant</b>	<b>Reference</b>
<b>A</b>	<p><b>Common Specs for Passive Networking - Copper and Fiber</b></p> <p><b>a)</b> Roll UTP Cat-6 23 AWG, Pure copper without any Copper-Clad Aluminum (CCA) mixing (twenty three sets)</p> <p><b>b)</b> Faceplate with label. Shutter must be present on faceplate or the I/Os ( Two Hundred Thirty eight sets)</p> <p><b>c)</b> RJ-45 Female Connector (I/O) Shutter must be present on faceplate or the I/Os (Two Hundred Thirty eight sets)</p> <p><b>d)</b> Plastic Back box (Two Hundred Thirty eight sets)</p> <p><b>e)</b> Patch Panel 24 Port with I/Os (twenty one sets)</p> <p><b>f)</b> Cable Organizer/ Manager with label (twenty one sets)</p>	Yes/ No	

	<p><b>g) Network Cable Tester – Good Quality (six sets)</b></p> <p><b>h) Network Tools Kit (Hammer, Pliers, Screw Drivers, Cutter, Crimping Tool, cable stripper puncher tool etc) – Good Quality (six sets)</b></p> <p><b>i) 6-inch Patch cords UTP Cat-6 23 AWG, Pure copper without any Copper-Clad Aluminum (CCA) mixing (Five Hundred &amp; four sets)</b></p> <p><b>j) 1 meter Patch cords UTP Cat-6 23 AWG, Pure copper without any Copper-Clad Aluminum (CCA) mixing (Four Hundred &amp; five sets)</b></p> <p><b>k) Wall mounted, 9U switch rack with 02 doors, 02 x Exhaust Fans, Key/Locking Mechanism and built-in PDU. With ample space to place online UPS. (seventeen sets)</b></p> <p><b>l) Wall mounted, Type 2 and 3 FW and switch rack with ample space for online UPS. Patch panel, 02 x Exhaust Fans, Key/Locking Mechanism and built-in PDU (six sets)</b></p> <p><b>m) 12-Core Fiber Armored ( 2550 meters)</b></p> <p><b>n) 12x Optical Fiber Distribution Frame (twenty sets)</b></p> <p><b>o) LC-LC Patch Cord Single Mode 1 meter (fourteen sets)</b></p> <p><b>p) LC-LC Patch Cord Multimode 1 meter (Twenty seven sets)</b></p> <p><b>q) Digging, trenching, chiseling, HD pipe fitting, manholes with metal cover, marker posts, warning tape etc all inclusive (seventeen jobs)</b></p> <p><b>r) Structured Cabling (fiber and copper), ducting, PVC flexible piping, horizontal and vertical cable management, labeling on cables, patch panels and faceplates, inter-rack and intra-rack cable dressing/ management, ties, splicing, testing etc all inclusive ( six jobs)</b></p>		
1	Returnable sample of each quoted item must be provided for evaluation of the bid.	Yes/ No	
2	Structured cabling is mandatory.	Yes/ No	

3	Labeling and tagging is mandatory.	Yes/ No	
4	Fluke Meter test reports must be submitted for the copper cabling upon completion of work.	Yes/ No	
5	OTDR test reports must be submitted for the fiber cabling upon completion of work.	Yes/ No	
6	Calibration certificate not older than 6 months of Fluke meter and OTDR must be provided.	Yes/ No	
7	Digging, trenching, cable laying and backfilling along with manholes is mandatory as per the provided guidelines.	Yes/No	
8	Schematic diagrams of the passive components	Yes/No	
9	Compliance with the rest of the specifications mentioned in BoQ.	Yes/No	
	<b>NOC/SOC FACILITY</b>		
	<ul style="list-style-type: none"> <li>a) Six sets LED Display 65”</li> <li>b) Two sets LED Display 43”</li> <li>c) Three sets Portable system Intel ULTRA 5 for NOC/ SOC display with 6 HDMI outputs + 6 HDMI cables, 32 GB RAM, 1TB SSD, Graphic card.</li> <li>d) Installation</li> </ul>		
	<b>Training, certifications and support</b>		
	<ul style="list-style-type: none"> <li>a) one job Vendor must provide training on each of the solutions</li> <li>b) 6 jobs Vendor must provide post-deployment training to the relevant region-team right after the deployment.</li> <li>c) one job Cyber security Training for IT personnel in HQ.</li> <li>d) two persons in Islamabad Resident Engineer: 2 Years during office hours, (1x Cyber security, 1x Network engineer)</li> </ul>		
<b>Component - 3: Software/Tools and security solutions</b>			
<b>S/No</b>	<b>Tools/Software</b>	<b>Fully Compliant</b>	<b>Reference</b>
<b>A</b>	<b>Essential Software</b>		

