



**Guru Angad Dev
Veterinary and Animal Sciences University, Ludhiana**

Corrigendum No. PC/2022-23/ 1876 Dated 06-03-23

CORRIGENDUM

Updated Terms and Conditions

The technical specifications for the purchase of **Indoor Wireless Access Point, Network Switch of 24x10/100/1000 PoE Ports with 4 Gigabit SFP Ports, Next-Generation Firewall with the Controller of Access Points and Installation, Testing & Configuration Charges of Access Points** e-tender 2023_DAH_97686_1 (Reference No Retender/PC/2022-23/1855 dated 27/02/2023) Published on www.eproc.punjab.gov.in under organisation "Department of Animal Husbandry" and division 'Purchase Cell' is hereby **Revised** and given below. The interested firms/bidders are advised to submit bid(s) keeping in view the revised terms and conditions. The other terms and conditions shall remain unchanged.

Note:- Any further corrigendum to the tender notice shall be published on the above website only.

**Assistant Store Officer(Purchase)
Purchase Cell, O/o Comptroller**

Detail of Equipments with specifications:

1	Indoor Wireless Access Point	30pc
2	Network Switch of 24 x 10/100/1000 PoE Ports with 4 Gigabit SFP Ports	3pc
3	Next-Generation Firewall with the Controller of Access Points	1pc
4	Installation, Testing & Configuration Charges of Access Points	1

Technical Specifications of Indoor Wireless Access Point (Wi-Fi 6)

Controlled based Wireless Access Point of make Cisco/Fortinet/Aruba	
S. No.	Specifications of the access point
1.	The access point should have a dual radio and should be able to support devices on 2.4GHz and 5 GHz simultaneously.
2.	Access point should support 2x2 MU-MIMO Tri-Radio 2.4 GHz + 5 GHz and scanning
3.	Should support radio1 as 2.4 GHz b/g/n/ax and radio2 as 5 GHz a/n/ac/ax
4.	Should have at least 3 Internal + 1 BLE Internal Antennas
5.	Should have minimum 2x 10/100/1000 RJ45 PoE port Interface and 1 USB port
6.	Should support 20/40/80 MHz channel band
7.	Should support 16 Simultaneous SSIDs
8.	Should be centrally managed through the wireless controller
9.	Should support L2 and L3 wireless controller discovery
10.	Should support Peak antenna gain of minimum 4.5 dBi for 2.4 GHz, 5.5 dBi for 5 GHz
11.	Should support Mesh for Wireless backhaul connectivity
12.	The access Point should support throughput in Radio 1: more than 550 Mbps and Radio 2: more than 1.2 Gbps
13.	Should support minimum of 23dbm of transmit power and should follow the local regulatory Norms.
14.	Should support auto-selection of RF channel and transmit power
15.	Must support the following powering on options: <ul style="list-style-type: none"> • 802.3af/802.3at • Enhanced PoE • Power Injector
16.	Access point should have the maximum Power Consumption of 17W
17.	POE adaptors must be quoted with AP
18.	Access point must have following wireless monitoring capabilities: <ul style="list-style-type: none"> a) Frequencies scanned for 2.4 and 5 GHz b) Background scan with client access on 2.4 and 5 GHz c) Full-time scan as a dedicated monitor d) Should support Spectrum analysis on both the radios e) Full-time scan with client access on 5G GHz f) Should support one radio for air monitor and another radio for client access
19.	An access point must include standard OEM-provided mounting kit for ceiling and roof-top.
20.	Should support User/Device Authentication types: WPA™, WPA2™, and WPA3™ with 802.1x or Pre-shared key, WEP, Web Captive Portal, MAC blacklist & allow-list
21.	Should support telnet and/or SSH login to APs directly for troubleshooting flexibility.
22.	Should support self-healing, self-optimizing local mesh extending network availability to areas without an Ethernet infrastructure. Include if any license require
23.	The Access Point should support IEEE 802.11a, 802.11b, 802.11d, 802.11e, 802.11g, 802.11h, 802.11i, 802.11j, 802.11k, 802.11n, 802.11r, 802.11v, 802.11w, 802.11ac, 802.11ax, 802.11Q, 802.11X, 802.3ad, 802.3af, 802.3at, 802.3az, 802.3bz
24.	Must have compliance against the following industry standards: EAP-TLS, EAP-TTLS/MSCHAPv2, PEAPv0/EAPMSCHAPv2, PEAPv1/EAP-GTC, EAP-SIM, EAP-AKA, EAP-FAST
25.	Must be Wi-Fi Alliance Certified
26.	Access Points must support Hardware -based DTLS encryption on CAPWAP Standard

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27.	Should have physical security lock (such as Kensington lock)
28.	Operating Temperature - 0 – 50°C
29.	Low Voltage Directive, RoHS complaint
30.	Support of AP must have Limited Life Time Warranty

