MAHARSHI DAYANAND UNIVERSITY

Rohtak-124001, Haryana (INDIA)

(A State University established under Haryana Act No. XXV of 1975)

'A+' Grade University Accredited by NAAC

Procurement of Wi-Fi access points, POE switches, and passive equipment

Last date submission of the filled Tender document:22.04.2026 up to 02:00 PM.
(The Tender document is to be submitted duly signed in blue/black ink on each page and stamped with official seal on each page)

MD University Rohtak-124001, Haryana INDIA

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MAHARSHI DAYANAND UNIVERSITY
Rohtak-124001, Haryana (INDIA)
(A State University established under Haryana Act No. XXV of 1975)
'A+' Grade University Accredited by NAAC
University Computer Center

NIT NO.:/ MDU/UCC/2026/Mar/00**4**   Dated 24.03.2026 15.00 **PM**

Phone: 01262-293025   **E-mail: dir.ucc@mdurohtak.ac.in**

STANDARD BIDDING DOCUMENT FOR **PROCUREMENT OF WI-FI ACCESS POINTS, POE SWITCHES, AND PASSIVE EQUIPMENT**

PART1: COMPLETE BIDDING DOCUMENT

<div style="background:#b5401f;color:white">PRESS NOTICE</div>

M. D. UNIVERSITY, ROHTAK	
Notice Inviting E-Tender	
Name of work	PROCUREMENT OF WI-FI ACCESS POINTS, POE SWITCHES, AND PASSIVE EQUIPMENT
E-Service Fees+ Tender Doc. Fees	1180/- + 4,000/- =5,180/- (To be paid Online)
Earnest Money **Time Limit**	3,00,000/- INR 21 Days
Tenders to be received: ………………….. till 02:00 PM	
(1) The tenders will be received only through E-tendering for further details, visit the website Https://etenders.hry.nic.in/nicgep/app	

    i   The tenders will be received only through e-tendering. For further details, visit the website https://etenders.hry.nic.in

    ii   Earnest Money (as mentioned above) is required to be deposited through online mode from https://etenders.hry.nic.in

    iii   Willing bidders shall have to pay Rs.1000/- + GST as the e-Service/ Processing Fee through online mode from https://etenders.hry.nic.in

    iv   The interested parties/bidders should visit the University website (https://mdu.ac.in) or https://etenders.hry.nic.in regularly for corrigendum(s) which may be issued regarding extension of date, modification of eligibility or amendments in other terms & conditions etc., as corrigendum(s) will not be published in newspapers.

    v   The Bidder who is registered as MSMEof Haryana State similar services only for the same work are exempted from payment of EMD but Bidder will have to submit an affidavit to this effect as per Annexure-I available on the website of Department of Industries & Commerce, Govt. of Haryana.

REGISTRAR

E-Tender is invited for purchase of below mentioned items in single stage two cover system i.e. Request for Technical Bid (online Bid under PQQ/ Technical Envelope) and Request for Financial Bid (comprising of price bid Proposal under online available Commercial Envelope).

KEY DATES

Sr. No.	M.D.U. Rohtak Stage	Vendor Stage	Start Date & Time	End Date & Time
1		Tender Document Download and Bid Preparation & Submission	**24.03.2026 03.00 PM**	22.04.2026 till 02:00 PM
3		Submission of Tender Fees and online EMD Fees	**24.03.2026 03.00 PM**	22.04.2026 till 02:00 PM
4	Technical Opening/ Technical Evaluation/		**23.04.2026** 02.00 PM	
5	Opening of Financial Bid		FINANCIAL DATE WILL BE DECIDED LATER ON	

1. Any clarification regarding the detailed notice inviting tender may be sought from the Director UCC during office hours at 01262-293025 or dir.ucc@mdurohtak.ac.in
2. Tender document is available on website http://etenders.hry.nic.in and https://mdu.ac.in
3. The Bidders would submit bid through e-Tendering only on the website http://etenders.hry.nic.in

Under the process, the Pre-qualification / Technical online bid application as well as online Price Bid shall be invited at single stage under two covers i.e. Technical & Commercial Envelope. Eligibility and qualification of the Applicant will be first examined based on the details submitted online under first cover (PQQ or Technical) and with respect to eligibility and qualification criteria prescribed in this Tender document. The Price Bid under the second cover shall be opened for only those Applicants whose PQQ/Technical Applications are responsive to eligibility and qualifications requirements as per Tender documents. The tenderer should read the terms & conditions and specifications in tender documents carefully before submission of e-tender. Tender documents can be downloaded/uploaded online on the Portal: http://etenders.hry.nic.in

1. The payment of Tender Document fee as well as EMD and e-Service/Processing Fee shall be made by eligible bidders through online mode from https://etenders.hry.nic.in
2. The interested bidders will be mandatorily required to online sign-up (create user account) on the website https://etenders.hry.nic.in to be eligible to participate in the e-tender

The Bidders can submit their tender documents (Online) as per the dates mentioned in the key dates

IMPORTANT NOTE:

1. The Applicants/bidders have to complete the 'Application / Bid Preparation & Submission' stage on the scheduled time as mentioned above. If any Bidder fails to complete his / her aforesaid stage in

the stipulated online time schedule for this stage, his / her application/bid status will be considered as 'Applications/bids not submitted'.

2. Bidder must confirm & check his/her application/bid status after completion of his/her all activities for e-bidding.

3. Bidder can rework on his/her bids even after completion of the 'Application/Bid Preparation & submission stage' (Application/Bidder Stage), subject to the condition that the rework must take place during the stipulated time frame of the Bidder Stage.

4. In the first instance, the online payment details of tender document fee + e-Service and EMD & PQQ/Technical Envelope shall be opened. After that the financial bids of all technically qualified bidders shall be opened online in the presence of such bidders who either themselves or through their representatives choose to be present.

5. The bids shall be submitted online in two separate steps

Envelope 1: Technical Bid

The bidders shall upload the required eligibility & technical documents online in the Technical Bid.

Envelope 2: Commercial Bid

The bidders shall quote the prices in price bid format under Commercial Bid.

CONDITIONS: -

1. The tenderer should keep in touch with the University Website for any change in the DNIT till the last date/revised last date of online invited tender and incorporate such changes in DNIT and the tender bids.

2. DNIT and prequalification criteria can be seen on any working day during office hours in office of undersigned.

3. Conditional tenders will not be entertained & are liable to be rejected.

4. In case the day of the opening of tenders happens to be a holiday, the tenders will be opened on the next working day. The time and place of tender opening and other conditions will remain unchanged.

5. The University reserves the right to reject any tender or all the tenders without assigning any reasons.

6. The societies shall produce an attested copy of the resolution of the Executive/Governing body for the issuance of tenders.

7. The Jurisdiction of the court will be at Rohtak.

8. The tender of the bidder who does not satisfy the eligibility/qualification criteria in the bid documents is liable to be rejected summarily without assigning any reason, and no claim whatsoever on this account will be considered.

9. The bid for the contract shall remain open for acceptance during the bid validity period to be reckoned from the last date of submission of the tender. If any bidder/tender withdraws his bid/tender before the said period or makes any modification in the Terms and Conditions of the bid during the fixed validity period, the Earnest Money shall stand forfeited. Bids shall be valid for three months from the date of bid closing, i.e., from the last date of submission of EMD.

10. Any work/purchase order, here tendered, may be withdrawn from further processing at any stage at the discretion of the competent authority without assigning any reason.

11. The University is competent to increase/decrease the volume of work/purchase order. In case of a decrease in the volume of work/order, the contractor shall have no claim to any payment or

compensation whatsoever on account of any profit or advantage that he might have derived from the execution of the work/order in full.

