DAYALBAGH EDUCATIONAL INSTITUTE
DAYALBAGH, AGRA-282005

Notice Inviting tenders

Limited tender No: DEI/Computer Centre/RS/2016-17/TDR-61 Date: 25.02.2017

Sealed limited tenders are invited from the Manufacturers/ Suppliers/Authorized dealers/ Agencies for the supply and installation of the following-

	Item	Quantity
1.	**Access Point : Dual-band, controller-based 802.11a/g/n/ac**	30 Nos
2.	**Wireless Controller to support 50 access points (with license if any)**	One
3.	**Network Switch with 24 Port 10/100/1000, 4 T/SFP**	4 Nos
	Please see Technical Specifications at Appendix- 1	

The tenderer shall be required to submit the Earnest Money Deposit (EMD) for an amount of **Rs.36,000/-** by way of demand draft/banker's cheque/FDRs which is refundable and a non-refundable tender fee for the amount of **Rs. 200/- (Rupees two hundred only)** by Demand draft. The demand drafts (validity 45 days beyond final bid) for earnest money deposit & tender fee must be enclosed in the envelope containing the bid documents, super-scribed with tender number, due date of submission on the envelope and addressed to :

"The Registrar
Dayalbagh Educational Institute,
Dayalbagh, Agra – 282005,
Uttar Pradesh"

Note: Central Purchase Organization, Small Scale Industries/ National Small Scale Industries Corporation shall be exempted from payment of Earnest Money Deposit. Tenderer seeking exemption should enclose a self attested photocopy of valid registration certificate with NSIC.
(The Earnest Money is liable to be forfeited if the quotation is not honored or if the contract is not signed with the Institute, after the award is made to the Tenderer)

1. Time and last date of submission of the Bid: 12.30 pm on 18.03.2017
2. Time of Bid Opening: 01.00 pm on 18.03.2017
3. Venue of Bid Opening: Conference Hall, CAO, Dayalbagh Educational Institute in the presence of bidders who want to be present at the time of opening of bid.

Interested bidders may post (at the above address) or put the tender documents completed in all respect and other requisite documents in the tender box kept in the General Section, CAO, Dayalbagh Educational Institute, Dayalbagh, Agra- 282005. The bidders are also informed that they may come personally or send their representative to be present at the time of opening of bid. Please note that tender box shall be opened at the time mentioned above irrespective of whether bidders himself or any of their representative are present or not. The tenders shall not be entertained after this deadline under any circumstances what so ever. For more details please visit the Institute's website http://www.dei.ac.in.

Registrar
Dayalbagh Educational Institute
Dayalbagh, Agra-282005

(Appendix -1)

Specifications:

1. **Access Point 30 Nos. : Dual-band, controller-based 802.11a/g/n/ac with following Features:**

802.11n version 2.0 (and related) capabilities ● 4x4 MIMO with three spatial streams ● Maximal ratio combining (MRC) ● 802.11n and 802.11a/g beam forming ● 20- and 40-MHz channels ● PHY data rates up to 450 Mbps (40 MHz with 5 GHz) ● Packet aggregation: A-MPDU (Tx/Rx), A-MSDU (Tx/Rx) ● 802.11 dynamic frequency selection (DFS) ● Cyclic shift diversity (CSD) support 802.11ac Wave 1 capabilities ● 4x4 MIMO with three spatial streams ● MRC ● 802.11ac beam forming ● 20-, 40-, and 80-MHz channels ● PHY data rates up to 1.3 Gbps (80 MHz in 5 GHz) ● Packet aggregation: A-MPDU (Tx/Rx), A-MSDU (Tx/Rx) ● 802.11 DFS ● CSD support 802.11ac Wave 2 capabilities ● 4x4 MU-MIMO with three spatial streams ● MRC ● 802.11ac beam forming ● 20-, 40-, 80, 160-MHz channels ● PHY data rates up to 5.2 Gbps ● Packet aggregation: A-MPDU (Tx/Rx), A-MSDU (Tx/Rx) ● 802.11 DFS ● CSD support

802.11ac support to provide a theoretical connection rate of up to 2.6 Gbps per radio.