1	All relevant installations and configurations of provided software solutions are the responsibility of the vendor	Yes/No	
2	Open source Asset Management System: Vendor to manage all the assets/inventory during project through this software, Provide training and handover to the PMD on completion.	Yes/ No	
3	Microsoft Office 365 (Licenses and activation on the designated devices): 25 (3 year subscription)	Yes/ No	
4	Microsoft Windows 11 Professional (Licenses and Installation on designated devices) : 100 with lifetime license	Yes/ No	
<b>B</b>	<b>SIEM (Security information and Event Management)- 50 devices, 1 Year subscription</b>		
1	The SIEM solution shall provide centralized log collection, analysis, correlation, and visualization of security events from all FW, network, server, application, and endpoint devices.	Yes/ No	
2	Integrate with global and local threat intelligence feeds and Provides Real-Time Threat Detection	Yes/ No	
3	Provide rule-based and behavior-based event correlation for multi-stage attack detection.	Yes/ No	
4	ISO 27001, GDPR, PCI-DSS compliance reports	Yes/ No	
5	Performs file integrity checks	Yes/ No	
6	Generate scheduled and on-demand compliance, audit, and operational reports (ISO 27001, GDPR, etc.).	Yes/ No	
7	Compatible with major security and IT systems	Yes/ No	
8	Provides searchable event history and detailed logs to trace incidents to support investigations	Yes/ No	
9	Security and event logs from servers, firewalls, applications, and endpoints into one centralized platform	Yes/ No	
10	Role based access control	Yes/ No	
11	OEM Support team available in Islamabad	Yes/ No	
12	The proposed SIEM solution must also have international deployments other than Pakistan.	Yes/ No	
13	1 Year subscription for 50 devices.	Yes/ No	
<b>C</b>	<b>Network Monitoring Solution (NMS)- 130 devices</b>		

1	Enterprise-grade, scalable, and secure network monitoring: for 120 devices,	Yes/ No	
2	supports cloud/on-premises/hybrid deployments, with proxy-based remote monitoring	Yes/ No	
3	ISO 27001, ISO 27701, GDPR-ready.	Yes/ No	
4	REST API, ticketing systems	Yes/ No	
5	Endpoint visibility (CPU, memory, storage, OS version, patch status via custom scripts)	Yes/ No	
6	Real-time monitoring of servers, endpoints, network devices, cloud resources, databases, and applications	Yes/ No	
7	Flow-based analysis (NetFlow) for bandwidth usage and traffic patterns	Yes/ No	
8	Threshold-based alerts	Yes/ No	
9	Log collection from monitored devices for operational insights.	Yes/ No	
10	Compliance reporting aligned with IT operational standards.	Yes/ No	
11	End-to-end insights into network, server, and application performance.	Yes/ No	
12	Real-time dashboards, network topology maps, and heat maps.	Yes/ No	
13	Mobile application for on-the-go management	Yes/ No	
14	Role-Based Access Control (RBAC), Multi-Factor Authentication (MFA), and TLS encryption.	Yes/ No	
<b>D</b>	<b>Extended detection and response (XDR) solution-150 devices, 1 Year subscription.</b> a) XDR solution with 1 Year subscription VMs: 40, PCs: 110	Yes/ No	
<b>D2</b>	<b>Allied components</b>		
	a) Asset Management System, Open source (one job)  b) Microsoft Office 365 (Licenses and activation on the designated devices): (3 year subscription) ( twenty five sets )  c) Microsoft Windows 11 Professional (Licenses and Installation on designated	Yes/ No	

