INDIAN INSTITUTE OF TECHNOLOGY
(INDIAN SCHOOL OF MINES), DHANBAD

Notice Inviting Tender (NIT) in Two-Bid System
for
Supply and Installation of Wireless LAN Controller along with Access Points with 3 years warranty

Tender No.:**IIT(ISM)/CC/500295/ 2017-18**
Date: 20.11.2017

Bid Submission deadline: 20.12.2017, 1:00 P.M.

Tender Fee: Rs. 5000/- (Rs. Five Thousand only)

REGISTRAR
Indian Institute of Technology (Indian School of Mines), Dhanbad
P.O. – Indian School of Mines (I.S.M.)
DHANBAD –826004 (INDIA)
www.iitism.ac.in
GSTIN : 20AAAAI0686D1ZA

Notice Inviting Tender (NIT) in Two-Bid System
For
SUPPLY AND INSTALLATION OF WIRELESS LAN CONTROLLER ALONG WITH ACCESS POINTS WITH 3 YEARS WARRANTY

Tender No.:**IIT(ISM) /CC/ 500295 / 2017-18**
दिनांक/ Date: 20.11.2017

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CHAPTER 1
Instructions to Bidders

IIT (ISM), Dhanbad was formerly known as Indian School of Mines (ISM) and was a Deemed University before it got converted into an Institute of National Importance under the Institutes of Technology (Amendment)Act, 2016 passed by the Parliament of India and got the assent of President of India. The Indian School of Mines, now IIT (ISM), Dhanbad, was formally opened on 9th December 1926, by Lord Irwin, the then Viceroy of India to address the need for trained manpower related to mining activities in the country with disciplines of Mining and Applied Geology. In 1967, it was granted the status of a deemed to be university under Section 3 of UGC Act, 1956 and it was renamed as Indian Institute of Technology (Indian School of Mines) in 2016. It started as an institution to impart mining education, and today, has grown into a technical institution with various academic departments. IIT(ISM) is located in the mineral-rich region of India, in the city of Dhanbad in the state of Jharkhand. It is the third oldest institute [after IIT Roorkee and IIT (BHU) Varanasi] which got converted into an IIT.

IIT (ISM), Dhanbad intends to procure the equipment "Wireless LAN controller along with access points with 3 years warranty" to enrich its teaching and research facility at Dhanbad.

Reputed manufactures or authorized distributors are invited to submit their bid for "Wireless LAN controller along with access points with 3 years warranty" for IIT (ISM), Dhanbad as per this tender document in a Two-Bid System: - (a)Techno-Commercial (also termed as technical bid) bid (Part-1) consisting of all technical details of the item along with commercial terms and conditions, Tender Fee and EMD and (b) Price bid (Part-2) indicating pricefor their itemsmentioned in the technical bid. All instructions and terms and conditions must be followed, failing which bid(s) will liable to be rejected.

INSTRUCTIONS

1. Offer should be submitted under TWO-BID system in two separate sealed covers i.e. "Techno-commercial bid" and "Price bid".

2. Tender Number and tender submission deadline must be clearly mentioned on the top of the envelope.

3. a) In a tender, either the Indian agent on behalf of the principle/ OEM and the Principle/OEM itself can bid but both cannot bid simultaneously for the same item/product in the same tender.
   b) If an agent submit bid on behalf of the principle/ OEM, the same agent shall not submit a bid on behalf of another principle/ OEM in the same tender for the same item/product.

4. Bidder(s) must submit PAN given by Income Tax authorities, TIN and copy of PAN / TIN with the bid.

5. The offer must be submitted in **Two-Bid**. Tender should be dropped in the tender box kept in the office of **Deputy Registrar (Purchase & Stores), IIT (ISM), Dhanbad– 826004 (Jharkhand, India)**only. Bids may be submitted by Speed Post / Courier in sealed cover only, but IIT(ISM),

Dhanbad will not accept such bid if delivered/submitted to the office of the Deputy Registrar (Purchase & Stores section), IIT (ISM), Dhanbad after the submission deadline and such bids will be treated as Late bids / non-responsive bids. It will be the sole responsibility of the bidders that their bid should be submitted/ delivered as per bid submission deadline. IIT (ISM), Dhanbad will not be responsible for any delay or transit loss or late delivery of bids to the office of the Deputy Registrar. No Tender is to be handed over to any staff of IIT (ISM), Dhanbad personally. All bids / correspondences should be sent to the following address only: "Dy. Registrar (P&S), IIT (ISM), Dhanbad, P.O. – Indian School of Mines (ISM), DHANBAD – 826004 (Jharkhand, India)". Bids sent through Email/Fax or submitted in unsealed cover(s) will not be accepted and such bids will be treated as non-responsive bids.

6. Bid(s) must be sent sufficiently in advance so that it reaches the institute on or before the submission deadline. Bid(s) received after the submission deadline will not be considered.

7. Bid document(s) and all enclosures must contain the signature and seal of the authorised representative of the bidder.