12. The University reserves the right to accept or reject or negotiate any of the tender or conditions/items without assigning any reason.

13. The Earnest Money (EMD) of the unsuccessful agency/firm shall be returned on completion of the Tender process.

14. In case of any dispute relating to this contract, the matter shall be referred to the Arbitrator to be appointed by the Vice-Chancellor, whose decision shall be binding on both parties.

15. Rates should be carefully filled up both in words and figures without any cutting, erasing, or overwriting.

16. In case the firm / agency quoting the lowest rates declines to accept the offer, the Earnest Money (EMD) of such firm shall be forfeited and firm shall be blacklisted by the University for any kind of dealing in future.

17. Any other conditions as may be deemed appropriate shall be announced at the time of Opening of Tenders in the presence of Bidders.

18. The agency / firm shall also append the following declaration with the tender

DECLARATION

I/We (Name) of the firm_____ do hereby solemnly affirm and declare that the facts stated in the Technical Bid are correct and true to the best of my / our knowledge and belief and nothing has been concealed therein. In case of any concealment or misrepresentation detected at any stage, I/We will be liable for legal action under Section 182 and Section 415 read with Section 417 and 420 of the Indian Penal Code as the case may be.

Place: _____

Dated:_____

(Signature of the Tenderer)
with full name and Address
with seal & stamp

These conditions will overrule the conditions stated in the tender documents, wherever relevant and applicable.

REGISTRATION OF BIDDERS ON THE E-PROCUREMENT PORTAL: -

These conditions will over-rule the conditions stated in the tender documents, wherever relevant and

applicable.

REGISTRATION OF BIDDERS ON THE E-PROCUREMENT PORTAL:-

All the bidders intending to participate in the tenders process online are required to get registered on the centralized E-procurement portal i.e. https://etenders.hry.nic.in/nicgep/app. Please visit the website for more details.

For other details/help, please refer to the e-procurement portal https://etenders.hry.nic.in/nicgep/app.

FORMAT OF LETTER TO BE SUBMITTED WITH THE TENDER FOR **PROCUREMENT OF WI-FI ACCESS POINTS, POE SWITCHES, AND PASSIVE EQUIPMENT**

………………………………

To:

Director UCC
MD University
Rohtak – 124001 (Haryana)

Subject: PROCUREMENT OF WI-FI ACCESS POINTS, POE SWITCHES, AND PASSIVE EQUIPMENT

Dear Sir,

1. This is with reference to your TENDER notice dated ………………. I have examined the TENDER document and understood its contents. I hereby submit a Bid for the **procurement of wi-fi access points, PoE switches, and passive equipment**

2. The Bid is unconditional for the said tender. This bid is valid for a period of not less than 180 days.

3. It is acknowledged that the Authority will be relying on the information provided in the Tender and the documents accompanying such Tender for qualification of the bidders for the above subject items and we certify that all information provided in the Tender and in Annexures are true and correct; nothing has been misrepresented and omitted which renders such information misleading; and all documents accompanying the bid are true copies of their respective originals.

4. This statement is made for the express purpose of the above mentioned subject.

5. We shall make available to the Authority any additional information it may find necessary or require to supplement or authenticate the Qualification statement.

6. We acknowledge the right of the Authority to reject our bid without assigning any reason or otherwise and hereby relinquish, to the fullest extent permitted by applicable law, our right to challenge the same on any account whatsoever.

7. It is declared that:
   a) We have examined the Tender document and have no reservations to the Tender document.
   b) We have not directly or indirectly or through an agent engaged or indulged in any corrupt practice, fraudulent practice, coercive practice, undesirable practice, or restrictive practice in respect of any Bid or request for proposal issued by or any Agreement entered into with the Authority or any other public sector enterprise or any Centre/State Government or local bodies.

8. It is understood that the University may cancel the Bidding Process at any time without incurring any liability to the University and that you are neither bound to invite the applicants to Bid for the items nor to accept any bid that you may receive.

9. It is understood that the University can use any evaluation scheme/evaluation metrics/weightage or take the help of any consultant, as required in selecting the successful agency/agencies and we agree to abide by it.

10. It is certified that we have not been convicted by a Court of Law or indicted or adverse orders passed by a regulatory authority that could cast doubt on our ability to undertake the Services or which relates to a grave offense that outrages the moral sense of the community.

11. It is hereby certified that the firm has not been debarred/blacklisted for any reason/period by any central/state Govt. department/University/PSU etc. if so particulars of the same may be furnished. Concealments of facts shall not only lead to cancellation of the order but may also warrant legal action. University may reject bids of firms which has been blacklisted at any time.

12. It is hereby affirmed that we are in compliance of/shall comply with the statutory requirements, as applicable.

13. We hereby irrevocably relinquish any right or remedy which we may have at any stage at law or howsoever otherwise arising to challenge or question any decision taken by the Authority in connection with the selection of bidders, selection of the Tenderer, or in connection with the selection/Bidding Process itself, in respect of the above-mentioned items and the terms and implementation thereof.

14. We agree to undertake to abide by all the terms and conditions of the TENDER document.

15. We agree to undertake to be liable for all the obligations of the Tenderer under the Agreement. In witness thereof, we submit this application under and in accordance with the terms of the TENDER document.

Place:- ………………………….

Date :…………………………..

Yours faithfully,

(Signature, name and designation of the Tenderer/Authorized Signatory)

Official Seal

Documents to be Submitted with Technical Bid

1. Basic Details of Firm
   o Name & address of the firm with contact number.
   o Name of the authorized signatory (with designation).
2. Statutory Registrations
   o Copy of PAN Card.
   o Copy of GST Registration Certificate.
   o Registration number of the firm.
3. Financial Documents
   o Copies of Income Tax Returns (ITRs) for the last 3 years.
   o Proof of average turnover as per eligibility criteria during the last 3 years, certified by a Chartered Accountant.
4. Experience Proof
   o Copies of Work Orders / Completion Certificates / Purchase Orders showing experience of at least 3 years in Government/PSU/Universities/Boards/MNCs for similar Supply/Installation and maintenance of items.
   o At least one Satisfactory Performance Certificate from an institution where similar work was undertaken.
5. Affidavit
   o Affidavit on Non-Judicial Stamp Paper, duly attested by a Notary/1st Class Magistrate, stating the firm has not been blacklisted or debarred by any Govt/PSU/University/Private organization (Annexure-II format).
6. Eligibility Compliance Documents
   o Bid Specific OEM authorization is required for Active components
7. Tender Related Submissions
   o Forwarding letter by the bidder.
   o Scanned copies of all documents (points 1–7 above) were uploaded with the tender.
   o Tender Processing Charges (non-refundable).
   o E-Service Fee (as per Haryana Govt. portal).
   o Declaration regarding authorized signatory:
      ▪ Sole Proprietor / Partner / Company Director as applicable.

NOTE

1. In case of any queries on technical specifications, please refer to the specifications mentioned in "Annexure A" only.
2. Delivery/Repair is to be carried at **:.**

   > **DIRECTOR UCC**
   > UNIVERSITY COMPUTER CENTRE
   > **MD University**
   > **Rohtak-124 001**
   > **Haryana, India**

3. GST will be at concessional rates, as applicable to non-profit, own-use institutions.
4. The decision of acceptance of the Bids will lie with the competent authority of the University, which does not bind itself to accept the lowest Bid and who reserves the right to reject or accept any or all bid received, without assigning any reason.
5. The Bids are liable to be rejected if any of the above conditions are not fulfilled or if

the bid is not accompanied by EMD and Processing Charge.