	<p>devices) (hundred sets)</p> <p>d) central management solution ( one set with subscription)</p> <p>e) central logging solution ( one set)</p> <p>f) wireless LAN control solution ( six sets)</p>		
1	On premises.	Yes/No	
2	Must be capable of alerts aggregation	Yes/No	
3	Must support integration with threat intelligence portal, which contains and displays information about the reputation of files and URLs	Yes/No	
4	The solution has endpoint related functionality available like File, web and mail threat protection, anti-virus, network protection, AMSI, exploit prevention, remediation, behavior detection, Host intrusion prevention system, Firewall, web, device and application controls, cloud discovery, along with Mobile device management	Yes/ No	
5	Must have vulnerability assessment, patch management, remote data wipe, software/hardware inventory along with file level, folder level and OS level encryption	Yes/ No	
6	EDR agent must have integration with Endpoint Protection application. EDR and Endpoint Protection solutions must have unified console for administrators and analysts	Yes/ No	
7	The suggested solution must be capable of alerts aggregation	Yes/ No	
8	The suggested solution must support import of third-party IoC in compatible format for network scanning	Yes/ No	
<b>E</b>	<b>Network Access Control (NAC)- Open Source</b> Network access control (NAC), open source (one job)		
<b>1</b>	Open-source and modular	Yes/No	
2	Supports 802.1X, MAC Authentication Bypass (MAB), and captive portal authentication for wired, wireless, and VPN users	Yes/No	
3	Seamlessly integrates with RADIUS, LDAP, Active Directory, SNMP, DHCP, and firewalls for centralized identity and access management	Yes/No	
4	Enables dynamic VLAN assignment, role-based access control, and device	Yes/No	