Network Switch 24 port POE with 4 SFP Port of make Cisco/Fortinet/Aruba	
S. No.	Specifications
1.	Switch must be enterprise grade 19" Rack Mountable 1 RU form-factor with internal power supply
2.	Should be L2 managed 24 10/100/1000 PoE+ ports with 195W power budget and additional 4 nos. SFP uplinks ports ready from day 1
3.	Switch shall have minimum 56 Gbps of switching fabric and 41 Mpps of forwarding rate.
4.	Must have minimum 512MB DRAM and minimum 256MB Flash
5.	Should support management CLI and web UI over SNMP, RJ-45, Bluetooth or USB console access
6.	Switch should support CLI & SNMP to manage the device remotely
7.	Switch should support 802.1X features to control access to the network, including flexible authentication.
8.	Security with 802.1X support for connected devices, Switched Port Analyzer (SPAN), and Bridge Protocol Data Unit (BPDU) Guard
9.	Shall have minimum 16K MAC table and support 4K VLANs simultaneously
10.	Switch should support DHCP, Auto Negotiation, LACP, UDLD, VTP, TFTP, SNTP, Per-port broadcast, multicast, Static routing, Layer 2 trace route and unicast storm control.
11.	Should support the power-saving features such as IEEE 802.3az, automatic power shutoff on ports when a link is down
12.	Shall have minimum IPv4 and IPv6 multicast routes and 2K IGMP groups
13.	Switch should have fanless design, to reduces power consumption, increases reliability, and provides quieter operation
14.	Switch will support 9K bytes Jumbo Ethernet frame and support 2K bytes MTU packet from day 1
15.	Switch should support MTBF of 698,220 hours
16.	Should support IEEE Standards of Ethernet: IEEE 802.1D, 802.1s, 802.1w, 802.1x, 802.3ad, 802.3x, 802.1p, 802.1Q, 802.3, 802.3u, 802.3ab
17.	Should have minimum support for 8 MSTP & 126 RPTVST and instances
18.	Shall have support for up to 1,024 rules
19.	Switch should support Layer 3 IPv4 routing up to 990 static routes and up to 128 IP interfaces
20.	Shall have 802.1p class of service, marking and classification & eight hardware queues.
21.	Should support STP Bridge Protocol Data Unit (BPDU) Guard to protect the network from invalid configuration
22.	Switch should have the functionality to setup through OEM mobile app for managing the switch
23.	Switch should support Weighted Round Robin (WRR) scheduling and Weighted Tail Drop (WTD) congestion avoidance.
24.	Switch should be capable of hardware stacking minimum up to four switches with maximum 200 ports. Must have hardware failover system and manageability via a single IP address.
25.	Must have the capabilities to enable automatic configuration of switch ports as devices connect to the switch for the device type.
26.	Switch should support SSH v1 and v2 in place of telnet for security concern
27.	Switch should support ND inspection, RA guard, DHCPv6 guard, and neighbour binding integrity check
28.	Switch should support dynamic Address Resolution Protocol (ARP) inspection, IP Source Guard, and Dynamic Host Configuration Protocol (DHCP) snooping
29.	Switch should support management features like SNMPv2, SNTP, RADIUS and TACACS+.
30.	Switch should support QoS through Differentiated Services Code Point (DSCP) mapping and filtering.
31.	Switch should support enhanced QoS like, egress queues, Ingress policing to, QoS through Differentiated Services Code Point (DSCP) mapping and filtering, QoS through traffic classification, Trust boundary, AutoQoS, Shaped Round Robin (SRR) scheduling and Weighted Tail Drop (WTD)

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	congestion avoidance, 802.1p Class of Service (CoS),
32.	Switch should have Web browser upgrade (HTTP/HTTPS) and TFTP and upgrade over SCP running over SSH Dual images for resilient firmware upgrades
33.	Industry Standard : UL (UL 62368), CSA (CSA 22.2), CE mark, FCC Part 15 (CFR 47) Class A
34.	OEM of the switch should have Technical Assistance Centre (TAC) on 24 x 7 basis
35.	Switch should Operating temperature of -5° to 50°C