6. The quantity may increase or decrease or obsoleted without any notice.

7. The University reserves the right to split the order among more than one Tenderer.

8. Financial Bid of the Tenderers who qualify in the Technical Bid shall be opened in the presence of the authorized designated representatives and Tenderers who wish to be present there. The date of Financial Bid opening will be informed to the shortlisted bidders subsequently.

9. The University will be at liberty to involve any expert or consultant in evaluating the bid for completing the entire bid process.

SUBMISSION OF TENDER

SEALING AND MARKING OF TENDER:

1. The TENDER must be complete in all aspects and should contain requisite certificates, informative literature, etc.
2. The Tender Document can be downloaded from the MD University Rohtak website (mdu.ac.in).
3. This is a two-part bid consisting of a Technical Bid and a Financial bid
4. The bid shall include:
   a. Forwarding letter by the Tenderer
   b. All required documents
   c. Tender processing charges (non-refundable)
   d. Interest-free EMD (Earnest Money Deposit) to be deposited online on e-tender portal
   e. Technical Bid
   f. Financial Bid
5. TENDER should be addressed to: -

   DIRECTOR UCC
   UNIVERSITY COMPUTER CENTRE
   MD University
   Rohtak-124 001
   Haryana, India

EXPENSES OF AGREEMENT:

All the expenses on the execution of the Agreement (if any) including the cost of a stamp paper or any other kind of expenditure incurred in the process of TENDER submission till final compliance shall be borne by the Tenderer.

DEADLINE FOR SUBMISSION OF BIDS:

TENDER must be received by the MD University Rohtak at the date, time and address specified in the TENDER notice/TENDER documents.

LATE BIDS:

Any TENDER received after the deadline specified for submission of TENDER shall be rejected without any further correspondence to the Tenderer.

OPENING OF FINANCIAL BID:

Financial Bid (Tenders) of the Tenderers who qualify in the Technical Bid shall be opened. The date of financial bid opening will be informed to the shortlisted bidders subsequently.

CLARIFICATION OF TENDER:

To assist in the examination, evaluation and comparison of Tender, University may at its discretion ask the Tenderers for a clarification on the Tender which is submitted by him. The request for clarification and the response shall be in writing.

AWARD OF PURCHASE ORDER

Successful Tenderer shall be awarded the Purchase/Work Order. If the agency fails to supply the items, EMD will be forfeited and the agency will be blacklisted, in addition to recourse to other penal measures. No grievance will be entertained in this regard.

6.1   University reserves the right to negotiate with eligible tenderers before finalization of the Tender and/or contract.

6.2   University reserves the right at the time of award of Purchase Order to increase or decrease even obsolete the number of items without any change in terms and conditions.

6.3   The bidders must quote rates and other terms and conditions for all the equipment/items, failing which tender may be rejected. Total cost of the bid will be one of the important deciding factor while deciding the bid in favor or against any bidder.

BIDDER'S ELIGIBILITY CONDITIONS:

1.   Average Turnover Requirement
The bidder must have an average annual turnover of ₹ 450 lacs or above during the last three financial years. Proof of turnover (CA-certified or audited balance sheets) must be enclosed.

2.   Relevant Experience
The bidder must have prior experience in executing IT-related supply/ installation or configuration of similar items for State Government-affiliated Universities / Boards / Institutions / PSUs, etc. Documentary proof, such as purchase orders or completion certificates, must be attached.

3.   Affidavit of Non-Blacklisting
The bidder must submit an affidavit on non-judicial stamp paper, duly attested by a 1st Class Magistrate / Notary, declaring that they have not been debarred or blacklisted by any State / Central Government, PSU, University, or private organization. (Refer Annexure–II)

4.   Performance / Satisfactory Certificate
The bidder must furnish at least one satisfactory performance certificate from an institution where similar IT items were supplied or installed, as declared in their eligibility documents.

5.   Authorized Signatory Declaration
The bidder must provide a declaration confirming the authority of the individual signing the bid:

- If a Sole Proprietor, a self-certification or power of attorney must be attached.

- If a Partnership Firm, the signing partner must have proper authorization or all partners must sign the bid.
- If a Private Limited / Public Limited Company, the signatory must be an authorized signatory of the company.

6. Income Tax Returns
   The bidder must attach self-attested copies of the last three years' Income Tax Returns (ITRs) along with the tender.

7. PAN and GST Registration
   The bidder must attach self-attested copies of PAN and GST registration certificates.

8. Fees Submission (Mandatory Online Mode)
   EMD, Tender Fee, and e-Service Fee must be submitted through online mode only. Any other mode of payment will not be accepted.

9. OEM Authorization for active components
   The bidder must submit a bid-specific OEM Authorization Letter from the original manufacturer for the items offered.

10. OEM Support Commitment
    The OEM must provide a bid-specific support commitment letter confirming:
    i. Five (5) years warranty coverage, and
    ii. Lifecycle assurance and spare parts availability.

11. OEM Certified Technical Resource
    The bidder must have at least one OEM-certified technical resource on their payroll for a minimum of one year. Supporting document such as EPF statement must be submitted as proof.

12. Deployment Experience Proof
    The bidder must have prior deployment experience in Wi-Fi deployment, preferably in an Education Campus. Copies of Purchase Orders, BOQ, and Installation Reports must be submitted as evidence.

Sealed Tenders are invited for the **procurement of wi-fi access points, POE switches, and passive equipment**

A. GENERAL CONDITIONS

1. Every e-tender shall be accompanied by EMD Fixed to be paid online.

2. Performance Guarantee: The successful tenderer shall submit a performance guarantee of 5% of the total contract amount for duration of the warranty period + 6 months before signing the agreement. This guarantee shall be refunded/released after successful completion of the contract, subject to adjustments for any recoveries.

3. No charges other than those explicitly mentioned in the tender shall be paid.

4. The quantity of parts may increase or decrease, which shall be communicated by the University at the beginning of the concerned quarter.

5. The University reserves the right to accept or reject any or all tenders without assigning any reason. The Registrar also reserves the right to split the order among multiple vendors or accept/reject individual items within the bid.

B. ELIGIBILITY & QUALIFICATION REQUIREMENTS

6. The bidder must have at least 3 years of experience in supplying/ installing/ maintaining similar equipment at Government/Public Sector/Reputed Private Institutions.

7. The bidder must submit:
   o OEM authorization/MAF specific for this bid.
   o Copies of Purchase Orders (POs) / Installation Reports from at least two (2) previous clients.

8. The bidder must not have been blacklisted by any government department, university, PSU, or corporation. A self-attested affidavit/undertaking must be submitted.

9. The contractor must provide a signed taking-over certificate listing all equipment in working condition at the start of the contract.

C. SERVICE & MAINTENANCE OBLIGATIONS

10. If the contractor fails to complete the work within the stipulated time, a penalty of 1% per day shall be imposed, subject to a maximum of 10% of the total contract value.

11. Comprehensive Warranty Clause:
    o All replaced parts and serviced equipment must carry a minimum 5-year comprehensive warranty from the date of successful installation and Implementation /completion of the Project.
    o The comprehensive warranty shall cover all spare parts, labor, and service charges.

12. Technical Documentation:
    o The contractor shall provide a detailed service completion report indicating:
        ▪ Components replaced (with serial numbers).
        ▪ Installations details and test reports

13. The contractor must ensure safety compliance while handling refrigerants, electrical components, and air filters.

D. FINANCIAL TERMS & PAYMENT CONDITIONS

15. No advance payment shall be made.

16. No payment will be made for any service head not mentioned in the financial bid.

17. The contractor shall be liable for any damage to university property caused due to negligence or faulty workmanship.

E. PENALTIES & LIABILITIES

19. If the contractor backs out in mid-term, they shall be liable for recovery at a higher rate for alternative arrangements made by MDU Rohtak. This shall also result in:
    o Debarring the contractor from future work at MDU Rohtak.
    o Forfeiture of EMD/performance guarantee.