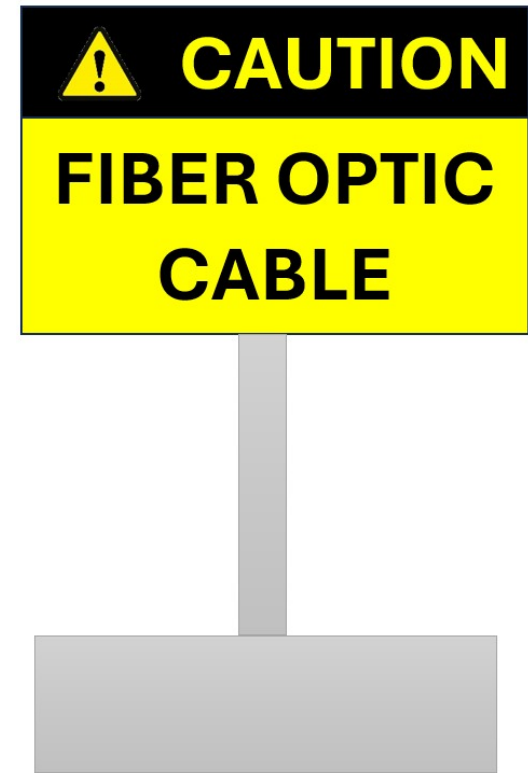
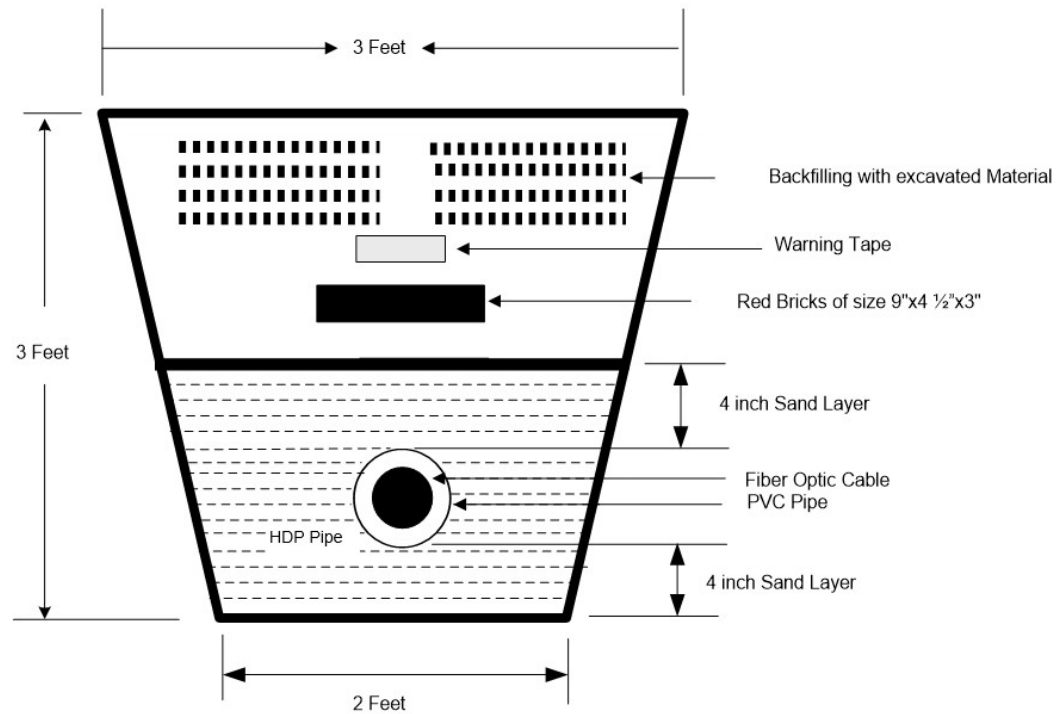
	quarantine or isolation based on compliance status		
5	Provides an intuitive web GUI for configuration, real-time monitoring, audit logs, and compliance reporting.	Yes/No	
6	Automatically detects, profiles, and enforces compliance on endpoints	Yes/ No	

#### Component - 4: Environmental items and power backup

S/No	Item	Fully Compliant	Reference
<b>A</b>	<b>Power backup</b>		
1	All relevant installations and configurations of provided solutions are the responsibility of the vendor	Yes/No	
2	True sine wave Online backup with 0 minutes on full load	Yes/No	
3	Six sets true sine wave Online backup with 30 minutes on full load	Yes/No	
4	Four sets true sine wave Online backup with 30 minutes on full load	Yes/ No	
<b>A</b>	<b>Environmental</b>		
1	Two sets Ultrasonic Rodent Repellent – Good Quality	Yes/No	
2	Two sets Water Leakage Sensor with deployment	Yes/No	
3	Two sets AC sequencer for 2x comfort cooling units	Yes/No	
4	Two sets Rack mount Static Transfer Switch (STS) for Switches and Firewalls	Yes/No	
5	Two sets Humidifier/ Dehumidifier for datacenter	Yes/No	
6	Two sets Temperature and humidity sensors with LED display.	Yes/No	
7	Nine sets Fire extinguishers (CO2)	Yes/No	
8	Twenty sets Fire Extinguishers (Fireball)	Yes/No	
9	Nine sets Fire/smoke Alarm systems	Yes/No	
10	Two Earthing	Yes/No	
11	Seven sets RFID Scanner + Door lock with deployment	Yes/No	