With RF architecture, which provides high-performance coverage for a high density of client devices, giving the end user a seamless wireless experience. Features such as custom hardware in 802.11ac Wave 2 radios, cross-access point noise reduction, and an optimized client roaming experience.

Multiuser Multiple-Input Multiple-Output (MU-MIMO) technology for three spatial streams, MU-MIMO enables access points to split spatial streams between client devices, to maximize throughput.

Flexible Radio Assignment to allow the access points to intelligently determine the operating mode of serving radios based on the RF environment. The access points can operate in the following modes:

● 2.4-GHz and 5-GHz mode: One radio will serve clients in 2.4-GHz mode, while the other serves clients in 5- GHz mode.

● Dual 5-GHz mode: Both radios inside the access point to operate on the 5-GHz band, maximizing the benefits of 802.11ac Wave 2 and increasing client device capacity.

● Security Monitoring and 5-GHz mode, One radio will serve 5-GHz clients, while the other is scanning the full spectrum for wIPS attackers, interferers, and rogue devices.

Integrated antenna Flexible radio (either 2.4 GHz or 5 GHz) ● 2.4 GHz, gain 4 dBi, internal antenna, omni directional in azimuth ● 5 GHz, gain 6 dBi, internal directional antenna, elevation plane beam width 90° Dedicated 5-GHz radio ● 5 GHz, gain 5 dBi, internal antenna, omnidirectional in azimuth External antenna (sold separately) ● 2802e Series access points are certified for use with antenna gains up to 6 dBi (2.4 GHz and 5 GHz) ● smart antenna connector to RP-TNC connectors to connect a second antenna to the access point ● Required when running the flexible radio as either a second 5-GHz serving radio or Wireless Security Monitoring radio Interfaces ● 2802I/E ◦ 2x100/1000BASE-T autosensing (RJ-45)

● Management console port (RJ-45) ● USB 2.0 (enabled via future software) Indicators ● Status LED indicates boot loader status, association status, operating status, boot loader warnings, boot loader errors

Dual 5-GHz radio support to enable both radios to operate in 5-GHz client serving mode, allowing an industry-leading 5.2 Gbps (2 x 2.6 Gbps) over-the-air speeds while increasing client capacity.

Smart antenna connector for an intelligent second physical antenna connector is to be included in the model with an external antenna. This connector is to provide advanced network design flexibility for high-density and large open-area environments, allowing two sets of antennas to be connected and active on a single access point.

160-MHz channel support Supporting channels up to 160 MHz wide, Dynamic Bandwidth Selection allows the access point to dynamically switch between 20-, 40-, 80-, and 160-MHz channels, depending on the RF channel conditions, providing the industry's best-performing wireless network.

Optimized access point roaming to helps ensure that client devices associate with the access point in their coverage range that offers the fastest data rate available.

Zero Impact Application Visibility and Control for dedicated hardware acceleration to improve the performance of line-speed applications such as Application Visibility and Control. Auto Link Aggregation (LAG) support 802.3ad (LACP) compliant, allowing both Gigabit Ethernet interfaces to automatically LAG, increasing overall throughput to the access point.

With technology to improve downlink performance to all mobile devices, including one-, two-, and three-spatial-stream devices on 802.11a/b/g/n/ac while improving battery life on mobile devices such as smartphones and tablets.

With 160-MHz channel support, provides proactive, high-speed spectrum intelligence across 20-, 40-, 80-, or 160-MHz-wide channels to combat performance problems due to wireless interference.

With flexible deployment mode for small to medium-sized deployments that that require 25 or fewer access points. Easy setup to allows the Access Points to be deployed on networks without a physical controller.