20. The contractor shall indemnify MDU Rohtak against all legal liabilities arising from actions, claims, or disputes related to:
    o Service-related damages.
    o Injuries to staff/workers.
    o Environmental/safety violations.

F. ARBITRATION & LEGAL JURISDICTION

21. Any dispute arising out of the contract shall be settled through mutual consultation. If unresolved, the dispute shall be referred to Arbitration under the Arbitration and Conciliation Act, 1996.

22. The jurisdiction for all legal disputes shall be Rohtak, Haryana.

Sr No	Item	Unit	Qty
A.	**Indoor Wi-Fi 6 Access Point**	Nos.	**400**
B.	**Outdoor Wi-Fi 6 Access Point**	Nos.	**50**
C.	**24-Port PoE Switch**	Nos.	**30**
D.	**8Port POE++**	Nos.	**15**
E.	**8-Port PoE Switch**	Nos.	**20**
F	**Passive Cabling & Connectivity**	LumSum	1
G	**CAMC Price per year**	LumSum	1
Total(Taxes Extra) as Applicable			

SCOPE OF WORK(SOW) **FOR WIRELESS NETWORK INFRASTRUCTURE SOLUTION**

Procurement and installation of Wi-Fi access points, PoE switches, and passive equipment

1. PURPOSE AND INTENT

The purpose of this Scope of Work (SoW) is to define the scope, responsibilities, deliverables, and obligations of the successful bidder for the design, supply, installation, integration, configuration, testing, commissioning, operation, and maintenance of a secure, scalable, controller-based Wireless Network Infrastructure across the Maharshi Dayanand University (MDU) campus.

The bidder shall provide a complete turnkey solution, including all active and passive network components, licenses, subscriptions, accessories, services, documentation, and support required for successful deployment and uninterrupted operation of the wireless network.

All equipment and services shall strictly conform to the technical specifications, quantities, conditions, and compliance requirements prescribed in the tender. No deviation shall be permitted without prior written approval of the University.

2. EXISTING UNIVERSITY INFRASTRUCTURE (MANDATORY INTEGRATION)

The proposed wireless solution must seamlessly integrate with the University's existing ICT and network infrastructure, which includes but is not limited to:

- FortiGate 1801F Firewall with wireless controller capability
- Quantum / Cloud-based AAA authentication solution
- Core Network: Cisco Nexus 9508 chassis with dual line cards supporting 10G / 40G
- Distribution Network: Cisco Catalyst 10G switches deployed across approximately 80+ buildings
- Centralized servers hosted in the University Data Centre
- Existing Fortinet-based Wi-Fi infrastructure still under OEM support
- The switches must connect as leaf switch below the distribution switches to allow seamless connectivity and maintain a three-tier architecture for security and safety

The bidder shall ensure coexistence, interoperability, and continuity of services with existing infrastructure without service disruption.

3. HIGH-LEVEL FUNCTIONAL REQUIREMENTS

The wireless infrastructure shall ensure:

- Seamless indoor and outdoor Wi-Fi coverage across designated academic, administrative, residential, and common areas
- Centralized, controller-based architecture with no standalone AP operation
- Secure, role-based access for students, staff, residents, guests, and IoT devices
- Robust authentication, authorization, accounting (AAA), and policy enforcement
- High availability, scalability, and future expansion capability
- Compliance with applicable standards, security guidelines, and University IT policies

4. DETAILED SCOPE OF WORK

4.1 SITE SURVEY AND NETWORK DESIGN
The bidder shall conduct a comprehensive RF and infrastructure site survey, including coverage planning, capacity analysis, and cabling assessment. Detailed RF heatmaps, access point placement plans, switch locations, and cabling routes shall be submitted for approval prior to implementation.

Deliverables: Site survey report, RF heatmaps, AP location plan, cabling layout.

4.2 SUPPLY OF ACTIVE NETWORK COMPONENTS (AS PER BOQ QUANTITIES)

The bidder shall supply new, unused, OEM-certified equipment as per the BOQ

All active equipment shall be supplied with a minimum of 5 years OEM warranty and technical support.

4.3 INSTALLATION AND MOUNTING OF ACCESS POINTS

The bidder shall install all indoor and outdoor access points at approved locations, including mounting, alignment, weather protection, and physical security. All required mounting accessories, clamps, brackets, and fixtures shall be provided by the bidder.

4.4 WIRELESS NETWORK CONFIGURATION

The bidder shall configure SSIDs, VLAN segmentation, access control policies, bandwidth management, QoS, user isolation, authentication mechanisms (captive portal / 802.1X / WPA2 / WPA3), RF optimization, fast roaming, logging, and monitoring.

4.5 CONTROLLER-BASED ARCHITECTURE (MANDATORY)

- All Access Points supplied under this tender must operate strictly in controller-based mode
- Standalone or autonomous operation shall not be permitted under any condition, including firmware replacement or factory reset
- The FortiGate 1801F firewall may be used as the wireless controller, if technically compatible
- If an alternate controller is proposed, it shall be provided free of cost
- Any AP capable of functioning in standalone mode shall be treated as non-compliant

4.6 CENTRALIZED MANAGEMENT CONSOLE & UNIFIED GUI (MANDATORY)

The bidder shall provide a single centralized management console for unified management of wireless access points and switches. The console shall support configuration, monitoring, reporting, firmware management, alerts, and role-based access control.

Fragmented or multi-console solutions shall not be acceptable.

4.7 CENTRALIZED PER-ACCESS POINT REPORTING (MANDATORY)

The solution must provide centralized, per-Access Point landscape reports from the same management console.

The reporting system shall clearly demonstrate per-AP operational and performance metrics, including:

- AP name, model, and serial number
- Uptime and first-seen timestamp
- Switch and port association
- Total data transmitted
- Maximum bandwidth per user
- Total users served
- Offline count and offline duration (last 24 hours)
- Peak concurrent users
- Firmware version
- Radio band(s)
- SSIDs served

Reports shall be on-demand, exportable (PDF/CSV), and retain historical data.

4.8 SWITCHING INFRASTRUCTURE DEPLOYMENT

The bidder shall install, configure, and integrate all PoE and non-PoE switches, including VLANs, uplinks, PoE budgeting, management IPs, and integration with the University's core and distribution network. All SFPs, patch cords, and rack accessories shall be included, without any additional cost to the university.

4.9 PASSIVE INFRASTRUCTURE AND STRUCTURED CABLING

The bidder shall supply and deploy structured cabling and passive components on a lump-sum basis, including conduits, junction boxes, labeling, earthing, dressing, and testing. All cabling shall be tested and certified, and reports submitted.

4.10 SECURITY, AUTHENTICATION, AND NETWORK INTEGRATION

The wireless network shall be integrated with existing firewall and AAA systems. This includes access policies, network segmentation, rogue AP detection, wireless intrusion monitoring, and hostel-specific security controls.

4.11 TESTING, VALIDATION, AND ACCEPTANCE

The bidder shall perform RF validation, roaming tests, throughput testing, authentication verification, and policy enforcement checks. Project acceptance shall be subject to successful User Acceptance Testing (UAT) and written approval by the University.

4.12 DOCUMENTATION AND HANDOVER

Complete documentation shall be provided, including network diagrams, as-built drawings, configuration backups, IP/VLAN schema, inventory, cabling test reports, and SOPs.

4.13 TRAINING AND KNOWLEDGE TRANSFER

The bidder shall provide training to University technical staff covering system operation, monitoring, troubleshooting, backup, and escalation procedures.