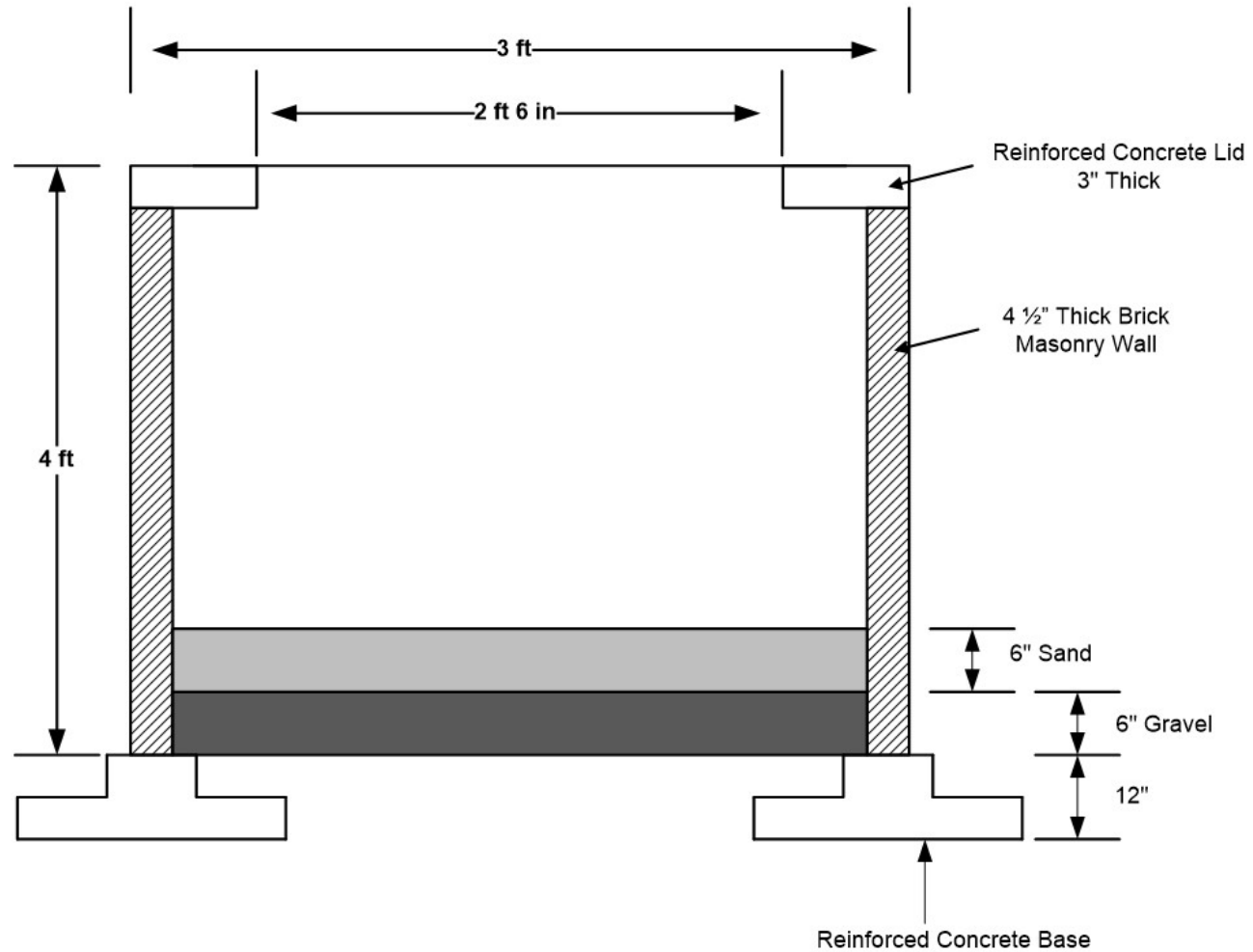
The fiber optic cable shall be laid in a properly built fiber optics trench, Mainhole and concrete route marker as shown in following figures:

### Drawing for Fiber Optics Trench



Marker Post Sample

**Drawing For Manhole**  
**Size: 3' x 3' x 4'**



### **Evaluation Criteria**

<b>S/ No.</b>	<b>Evaluation Parameters</b>	<b>Type</b>	<b>Marks</b>	<b>Details</b>
1.	3rd Party Published Comparative Analysis Reports for FW	Details	10	Gartner ranking as per last 3 years record 10 = Leader 05 = challenger 0 = other
2.	Global presence of the OEM	Details	05	1 mark for (OEM office in) for each of the following region: Documented evidence of the clientage is must. <ul style="list-style-type: none"><li>• Asia</li><li>• Europe</li><li>• Americas</li><li>• Africa</li><li>• Australia</li></ul>
3.	Level of partnership with Firewall O.E.M	Details	15	15 = Expert/tier 1 level with leader O.E.M 10 = Advance/tier 2 level with leader O.E.M 07 = Expert/ tier 1 level with challenger O.E.M 05 = Advance/tier2 level with challenger O.E.M 00 = Others below
4.	Official online and landline Ticket based solution with defined escalation mechanism. Documented evidence is mandatory.	Details	05	05 = available 00 = non availability

S/ No.	Evaluation Parameters	Type	Marks	Details
5.	Relative quality of the soft solutions & Technical design. Irrelevant qualification will be considered as NIL.	Details	15	<ol style="list-style-type: none"> <li>1. Robust solution, with clear details and implementation strategy, for SIEM, NMS, EDR and NAC</li> <li>2. Documentation quality and clear timelines</li> <li>3. Allocation of adequate number of Network/cyber security certified human resources to execute the project (at least 3 resource persons for Networks and 2 for Cyber security). Copies of company payrolls and reflection in bank statement.</li> </ol> <p>These points shall help in raising quality of the high availability solution: detailed design architecture, physical and logical flow, multi-datacenter &amp; multi-ISP, cyber security component, decision of Access layer switch for Layer-3 or Layer-2 mode)</p> <p>15 = for complete compliance as required  5 = partial but more than 50% compliance  0 = partial but below 50% compliance</p>
6.	Hardware solution (Network/security appliances) with best integration compatibility.	Details	25	<p>Gartner Magic Firewall ranking as per last 5 years record  Mention details.  25 = for complete one OEM solution with firewall of leader level  20= for mix bag OEM solution with firewall of leader level  15 = for complete one OEM with challenger level firewall solution  05 = mix bag OEM solution but fire wall of challenger level</p>

S/ No.	Evaluation Parameters	Type	Marks	Details
				0 = for below challenger solution in firewall
7.	Bidder's presence for Technical Support Services at all sites. Only valid address with contact info shall be considered for each office. Documented evidence required.	Details	10	Office in Islamabad/Rawalpindi = 2 Office in Karachi = 2 Office in Lahore = 2 Office in Gilgit = 2 Office in Peshawar=1 Office in Quetta =1
8.	Bidder's active presence in specifically Network infrastructure design and installation business in Pakistan. I.T business other than enterprise level firewall-based network design configuration and implementation shall be considered as non-specific.	Details	05	Company Established (no of years) 05 for >= 5 years detail specific in field 03 for >3 and <5 years details specific in field 01 = Less than 3 years details specific in field 0 = non-specific business  Specify first Network project.
9.	Proven record of passive work installation. Documented evidence of on-board relevant resources. Clear plan of the passive equipment installation including digging, trench, cabling and labeling. State clearly in case passive work is being outsourced (if so, complete profile of the third party along with same legal documents as acquired from the vendor), along with the defined timeline.	Yes/No	05	5= Vendors own capabilities 3= Carried through third party 0= non-compliance
10.	Detailed Project Implementation Plan along with Gantt chart and time lines. Complete plan as per the guidelines provided in project scope, with total duration of the project maximum to 16 weeks. Consider execution of milestones in parallel where applicable.	Yes/ No	05	5 = compliance within time limits. 0 = non-compliance of the timelines
	<b>Technical Marks Weightage (70%)</b>		-	
	<b>Total Technical Marks</b>		<b>Formula = weightage x obtained marks/ 100</b>	
	<b>Minimum Technical Qualification Marks</b>		<b>50</b>	

## **Scope of Work**

### **Introduction:**

PMD intends to upgrade its existing network infrastructure with the latest design and equipment as per best practices and standards. It shall be a turn-key solution (including the software, hardware, licenses, support, trainings and environmental components) commissioned, integrated and fully operational in head office, Islamabad and regional offices in Lahore, Karachi, Peshawar, Quetta and Gilgit. The Network design, high availability, flexibility, performance and security of the network shall be given significant importance.