2. **Wireless Controller One No. To support 50 access points (with license if any) With following Specifications:**

Wireless	IEEE 802.11a, 802.11b, 802.11g, 802.11d, WMM/802.11e, 802.11h, 802.11k, 802.11n, 802.11r, 802.11u, 802.11w, 802.11ac.
Wired/Switching/Routing	IEEE 802.3 10BASE-T, IEEE 802.3u 100BASE-TX specification, 1000BASE-T. 1000BASE-SX, 1000-BASE-LH, IEEE 802.1Q Vtagging, and IEEE 802.1AX Link Aggregation.
Data Request For Comments (RFC)	› RFC 768 UDP › RFC 791 IP › RFC 2460 IPv6 (pass through Bridging mode only) › RFC 792 ICMP › RFC 793 TCP › RFC 826 ARP › RFC 1122 Requirements for Internet Hosts › RFC 1519 CIDR › RFC 1542 BOOTP › RFC 2131 DHCP › RFC 5415 CAPWAP Protocol Specification › RFC 5416 CAPWAP Binding for 802.11
Security Standards	› WPA › IEEE 802.11i (WPA2, RSN) › RFC 1321 MD5 Message-Digest Algorithm › RFC 1851 The ESP Triple DES Transform › RFC 2104 HMAC: Keyed Hashing for Message Authentication › RFC 2246 TLS Protocol Version 1.0 › RFC 2401 Security Architecture for the Internet Protocol

	• RFC 2403 HMAC-MD5-96 within ESP and AH • RFC 2404 HMAC-SHA-1-96 within ESP and AH • RFC 2405 ESP DES-CBC Cipher Algorithm with Explicit IV • RFC 2406 IPsec • RFC 2407 Interpretation for ISAKMP • RFC 2408 ISAKMP • RFC 2409 IKE • RFC 2451 ESP CBC-Mode Cipher Algorithms • RFC 3280 Internet X.509 PKI Certificate and CRL Profile • RFC 3602 The AES-CBC Cipher Algorithm and Its Use with IPsec • RFC 3686 Using AES Counter Mode with IPsec ESP • RFC 4347 Datagram Transport Layer Security • RFC 4346 TLS Protocol Version 1.1
Encryption	• WEP and TKIP-MIC: RC4 40, 104 and 128 bits (both static and shared keys) • AES: CBC, CCM, CCMP • DES: DES-CBC, 3DES • SSL and TLS: RC4 128-bit and RSA 1024- and 2048-bit • DTLS: AES-CBC • IPSec: DES-CBC, 3DES, AES-CBC
Authentication, Authorization, and Accounting (AAA)	• IEEE 802.1X • RFC 2548 Microsoft Vendor-Specific RADIUS Attributes • RFC 2716 PPP EAP-TLS • RFC 2865 RADIUS Authentication • RFC 2866 RADIUS Accounting • RFC 2867 RADIUS Tunnel Accounting • RFC 2869 RADIUS Extensions • RFC 3576 Dynamic Authorization Extensions to RADIUS • RFC 5176 Dynamic Authorization Extensions to RADIUS • RFC 3579 RADIUS Support for EAP • RFC 3580 IEEE 802.1X RADIUS Guidelines • RFC 3748 Extensible Authentication Protocol • Web-based authentication