5. INTERNET BANDWIDTH CONSIDERATIONS

The wireless solution shall be designed to optimally utilize existing internet links:

- 1 × 1 Gbps NKN link (upgradable to 10 Gbps)
- 2 × 500 Mbps ISP links

The architecture shall support redundancy, load balancing, and scalability.

6. WARRANTY, SUPPORT, AND MAINTENANCE

All active equipment shall carry minimum 5 years OEM warranty. The bidder shall maintain the Wi-Fi infrastructure for the entire contract duration. AMC / CAMC may be quoted on a per-year basis.

7. SERVICE LEVEL AGREEMENT (SLA)

7.1 FAULT RESOLUTION SLA

Severity	Description	Response Time	Resolution Time
Critical	Campus-wide outage	≤ 2 Hours	≤ 8 Hours
High	Multiple APs / building outage	≤ 4 Hours	≤ 24 Hours
Medium	Single AP or switch failure	≤ 8 Hours	≤ 48 Hours

| Low | Configuration / performance issue | ≤ 24 Hours | ≤ 72 Hours |

7.2 HARDWARE REPLACEMENT SLA

Component	Replacement Time
Access Points	Next Business Day
Switches	Next Business Day
Controller	≤ 48 Hours

7.3 AVAILABILITY SLA

Parameter	Minimum Availability
Wi-Fi Network	≥ 99.5%
Management Console	≥ 99.9%

8. RATE CONTRACT AND PRICE VALIDITY

This engagement shall operate as a Rate Contract for one (1) year. Any additional Wi-Fi equipment required during this period shall be supplied at the same or lower rates quoted. Prices shall not increase due to foreign exchange variation or any other reason. The University reserves the right to negotiate prices.

9. CYBER SECURITY & AUDIT COMPLIANCE (MANDATORY)

The bidder shall ensure that the entire wireless solution complies with cyber security best practices and applicable Government of India guidelines, including but not limited to CERT-In advisories.

The bidder shall:

- Ensure secure configuration of wireless, switching, and controller components
- Disable insecure protocols and default credentials
- Enable logging, monitoring, and audit trails for administrative access
- Support security audits, vulnerability assessments, and configuration reviews as required by the University
- Rectify identified vulnerabilities at no additional cost during warranty / contract period
- Ensure that management access is role-based, authenticated, and logged

The University or its authorized agency may conduct security audits at any time during the contract period.

10. COMPLIANCE / DEVIATION MATRIX

The bidder shall submit a Compliance / Deviation Matrix in the format below. Non-submission or incomplete submission shall render the bid liable for rejection.

Sr. No.	Requirement	Mandatory	Compliance (Yes/No)	Remarks
1	Controller-based AP operation	Yes		
2	No standalone AP mode	Yes		
3	Centralized AP & Switch GUI	Yes		
4	Per-AP Landscape Reports	Yes		
5	Integration with FortiGate 1801F	Yes		
6	5-Year OEM Warranty	Yes		
7	Rate Contract for 1 Year	Yes		
8	Cyber Security & Audit Compliance	Yes		

11. Project Completion Criteria

The project shall be deemed complete only after successful installation, configuration, integration, testing, documentation submission, training, and written UAT sign-off by the University.

TECHNICAL SPECIFICATION OF INDOOR WI-FI 6 ACCESS POINT

Qty:400

General Requirements

Standard Compliance
The proposed access point must leverage Secure Networking to provide secure wireless access for the enterprise LAN edge that offers built-in security, end-to-end network visibility, and automated threat response.

The Wi-Fi Access Point must be TEC MTCTE certified

Type of Access Point

- Controller-Based (for secure environment)
- Stand-alone mode not valid
- Must not reset when power/network connection fluctuates

Deployment
Indoor

The OEM must be present in the Challengers/**Leaders Quadrant of the Gartner Magic Quadrant (2024 & 2025)** for wired and wireless LAN infrastructure.

OEM Warranty
Minimum **5 year on-site warranty** from OEM

Supported Encryption
WPA2 AES or higher

A. Hardware & Interface

Mounting Options

- Ceiling / T-Rail / Wall mountable (all accessories to be included in box)

Frequency of Operation

- Tri-Radio:
    - 2.4 GHz (up to 688 Mbps)
    - 5.0 GHz (up to 2.8 Gbps)
    - 6.0 GHz (up to 5.7 Gbps)

Interface Ports

- Minimum **1 x 100M/1000M/2.5G/5G Multigigabit Ethernet (RJ45)**
- **1 x RS-232 RJ45 Serial Port**

Power Options

- PoE (Power over Ethernet) support
- Must support **IEEE 802.3at/af PoE mode**
- Must be compatible with PoE+ port of L2 switch

Antenna

- Minimum 6 Antennas:
    - 2 x Dual Band Wi-Fi
    - 2 x 6 GHz Wi-Fi
    - 1 x BLE/ZigBee antenna
    - 1 x GPS antenna
- Antenna Gain: 4.2 dBi @ 2.4 GHz, 5.0 dBi @ 5 GHz, 5.1 dBi @ 6 GHz, 3.4 dBi BLE @ 2.4 GHz

Manageability

- Web interface for configuration
- Controller-based (Cloud or On-Premise) management supported

Wireless Signal Range

- Minimum **30 meters**

WLAN (SSID) Support

- Minimum **8 simultaneous SSIDs per radio**

Maximum Concurrent Users

- Minimum **500 clients per radio (Radio 1, Radio 2, and Radio 3)**

B. Networking & Security

Mesh Networking

- Supported

Quality of Service (QoS)

- Support for Voice over Wireless QoS
- Must support Call Admission Control

MU-MIMO Support

- Yes (Wave 2x2 MU-MIMO)

Wireless Intrusion Protection System (WIPS)

- Yes
- Must support Rogue Scan (background + dedicated)
- Must support WIPS/WIDS (background + dedicated)
- Must support Spectrum Analyzer and Packet Sniffer Mode

Wi-Fi Standards Supported

- Wi-Fi 6 (802.11ax) or higher
- Backward compatibility with IEEE 802.11a/b/e/g/h/i/j/k/n/r/u/v/w/ac
- Support for 802.1Q, 802.1X, 802.3ad, 802.3af, 802.3at, 802.3az

Authentication Protocols

- 802.1x supported
- Must support EAP-TLS, EAP-TTLS/MSCHAPv2, PEAPv0/EAP-MSCHAPv2, PEAPv1/EAP-GTC, EAP-SIM, EAP-AKA, EAP-FAST

Controller Link Redundancy

- AP must continue serving clients even if link to controller is down

Data Security

- End-to-end encrypted communication
- Wireless security standards: WPA, WPA2, WPA3 (with Beacon Protection)
- Support for Web Captive Portal, MAC allow/block lists
- Should support MACsec authentication on WAN port

B. Certifications

Mandatory Certifications

The offered Wi-Fi Access Points (or any product from the same product family/series) must be:

- **TEC MTCTE Certified** OR
- **Wi-Fi Certified** as per **TEC Standard GR TEC 38020:2021**

Additional Compliance

- Must be **Wi-Fi Alliance Certified**
- Must be **FCC, ROHS**
- Proposed AP must use **UL2043 plenum-rated material**
- OEM must appear in the **Leaders' Quadrant of Gartner Report (2024 & 2025)** for Enterprise Wired & Wireless LAN Infrastructure

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Qty:50

General Requirements

Standard Compliance
The Access Point should be enterprise-class, ruggedized **802.11ax Outdoor Wi-Fi 6 AP**, providing **three radios with 8 external antennas** and **two spatial streams**. The proposed access point must have a **Trusted Platform Module (TPM)**.

Type of Access Point

- Controller-Based (for secure environment)
- Stand-alone mode not valid
- Must not reset when power/network connection fluctuates

Deployment
Outdoor

The OEM must be present in the Challengers/**Leaders Quadrant of the Gartner Magic Quadrant (2024 & 2025)** for wired and wireless LAN infrastructure.