### **Goals:**

Following are the goals of this upgrade:

- a. High Performance Backbone
- b. Robustness and Stability
- c. Security of the network devices and segments
- d. Logging, Accounting and Health monitoring
- e. Fault-tolerant, Auto-healing and fast convergent
- f. Ease of management and operations
- g. Multiple, virtual and protected networks
- h. Profiling and Assured services
- i. Minimum hops between client and the service
- j. Minimum network traffic processing delays
- k. Deployment of Passive and active infrastructure.
- l. Connect regional sites with HQ through SD-WAN
- m. Migration of existing system on new infrastructure.
- n. Implement all the relevant configurations and policies in firewalls/switches for optimal usage and to comply with the security guidelines and best practices.
- o. Upgrade windows licenses and Office 365 deployments.
- p. Deployment of NMS, EDR, SIEM and NAC.
- q. Deployment and use of Asset Management system
- r. Centralized network and security monitoring through NOC/SOC.

### **Deployment Details:**

General guidelines are mentioned below; however, details may be asked if necessary to clarify the certain details.

- a. Propose design of the network in case of any recommendations.
- b. Installation and configuration of hardware.
- c. Making the hardware operational and integrated to the other network segments as per provided details aligned with existing setup.
- d. Configuration and customization to commission a highly available and reliable network infrastructure with regional connectivity through SD-WAN.
- e. Configuring dashboards, logging and reporting in the provided NMS.
- f. Commissioning as per proposed solution in the presentations and provided design as per the specifications.

## **Scope of Compliance and Implementation**

The vendor shall strictly adhere to the technical specifications provided by PMD to ensure full compliance. However, the vendor may propose optional features or additional components as part of its recommended design or solution. In such cases, the vendor must clearly specify the quantity, unit price, and technical justification for each proposed item.

Additional components will be evaluated separately and may only be procured if found to be critically essential for achieving the required functionality. PMD reserves the right to add, remove, or adjust quantities of any component or remove the whole component altogether as deemed necessary.

### **High Availability (HA) Deployment**

The firewalls and switches planned for High Availability (HA) deployment at the PMD Headquarters shall be installed in separate buildings to ensure redundancy and resilience. The primary device shall be located in one building and the secondary device in the other. Both buildings, and consequently both devices, shall be interconnected using optical fiber connectivity to ensure seamless failover and high availability.

### **Documentation and Deliverables**

The supplier shall prepare and deliver the following documentation to PMD upon project completion, chapter wise as mentioned below:

1. Technical and user manuals for all deployed systems.
2. Complete network architecture diagrams for all sites.
3. Detailed installation and configuration guides, including step-by-step procedures, for each component.
4. Comprehensive migration documentation detailing the transition from the existing infrastructure to the new environment.
5. PAT document.

### **Resident Engineer Support**

Two resident engineers shall be deployed for a period of two (2) years to manage, maintain, and monitor the network and cyber-security infrastructure during official working hours. The engineers shall ensure optimal performance, uptime, and secure operation of all deployed systems.

### **Testing and Acceptance**

The complete deployment shall undergo comprehensive testing based on detailed test plans developed by the vendor. All test cases, results, and validations shall be documented and submitted to PMD prior to project completion. Final acceptance will be subject to successful testing and approval by PMD, as per agreed PAT.