	◦ TACACS support for management users
Management	◦ SNMP v1, v2c, v3 ◦ RFC 854 Telnet ◦ RFC 1155 Management Information for TCP/IP-Based Internets ◦ RFC 1156 MIB ◦ RFC 1157 SNMP ◦ RFC 1213 SNMP MIB II ◦ RFC 1350 TFTP ◦ RFC 1643 Ethernet MIB ◦ RFC 2030 SNTP ◦ RFC 2616 HTTP ◦ RFC 2665 Ethernet-Like Interface types MIB ◦ RFC 2674 Definitions of Managed Objects for Bridges with Traffic Classes, Multicast Filtering, and Virtual Extensions ◦ RFC 2819 RMON MIB ◦ RFC 2863 Interfaces Group MIB ◦ RFC 3164 Syslog ◦ RFC 3414 User-Based Security Model (USM) for SNMPv3 ◦ RFC 3418 MIB for SNMP ◦ RFC 3636 Definitions of Managed Objects for IEEE 802.3 MAUs ◦ Cisco private MIBs
Management Interfaces	◦ Web-based: HTTP/HTTPS ◦ Command-line interface: Telnet, Secure Shell (SSH) Protocol, serial port
Interfaces and Indicators	◦ Uplink: 8 (5508) 1000BaseT, 1000Base-SX and 1000Base-LH transceiver slots ◦ Small Form-Factor Pluggable (SFP) options (only Cisco SFPs supported): GLC-T, GLC-SX-MM, GLC-LH-SM ◦ LED indicators: link ◦ Service Port: 10/100/1000 Mbps Ethernet (RJ45) ◦ Service Port: 10/100/1000 Mbps Ethernet (RJ45) For High Availability for future use ◦ LED indicators: link ◦ Utility Port: 10/100/1000 Mbps Ethernet (RJ45) ◦ LED indicators: link

	◦ Expansion Slots: 1 (5508) ◦ Console Port: RS232 (DB-9 male/RJ-45 connector included), mini-USB ◦ Other Indicators: Sys, ACT, Power Supply 1, Power Supply 2
Physical and Environmental	◦ Dimensions (WxDxH): 17.30 x 21.20 x 1.75 in. (440 x 539 x 44.5 mm) ◦ Weight: 20 lbs (9.1 kg) with 2 power supplies ◦ Temperature: Operating temperature: 32 to 104°F (0 to 40°C); Storage temperature: -13 to 158°F (-25 to 70°C) ◦ Humidity: Operating humidity: 10 95%, noncondensing. Storage humidity: up to 95% ◦ Input power: 100 to 240 VAC; 50/60 Hz; 1.05 A at 110 VAC, 115W Maximum; 0.523 A at 220 VAC, 115W Maximum; Test Conditions: Redundant Power Supplies, 40C, Full Traffic ◦ Heat Dissipation: 392 Btu/hour at 110/220 VAC Maximum
Regulatory Compliance	CE Mark Safety: ◦ UL 60950-1:2003 ◦ EN 60950:2000 ◦ EMI and susceptibility (Class A) ◦ U.S.: FCC Part 15.107 and 15.109 ◦ Canada: ICES-003 ◦ Japan: VCCI ◦ Europe: EN 55022, EN 55024

3. Network Switch with 24 Port 10/100/1000, 4 T/SFP 4 Nos.

Performance and Scalability	
Forwarding bandwidth	108 Gbps
Switching bandwidth*	216 Gbps
Maximum active VLANs	1023
VLAN IDs available	4096
Maximum transmission unit (MTU)-L3 packet	9198 bytes

Jumbo frame - Ethernet frame	9216 bytes

* Switching bandwidth is full-duplex capacity.

Hardware Specifications	
Flash memory	128 MB
DRAM	512 MB
CPU	600MHz dual core
Console Ports	USB (Type-B), Ethernet (RJ-45)
Storage Interface	USB (Type-A) for external flash storage
Network Management Interface	10/100 Mbps Ethernet (RJ-45)

General Terms & Conditions

Note: Bidders must submit the following primary information/documents with the quotation. Bidders will have to indicate these particulars in their quote failing which the offer may be rejected. Please do produce the related documents whenever required by the Institute.