OEM Warranty
Minimum **5 year on-site warranty** from OEM

Supported Encryption
WPA2 AES or higher

A. Hardware & Interface

Antenna & Radios

- Tri-Radio: 5 GHz + 2.4 GHz + 6 GHz
- Omni-directional antenna
- Antenna Gain: 4.9 dBi @ 2.4 GHz, 5.8 dBi @ 5 GHz, 6.0 dBi @ 6 GHz
- GPS Antenna: 3.0 dBi peak gain
- Must have **4 Dual Band Wi-Fi + 4 Tri-Band Wi-Fi + 1 BLE/ZigBee (2.4 GHz) antenna**

Bluetooth/iBeacon

- Must support Bluetooth scanning and **iBeacon advertisement @10 dBm max TX power**

Performance

- Radio 1: Up to **1100 Mbps**
- Radio 2: Up to **2400 Mbps**
- Radio 3: Up to **4800 Mbps**
- MU-MIMO: Must support **Wave 4x4 MU-MIMO**
- Concurrent Users: Minimum **500 clients per radio (Radio 1 & 2)**

Interface Ports

- Minimum **1 x 10/100/1000 Mbps Base-T RJ45**
- **1 x RS-232 RJ45 Serial Port**

Power Options

- Must support **IEEE 802.3bt PoE++ mode**
- Bidder must include PoE++ switches of same OEM for which APs are proposed

Manageability

- Web interface for configuration
- Controller-based (Cloud or On-Premise) management supported

Ingress Protection

- Must support **IP67 rating** for outdoor ruggedization

Mounting Options

- Wall / Pole mountable (all accessories must be included in box)

B. Networking & Security

SSID & WLAN Support

- Must support SSIDs in **Bridge, Tunnel, and Mesh modes**
- Minimum **8 simultaneous SSIDs per radio**

Wi-Fi Standards Supported

- Wi-Fi 6 (802.11ax) or higher
- IEEE Standards: 802.11a/b/d/e/g/h/i/j/k/n/r/u/v/w/ac/ax, 802.11mc
- Ethernet Standards: 802.1Q, 802.1X, 802.3ad, 802.3at, 802.3bt, 802.3az, 802.3bz

Authentication Protocols

- 802.1x supported
- Must support: EAP-TLS, EAP-TTLS/MSCHAPv2, PEAPv0/EAP-MSCHAPv2, PEAPv1/EAP-GTC, EAP-SIM, EAP-AKA, EAP-FAST, EAP-TTLS/PAP

Data Security

- End-to-end encrypted communication
- Wireless Security: WPA, WPA2, WPA3 (with Beacon Protection)
- Must support Web Captive Portal, MAC allow/block lists
- Must support **MACsec authentication on WAN port**

Wireless Intrusion Protection & Monitoring

- Must support Rogue Scan (background + dedicated)
- Must support WIPS/WIDS (background + dedicated)
- Must support Spectrum Analyzer
- Must support Packet Sniffer Mode
- Must support **MDI/MDIX**

QoS

- Must support **QoS and Call Admission Control**
- Must support **Reliable Multicast Video** for stable streaming quality

Controller Link Redundancy

- AP must continue serving clients even if link to controller is down

Protocols

- Must support **IKEv2 in CAPWAP-data tunnel with IPsec-VPN encryption**

- Must support **Channel Bandwidth configuration in Sniffer Mode**

C. Management

- Must be manageable via **on-premise centralized controller**
- If controller is not available, bidder must propose **dedicated on-premise controller supporting 4000 APs from Day 1**
- Must support MAC address filtering (permit/exclude lists)
- Must support NAC policies (assign VLANs based on device properties, user groups, or EMS tags)
- Must support **Local AP diagnostics** via web portal and CLI

D. Physical & Environmental

- Operating Temperature: **–40°C to +60°C**
- Must be **RoHS compliant**

E. Certifications

Mandatory Certifications

The offered Wi-Fi Access Points (or any product from the same product family/series) must be:

- **TEC MTCTE Certified** OR
- **Wi-Fi Certified** as per **TEC Standard GR TEC 38020:2021**

Additional Compliance

- Must be **Wi-Fi Alliance Certified**
- Must be **FCC, ROHS**
- OEM must appear in the **Leaders' Quadrant of Gartner Report (2024 & 2025)** for Enterprise Wired & Wireless LAN Infrastructure

Qty:30

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1. General Requirements

1. The switch should be a manageable **Layer 2/3 access switch** with minimum **24 x 1G ports** and **4 x 10GE SFP+ uplink ports**.
   - o Must support **10 Gig SR, LR and copper transceivers**.
   - o Must deliver a **Secure, Simple, Scalable Ethernet solution** with outstanding security, performance, and manageability for threat.
   - o The switch should have a **PoE power budget of at least 370W**.
2. The switch must have an **RJ-45 Serial console port**.
3. The switch should be a **1 RU Rack-Mount Appliance**.
4. The switch should support a **switching capacity of at least 128 Gbps**.
5. The switch should support a **packet forwarding rate of minimum 190 Mpps** and network latency of ~1µs.
6. The switch should support at least **32k MAC address storage**.
7. The switch should support **VLANs**.
8. The switches must be of the **same OEM as the controller and access points** proposed.
9. The OEM must be present in the Challengers/**Leaders Quadrant of the Gartner Magic Quadrant (2024 & 2025)** for wired and wireless LAN infrastructure.
10. **OEM Warranty**
    Minimum **5 year on-site warranty** from OEM

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2. Layer 2 Requirements

1. Must support **Jumbo Frames** and **link auto-negotiation**.
2. Must support **Spanning Tree Protocol (MSTP)** natively and backwards compatibility with STP, including:
   - o **STP BPDU Guard**
   - o **STP Root Guard**
3. Must support **Edge Port / Port Fast**.
4. Must support **IEEE 802.1AX Link Aggregation**.
5. Must support **IEEE 802.1Q VLAN tagging**, **Private VLAN**, and **Voice VLAN**.
6. Must support **IEEE 802.3ad Link Aggregation with LACP**, with a maximum of 8 Link Aggregation Group size.
7. Must support **Virtual Wire** between two ports for troubleshooting.
8. Must support **Unicast/Multicast traffic balance over trunking ports**, based on:
   - o dst-ip, dst-mac, src-ip, src-mac, src-dst-ip, src-dst-mac.
9. Must support **TFTP**.
10. Must support **MAC Authentication** to allow only the configured MAC addresses to access the network.
11. Must support **802.1x port-based**, **802.1x MAC-based authentication**, and **MAC Access Bypass (MAB)**.
12. Must support **Guest VLAN assignment** for unauthorized users and option to specify a **Quarantine VLAN** for users whose authentication failed.
13. Must support **IEEE 802.1x Guest and Fallback VLAN**.
14. Must support **IEEE 802.1x Dynamic VLAN Assignment**.
15. Must support **RADIUS Accounting with CoA and Disconnect messages**.
16. Must support integration with **RADIUS, RADIUS CoA, and TACACS+ servers**.

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3. Authentication Requirements

1. Must support **LLDP, LLDP-MED**.
2. Must support **Storm Control** and **Loop Guard**.
3. Must support advanced storm control including:
   o Global burst-size control
   o Per-port storm control
   o MAC/IP/protocol-based VLAN assignment
4. Must support **Port Mirroring**.
5. Must support **Sticky MAC**.
6. Must support **TLS 1.3**.
7. Must support **in-built Network Access Control (NAC)** to automatically classify devices and assign VLANs based on:
   o MAC address
   o Hardware vendor
   o Device family/type
   o Operating System
   o User group

If this is not in-built, OEM must provide equivalent hardware/software to deliver this functionality.