## **Project Implementation Plan**

The vendor shall provide a comprehensive implementation plan with clearly defined timelines, supported by Gantt charts. It is the vendor's responsibility to ensure centralized visibility of project progress through a platform accessible to authorized personnel. The timeline must clearly indicate the start and completion dates for each milestone. Project progress will be reviewed and discussed during biweekly progress meetings.

A general list of key milestones is provided below; however, the vendor may adjust or align these milestones in accordance with their proposed implementation plan.

1. Civil work Repairs (All sites)
2. Passive work (Fiber +copper) (all sites)
3. Setup and configuration of Asset Management system (HQ office)
4. deployments of racks (all sites)
5. deployments of online Power backups (all sites)
6. deployment of USB Wireless network adapters (all sites)
7. installation and activation of Microsoft office 365(all sites)
8. Installation and activation of windows 11 Pro (all sites)
9. deployment of firewalls (All sites)
10. deployment of switches (all sites)
11. deployment of WAPs (all sites)
12. installation of environmental components (all sites)
13. Activation of subscriptions on Firewalls, switches and WAPs. (all sites)
14. Installation and configuration of EDR(HQ) and EDR agents (end points) (all sites)
15. SD-WAN Connectivity of all sites with HQ office. (all sites)
16. Migration of existing system, Policies, rules, services, configurations, etc to new system (all sites)
17. Demonstrations
18. Installation and configurations of NAC
19. On boarding of all existing end points on new system. (all sites)
20. Installation and configurations of NMS (all sites)
21. Installation and configurations of SIEM (all sites)
22. Installation of NOC/SOC facility.
23. Trainings
24. Deployment of resident engineers
25. PAT
26. Dismantling of existing system along with reconditioning of the facility.

**Terms & Conditions:**

1. **Earnest money/ Bid Security @ 2%** for each category in the shape of Bank Draft/Pay order in favour of D.G Met. Services must be submitted with the offer.
2. Bidders must submit copies of their registration of Sales Tax and Income Tax.
3. Eligibility Criteria: Participating firm must be, fully experienced and registered with Govt. Authorities (FBR etc.).
4. Bidder must submit on stamp paper
  - (i) That there are no pending liabilities in respect of the bidder/ firm against any government/semi-government department/ organization
  - (ii) That the bidder has not been black listed by any government/ semi-government department/ organization. Legal documents can be asked by the buyer, if required.
5. **BID VALIDITY:** Bids shall remain valid for a period of at least **120 days** after the date of opening of financial proposals.

In exceptional circumstances, prior to expiry of the original bid validity period, the Buyer may request that the bidders extend the period of validity for a specified additional period. The request and the responses there to shall be made in writing or by electronic mode. A bidder will not be required or permitted to modify its bid, but will be required to extend the validity of its bid security for the period of the extension.
6. All bidders are advised to comply strictly with the document specifications/ terms & conditions and no deviation shall be allowed.
7. **Prices must be quoted in Pak Rupees only including all applicable Govt. of Pakistan taxes & GST.**
8. **The successful bidders will furnish performance guarantee in the shape of CDR/Pay Order/Bank Draft @ 5% of his supply order in favour of D.G. Met. Services.**
9. The last date for the submission of tender is 22<sup>nd</sup> December, 2025 at 10.30 Hours PST and will be opened on the same day at 1100 hours PST in the presence of bidders or their representatives.
10. The quantity of the items can be increased/ decreased.
11. The Procuring Agency reserves the right to cancel the bidding process at any stage without assigning any reason.
12. Taxes will be deducted as per Government rules.
13. The payment against supply of items will be made through crossed cheque(s) in Pak Rupees by the Department to the supplier after satisfactory completion of work and technical report submitted by the Technical Committee.
14. Any bid found in deviation / violation / without earnest money would liable to be rejected.
15. Bidding documents having detailed specifications are available free of cost at the website [www.pmd.gov.pk](http://www.pmd.gov.pk) PPRA EPADS [www.eprocure.gov.pk](http://www.eprocure.gov.pk) as well as [www.ppra.org.pk](http://www.ppra.org.pk)