Next-Generation Firewall with Controller of Access Points of make Cisco/Fortinet/Aruba	
S. No.	Specifications
1.	Wireless controller should have 4x10G SFP+ port and 4x1G SFP slot from day one
2.	2 Gigabit Ethernet RJ45 Ports for HA/Management, 16 x GE RJ45 Ports, 1 USB Port and 1 console Port, on-board storage with minimum 480GB SSD or above
3.	NGFW throughput 3.5Gbps, CAPWAP throughput 20GBps, support Trusted Platform Module
4.	Wireless controller should support 150 AP license from day one on the same hardware with scalability for 250 Access Points support in future without adding any new hardware
5.	Should support L2 and L3 based discovery
6.	Should support DNS based Controller discovery, DHCP Based Controller discovery and static discovery
7.	Appliance should have Redundant Power Supply
8.	Controller should support Spectrum Analysis feature to Detect interference from different sources. System Should provide real-time charts showing interference for access point, on a per-radio, per-channel basis.
9.	Ability to map SSID to VLAN and dynamic VLAN support for same SSID.
10.	Should support Command line(CLI) to access point
11.	Controller should support Security & Authentication: Wireless Security: WEP, WPA-TKIP, WPA2-AES
12.	System should provide DOS attacks and Intrusion Detection and Prevention and Control for any Rough Access Points.
13.	Controller should support L2 Client Isolation so that End Users cannot access each other's devices. Isolation should have option to apply on Access Point or SSID's.
14.	IPv4 & IPv6 support from Day 1
15.	The Controller should support OS/Device identification and device type based policies i.e allow or deny, Bandwidth rate limit, VLAN mapping
16.	The controller should provide a Guest Login portal in order to authenticate users that are not part of the organization.
17.	Per SSID or dynamic Per user bandwidth Rate Limiting
18.	Compliance Wi-Fi Alliance certified, FCC Part 15, Class A, CE, RCM, VCCI, UL/ cUL, CB, BSMI
19.	Should support mounting options of Ceiling, T-Rail and wall all these accessories should included with box. If not quote all mounting kit.
20.	Support of NGF with Controller must be quoted with 3 years of technical premium support.

It is certified that the above specifications are general and do not favour any specific model/ brand/ company etc.

Terms & Conditions:

1. Valid GST number and HSN code of the product must be mentioned.
2. Bidder must submit a manufacturer authorization letter (MAF) against this bid from their OEM for Wireless Access Point and Comptroller. Failure to provide may result in disqualification from the bid.
3. Active Component OEM should be listed in Gartner Leader Quadrant for Wired and Wireless LAN Infrastructure report from the last 5 years.

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4. Active Component OEM should have quality standard certifications like ISO 9001- 2008/ISO 14001/ ISO 27001.
5. Active Component OEM should have Technical Assistance Centre (TAC) on 24 x 7 basis with a toll free number.
6. Bidder should have experience of at least 8 years in the field of Information Technology business/wired and wireless LAN, MAN, WAN. Joint ventures or consortiums are not permitted. Relevant documents should be attached.
7. "Bidder should submit the relevant experience documents of the similar field in Central Govt. /State Govt./PSUs/ Govt Educational Institute/University/ in every items/ technology. They need to submit copies of the P.O's, clearly stating the duration of the contract, value, scope, and satisfactory report as per the following:
 - o Three purchase orders of similar work above 35% on a similar field within the last 3 Years.
 - o Five purchase orders of similar work above 15% on a similar field within the last 3 Years.
8. Bidder must have dedicated/toll-free telephone numbers for 24X7 service support. Details to be submitted along with the bid.
9. The bidder must not be blacklisted by Central Govt. /State Govt./PSUs/Other Govt. Agency/ Govt. Educational Institute/University. Blacklist certificate on bidder letterhead to be submitted along with the bid
10. The rates of the equipment/items must be quoted strictly according to the full Specifications/Configuration as per requirement along with all the terms & conditions and must be FOR GADVASU, Ludhiana destination basis and should include all types of taxes and transport charges etc.
11. Rates quoted must be valid for 1 month. In case prices slash down or any other benefit (in form of lesser price/lesser tax/foreign exchange rate etc.) it must be passed on to GADVASU.
12. The payment shall be made after the successful delivery, configuration and installation of devices.
13. The University reserves all the rights to accept or reject any/all quotation(s) and to increase or decrease quantity or configuration of items specified without specifying any reason. No correspondence will be made on this matter.
14. In case of any dispute, jurisdiction will be Ludhiana District Courts.

B Singh 19/12/22
 Sh. Parminderdeep Singh Mangat
 (Indentor/PI or CO-PI of
 concerned projects/scheme)

Dr. Nirmal Singh
 Dr. Nirmal Singh, Asstt. Librarian
 (Nominee of the Head indenting)

Dr. Mudjit Chandra
 Dr. Mudjit Chandra, Sr. Scientist
 (Nominee of concerned controlling officer)

Sh. Yogesh Kumar
 Sh. Yogesh Kumar, SDO (Elect.)
 (Nominee of DSW-cum-EO)

Sh. Vijay Kumar
 Sh. Vijay Kumar, Superintendent
 (Nominee of Comptroller)

Sh. Rajinder Kumar
 Sh. Rajinder Kumar, Store Keeper
 (Represent the non-teaching employee)

Approved
Iskhan
 20.12.2022
 University Librarian