8. Must support **quarantine of hosts/users via GUI** with isolation from rest of the LAN.

If not in-built, OEM must provide equivalent resources.

9. Must support **ACLs (Access Control Lists)**.
10. Bidder must include **all required components and licenses** to achieve the full specifications.

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4. Management

1. Must support **Telnet, SSHv2, HTTP, HTTPS** with IPv4 & IPv6 management.
2. Must support **SNMP v1, v2c, v3**.
3. Must be manageable via **both GUI and CLI**.
4. Must support **REST APIs** for configuration & monitoring.
5. Switches must be **ready for centralized management from Day 1**.
   o Bidder must provide all required hardware, software & licenses from Day 1.
6. Centralized management should provide:
   o **User visibility**
   o **Access control**
   o **Threat mitigation at switch port level**
   o **Automatic device discovery**
7. Must support **single-console centralized configuration, reporting & upgrades**.
8. Centralized management must support **robust monitoring** including:
   o Topology views
   o Port-level views
   o Status monitoring from single console
9. Must support **intra-VLAN traffic blocking** (direct client-to-client prevention).
10. Must allow **creation of switch profiles** for applying uniform settings.
11. Must allow **automatic malware isolation**, update rules, push new policies, and quarantine devices.
12. Must support **automation stitching** across events with the management platform.
13. Must support **complete topology views**:
- Physical topology (devices & connections)
- Logical topology (interfaces & connectivity)

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5. Environmental

1. Power: **100–240V AC, 50–60 Hz**
2. Operating Temperature: **0–45°C**
3. Humidity: **10–90% non-condensing**

6. Certifications

1. Must be **FCC, CE/EU, UL, RoHS2 compliant**.

Qty:15

## 1. General Requirements

1. Manageable switch should have minimum **8 x 2.5G/1G/100M/10M RJ45 ports** and **4 x 10G/1G/100 SFP+/SFP uplink ports**.
    o   The Ethernet switch being proposed must deliver a **Secure, Simple, Scalable Ethernet solution** with outstanding security, performance, and manageability against threats.
    o   The switch should have a **PoE power budget of 200W**.
2. Proposed switch should have a **RJ-45 Serial console port**.
3. The form factor of the proposed switch should be Rack Mountable.
4. Switching capacity of the proposed switch should be minimum **120 Gbps**.
5. Packet per second capacity should be minimum **200 Mpps** with network latency of ~1μs.
6. Switch should support minimum **32K MAC address entries**.
7. Switch should support **VLANs** and must have **1 GB Memory**.
8. Proposed switch vendor must be in the Challengers/**Leaders Quadrant of Gartner Magic Quadrant 2024 & 2025** for Wired & Wireless LAN Infrastructure.
9. **OEM Warranty**
    Minimum **5 year on-site warranty** from OEM

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2. Layer 2 Requirements

9. Should support **Jumbo frames** and **Auto-negotiation**.
10. Should support **Spanning Tree Protocol MSTP**, backward compatible with **STP**, **BPDU Guard**, and **Root Guard**.
11. Should support **Edge Port / Port Fast**; must also support **packet capture functionality**.
12. Must support **IEEE 802.1AX Link Aggregation**.
13. Must support **IEEE 802.1Q VLAN tagging, Private VLAN, Voice VLAN**.
14. Should support **IEEE 802.3ad Link Aggregation with LACP**, max 8 groups.
15. Should support **Virtual Wire** between two ports for troubleshooting.
16. Should support **Unicast/Multicast traffic balance** across trunking ports (dst-ip, dst-mac, src-ip, src-mac, src-dst-ip, src-dst-mac).
17. Should support **TFTP**.
18. Must support **MAC Authentication** to restrict network access to preconfigured MACs.
19. Must support **802.1x port-based**, **MAC-based authentication**, and **MAC Access Bypass (MAB)**.
20. Must support **Guest VLAN assignment** for unauthorized users and **Quarantine VLAN** for failed authentication.
21. Should support **IEEE 802.1x Guest and Fallback VLAN**.
22. Should support **IEEE 802.1x Dynamic VLAN Assignment**.
23. Must support **RADIUS accounting with CoA and disconnect messages**.
24. Must integrate with **RADIUS, RADIUS CoA, and TACACS+ servers**.

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3. Authentication Requirements

25. Must support **LLDP and LLDP-MED**.
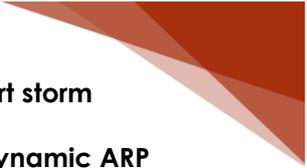
26. Must support **Storm Control**, **Loop Guard**, **Global burst-size control**, **Per-port storm control**, and **MAC/IP/Protocol-based VLAN assignment**.
27. Must support **IGMP Snooping v3, DHCP Snooping, IP Source Guard, and Dynamic ARP Inspection**.
28. Must support **Port Mirroring and sFlow v5**.
29. Must support **Sticky MAC**.
30. Must support **TLS 1.3**.
31. Must support **in-built NAC (Network Access Control)** to dynamically assign VLANs based on:
- MAC address
- Hardware vendor
- Device family / type
- OS type
- User group
    If not built-in, bidder must provide same OEM hardware/software to meet requirements.
32. Must allow **quarantine of hosts via GUI**. Quarantined MACs should be isolated from LAN. If not in-built, bidder must provide OEM resources.
33. Bidder must include all required **components & licenses** to meet specifications.
34. Switch must support **ACLs (Access Control Lists)**.

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4. Management

35. Must support **Telnet, SSHv2, HTTP, HTTPS** for IPv4 & IPv6.
36. Must support **SNMP v1, v2c, v3**.
37. Switch must be manageable via **both GUI and CLI**.
38. Must support **multiple configuration files** with **Dual-firmware image support**.
39. Must support **HTTP REST APIs** for configuration & monitoring.
40. Switches must be ready for **Centralized Management** from Day 1. Bidder to supply all licenses and resources.
41. Must provide:
- Visibility
- User access control
- Threat mitigation at port-level
42. Must support **auto-discovery by central management**.
43. Must support **centralized configuration, reporting, firmware upgrades** via single console.
44. Centralized management should support **robust monitoring**: topology view, port view, real-time status.
45. Must support **intra-VLAN traffic blocking** to prevent direct client-to-client visibility.
46. Must support **switch profiles** for applying consistent settings across switches.
47. Must allow **dynamic isolation of affected devices**, push policies, update rules, remove malware.
48. Must support **automation workflows (stitching)** across events via management tool.
49. Must support complete **topology views**:
- Physical Topology (all devices & connections)
- Logical Topology (interfaces & flows).

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5. Environment

50. Power Required: **100–240V AC, 50–60 Hz**.
51. Operating Temperature: **0°C to 45°C**.
52. Humidity: **10–90% non-condensing**.