1. Trade License/Company Registration No.
2. VAT / Service Tax Regn. No.
3. Income Tax PAN No.
4. Firm's Bank A/c details
5. Bidders are requested to quote rate(s) per unit(s) only in the recognized Accounting units otherwise the quotation will not be accepted.
6. The bidders should quote rates as per details/specifications mentioned in notice inviting Tender. The Institute reserves the right to place order for each job to single/separate vendor(s) if necessary.
7. The bidders should quote rates on FOR/Free Delivery at the sites specified in the Notice inviting Tender, inclusive of all charges else should mention estimated cost of packing, forwarding, insurance and freight by Rail/Road/Post etc. as the case may be.
8. The bidders must indicate if their rate is inclusive of VAT/Sales Tax and /or Excise Duty.
9. In case the opening date of Tender happens to be holiday, tender will be received and opened on the next working day at the same time and same place. Quotation received after the closing date will not be entertained and revision in the price will render the bid invalid. Quotation should indicate clearly the period of Validity, preferably not less than 45 days.
10. In case of an offer for items having multiple options, you should clearly indicate item-specific price(s). Please quote separate item-wise rate(s), when quotation has been asked for so. For every offer, packing and forwarding charges, Sales/VAT/Service Tax etc. should be shown separately.
11. Bids will be evaluated after equated comparison of offers upon calculating all tax/duty/cess/surcharge/discount/packing/transportation costs, other charges with price and non-compliance of technical and commercial terms will render a bid liable for rejection.
12. Bidders will have to submit Bills/Invoices on dispatch of stores, if ordered, to this office in triplicate duly pre-receipted (and stamped for amount over Rs. 5000/-) and supported by the relevant delivery documents for audit and payment directly in your bank account through RTGS/NEFT. Generally, payments can be expected within one month and are made against acceptance of supplies/ jobs completed and in deserving cases, against shipment documents.
13. No insurance charges are allowed unless otherwise specified and agreed to by us. In the absence of any specific instructions, it will be the responsibility of the supplier to ensure a consignment against transit risk at his own expense if he so desires.
14. The Institute is not bound to accept the lowest rate or any other offer and the acceptance of the offer is entirely at the discretion of the Committee.

15. All purchases are subject to the approval of the Governing Body of the Institute.
16. The Institute reserves the right to select certain items in single or multiple units and reject the others or all as mentioned in the schedule and to revise or alter the specifications before acceptance of any tender and accept or reject any or all tenders, wholly or partly or close the tender without assigning any reason whatsoever.
17. The Bidder shall be required to submit the amount of Earnest Money Deposit (EMD) mentioned in the Notice Inviting Tender which is refundable and a non-refundable tender fee for an amount of **Rs 200/-** (Rupees two hundred only) by way of demand drafts/banker's cheque. The demand drafts shall be drawn in favour of "Registrar, Dayalbagh Educational Institute, Agra" payable at Agra. The demand drafts (validity 45 days beyond final bid) for earnest money deposit & tender fee must be enclosed in the envelope containing the bid.
    a.) The firm(s) that are registered with the National Small Industries Corporation (NSIC) / or Small Scale Industries (SSI) are exempted from furnishing the EMD. Self-attested photocopy of the valid registration certificate must be enclosed with their bid.
    b.) The demand drafts for EMD & tender fee must be enclosed in the envelope containing the technical/price bid and super-scribed with tender number and due date of submission on it. Any technical/price bid is found without the demand drafts of EMD and tender fee will be rejected. The Institute will not be liable to pay any interest on such an amount. The EMD shall be forfeited, if the Bidder withdraws its bid during the period of validity of Tender.
18. Arbitration and Laws: In case of any dispute or difference arising out of or in connection with the tender conditions / order and Contract, the Institute and the Supplier will address the dispute / difference for a mutual resolution failing which, the matter shall be referred for arbitration to a sole Arbitrator to be appointed by the Institute. The Arbitration shall be held in accordance with the provisions of the Arbitration and Conciliation Act, 1996 and the venue of arbitration shall be at Agra only. The resolution of the Arbitrator shall be final and binding on both the parties.
19. Jurisdiction: The courts at Agra alone will have the jurisdiction to try any matter or dispute between parties arising out of this tender /contract. It is specifically agreed that no court outside and other than Agra court shall have jurisdiction in the matter.

Registrar, DEI