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6. Certification

53. Must be **FCC, CE/EU, UL, RoHS2 Compliant**.

Qty:20

1. General Requirements

1. The switch must be manageable and have a minimum of **8 x 1G RJ45 ports** and **2 x 1GE SFP uplink ports**.
   - Must support **1 Gig SR, LR and copper transceivers**.
   - The switch must deliver a **Secure, Simple, Scalable Ethernet solution** with outstanding security, performance, and manageability against threats.
   - The switch should have a **PoE power budget of at least 130W**.
2. The switch must have a **RJ-45 Serial Console Port**.
3. The form factor should be **desktop based**.
4. The switch should support a **switching capacity of at least 20 Gbps**.
5. The switch should support a **packet forwarding rate of minimum 30 Mpps**, with network latency ~5 μs.
6. The switch should support a minimum of **8k MAC address entries**.
7. The switch should support **VLANs**.
8. The proposed switches must be of the **same OEM as the controller and access points**.
9. The vendor should appear in the Challengers/**Leaders' Quadrant of Gartner Magic Quadrant 2024 & 2025** for Wired and Wireless LAN Infrastructure.
10. **OEM Warranty**
    Minimum **5 year on-site warranty** from OEM

2. Layer 2 Requirements

1. Must support **Jumbo Frames** and **link auto-negotiation**.
2. Must support **Spanning Tree Protocol (MSTP)** natively, and backward compatibility with **STP**, including:
   - **BPDU Guard**
   - **Root Guard**
3. Must support **Edge Port / Port Fast**.
4. Must support **IEEE 802.1AX Link Aggregation**.
5. Must support **IEEE 802.1Q VLAN tagging, Private VLAN, and Voice VLAN**.
6. Must support **IEEE 802.3ad Link Aggregation with LACP**, maximum of 8 link aggregation groups.
7. Must support **Virtual Wire** between two ports for troubleshooting.
8. Must support **Unicast/Multicast traffic balance over trunking ports**, based on:
   - dst-ip, dst-mac, src-ip, src-mac, src-dst-ip, src-dst-mac.
9. Must support **TFTP**.
10. Must support **MAC Authentication** to allow only configured MACs.
11. Must support **802.1x port-based authentication**, **MAC-based authentication**, and **MAC Access Bypass (MAB)**.
12. Must support **Guest VLAN assignment** for unauthorized users, and allow **Quarantine VLAN** for failed authentications.
13. Must support **IEEE 802.1x Guest and Fallback VLAN**.
14. Must support **IEEE 802.1x Dynamic VLAN Assignment**.
15. Must support **RADIUS accounting with CoA and disconnect messages**.
16. Must support integration with **RADIUS, RADIUS CoA, and TACACS+ servers**.

3. Authentication Requirements

1. Must support **LLDP and LLDP-MED**.
2. Must support **Storm Control and Loop Guard**.

3. Must support advanced security features such as:
   - o Global burst-size control
   - o Per-port storm control
   - o MAC/IP/Protocol-based VLAN assignment
4. Must support **Port Mirroring**.
5. Must support **Sticky MAC**.
6. Must support **TLS 1.3**.
7. Must support **in-built Network Access Control (NAC)** to dynamically classify devices and assign VLANs based on:
   - o MAC address
   - o Hardware vendor
   - o Device family
   - o Device type
   - o Operating System
   - o User Group

If this functionality is not natively available, the bidder must provide equivalent hardware/software from the same OEM.

8. Must allow administrators to **quarantine hosts/users via GUI**, isolating them from LAN. If not built-in, bidder must provide OEM hardware/software to achieve this functionality.
9. Bidder must include **all required licenses and components** to meet specifications.
10. Must support **ACLs (Access Control Lists)**.

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4. Management

1. Must support **Telnet, SSHv2, HTTP, HTTPS** with IPv4 & IPv6.
2. Must support **SNMP v1, v2c, v3**.
3. Must be manageable via **both GUI and CLI**.
4. Must support **HTTP REST APIs** for configuration and monitoring.
5. Must be **ready for centralized management from Day 1**.
   - o Bidder must provide all necessary resources and licenses.
6. Must provide from Day 1:
   - o User Visibility
   - o Access Control
   - o Threat Mitigation at port-level
7. Must support **auto-discovery by central management**.
8. Must support **centralized configuration, reporting, and firmware upgrades** from a single console.
9. Centralized management must support **robust monitoring** with:
   - o Topology Views
   - o Port-Level Views
   - o Status Monitoring
10. Must support **intra-VLAN traffic blocking** to prevent client-to-client visibility.
11. Must support **switch profiles** for uniform configuration across multiple switches.
12. Must allow **dynamic isolation of devices**, pushing rules/policies, and removing malware.
13. Must support **automation stitching** between multiple events via management tools.
14. Must provide **complete topology visualization**, including:
- Physical topology (devices & connections)
- Logical topology (interfaces & flows).

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5. Environment

1. Power Requirement: **100–240V AC, 50–60 Hz**.
2. Operating Temperature: **0–45°C**.
3. Humidity: **10–90% non-condensing**.

6. Certification

1. Switch must be **FCC, CE/EU, UL, RoHS2 Compliant**.

Passive Cabling & Connectivity

- **Cat6 / Cat6A UTP cable** (for IP cameras up to 1 Gbps/10 Gbps)
- **Outdoor gel-filled Cat6A / Cat7** (UV & rodent resistant)
- **Single-mode / multimode fiber optic cable**
- **Fiber patch cords & pigtails** (LC/SC/FC as per design)
- **Fiber LIU / ODF** (rack-mount or wall-mount termination boxes)
- **Patch panels** (Cat6/Cat6A, 24/48 ports)
- **Keystone jacks / I/O faceplates**
- **RJ45 connectors & boots**
- **Conduit / HDPE ducts / GI pipes** for outdoor cable protection
- **Weatherproof junction boxes** (IP66/67 for outdoor cameras)
- **Earthing & surge protectors** (for lightning-prone sites)

Sr. No.	Description	Supplier's Response (Yes/No)	Page No.	Remarks / Document Reference
1.	Basic Details of the Firm: Name & full address of the firm with contact number, Name, designation, and contact details of authorized signatory, Email ID, and official communication address.			
2.	Copy of PAN Card. Copy of GST Registration Certificate. Firm Registration Certificate / Incorporation Certificate (for Pvt. Ltd. / LLP)			
3.	Copies of Income Tax Returns (ITRs) for the last three (3) financial years. CA-certified average annual turnover certificate showing ₹4.5 Crores or above for the last 3 years. Audited balance sheets/profit & loss statements.			
4.	Firm Registration Details: Valid registration number of the firm under the relevant Act, MSME/ Udyam Registration (if applicable).			
5.	Experience Documents: Copies of Work Orders / Completion Certificates for similar IT/server supply and installation in Govt./PSU/Universities/Boards/MNCs during the last 3 years.			
6.	Affidavit / Declaration • Affidavit on Non-Judicial Stamp Paper, duly attested by a Notary / 1st Class Magistrate, declaring that the firm has not been blacklisted or debarred by any State/Central Govt., PSU, or private institution. *(As per Annexure–II)*			
7.	OEM Authorization & Support Commitments • Bid-specific OEM Authorization Letter from the manufacturer. • Bid-specific OEM Support Commitment Letter confirming Minimum 5 years warranty coverage, and Lifecycle assurance and spare availability for the entire contract duration.			
8.	Compliance Certificates as per technical Compliance			
9.	**Warranty & Service Support Documents:** OEM's 5-year comprehensive warranty confirmation.			
10.	**Detailed BOQ With Make & Model of the Equipment Being Quoted**			

Note: All the Technical Documents should be uploaded on the e-tender portal. The non-submission/poor management of documents may lead to disqualification as well, with the Page no digitally printed on the bottom of the page

Sr. No.	Name of Item / Description	Unit	Qty	HSN Code	Unit Rate without GST (₹)	Unit Rate with GST (₹)	Total Rate (Qty × Unit Rate with GST) (₹)
A.	Indoor Wi-Fi 6 Access Point	Nos.	400				
B.	Outdoor Wi-Fi 6 Access Point	Nos.	50				
C.	24-Port PoE Switch	Nos.	30				
D.	8Port POE++	Nos.	15				
E.	8-Port PoE Switch	Nos.	20				
F	Passive Material	LumSum	1				
G	CAMC Price per year	Lum Sum	1				

All financial documents should be uploaded to the e-tender portal. The non-submission/poor management of documents may lead to disqualification.