8. The bidder quoting for item(s) as per this tender should be the registered to provide the item/services with the appropriate government authority. Copy of registration certificate should be enclosed with the tenders (part-1). Offers submitted without proper registration certificate shall be rejected summarily.

9. The bidder quoting for item(s) as per this tender should be the registered to provide the item/services with the appropriate government authority. Copy of registration certificate should be enclosed with the tenders (part-1). Offers submitted without proper registration certificate shall be rejected summarily.

10. The Bank/RTGS detail on the letter-head of the bidder(s) must be submitted along with the tenders (part-1). A copy of the cancelled cheque should also be attached.

11. Name and PAN/Voter Card No. /Aadhar No. of the authorized signatoryof the bidder(s) must be mentioned in the Form 7.2.

12. A copy of PAN/Voter Card/Aadhar Card of the authorized signatory of the bidder(s) must be attached with the Form 7.2

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CHAPTER 2
Terms and Conditions

The offer must comprise of the following, failing which it will be treated asnon-responsivebid hence will be rejected:

1. The bids under Two-Bid System will consist of two parts as per following details:**- a)**Techno-Commercial bid (Part 1) consisting of all technical details along with Commercial terms and conditions and EMD (Earnest Money Deposit) and Tender Cost, in the form of two separate Demand Drafts issued from any Nationalized / Scheduled commercial bank in favour of "Registrar, IIT (ISM), Dhanbad" and payable at "Dhanbad (Jharkhand, India)", and **b)**Price bid (Part 2) indicating price for the items / services mentioned in technical bid (part-1). In stage-one, only the Techno-Commercial (Part 1) shall be opened and evaluated. In stage-two, the Price bids (Part 2) of only the technically qualified and acceptable offers will be opened, for further evaluation.

2. Sealing and Marking of Bids:
   a) The Techno-Commercial bid (Part 1) must be sealed in a separate envelope (ENVELOPE-ONE) with Tender Cost and EMD in the form of two separate Demand Drafts, duly super-scribed as "**Techno-Commercial Bid (Part 1),Tender No.: IIT(ISM)/CC/ 500295 / 2017-18, Submission Deadline: 20.12.2017**" as per following details: -
   Tender Cost: Rs. 5000/- (Rs. Five Thousand only),
   EMD: Rs. 90,000/- (Rs. Ninety Thousand only).
   b) The Price bid (Part 2) should be sealed in separate envelopes (ENVELOPE-TWO), duly super-scribed as "**Price Bid (Part 2), Tender No.: IIT(ISM)/CC/ 500295 / 2017-18, Submission Deadline: 20.12.2017**".
   c) The above TWO separate sealed envelopes are to be put in a bigger envelope (ENVELOPE-THREE), which should also be sealed.
   d)Each of the above THREE envelopes MUST be super-scribed with **"Bid for Supply and Installation of Wireless LAN controller along with access points with 3 years warranty against Tender No.: IIT(ISM)/CC/500295/2017-18, Dated: 20.11.2017, Submission Deadline: 20.12.2017".**

3. The bids must be neatly typed/computer printed. Hand written offer will be rejected. Bids must carry the numbers of GSTIN/ sales tax / VAT / TIN / PAN / Service Tax Registration No. Bids must be in sealed envelope.

4. All relevant technical specifications/details of offered items, drawings, printed technical leaflets, and commercial details which are necessary to ensure that offer is complete in all respects should be attached with the technical bid documents.

5. A 'Compliance Statement' along with a certificate and duly signed that the tenderer satisfies the technical requirements given as per Form 7.5. The said statement should be in a tabular form with the columns: sl. no., (2) technical requirement as per NIT; (3) what is offered by the tenderer; and (4) status of compliance: Complied/Not complied).

6. IIT(ISM) does not bind itself to offer any explanation to those bidders whose Technical Bids have not been found acceptable by the Evaluation Committee of the Institute.

7. Following documents have to be furnished by the bidders with the technical bids (part-1):
   (a) Self attested copies of credentials in support of capability to undertake the supply/work.
   (b) Technical literature/catalogue with the detail specification of the material
   (c) Satisfactory performance certificate from their customers for same/similar supply/service must be enclosed alongwith the technical bid.
   (d) A copy of this tender document must be signed and sealed on all pages by the bidder(s) accepting the instructions and terms & conditions of the NIT and must be attached with the bid.
8. Price should be quoted on FOR, IIT(ISM) Dhanbad basis (in case of indigenous supply). In case of foreign supply, the price basis should be FOR IIT(ISM) Dhanbad basis only. The packing, forwarding, freight and transit insurance charges, if any, must be included in the price and should not be claimed separately. Duties & taxes, if applicable, are to be shown separately clarifying whether those are extra or included in the price. Educational discounts, if any, should be mentioned clearly. Justification of the price quoted must be provided with the Price Bid. For this, Price List of the OEM and purchase order of govt. organizations / IITs/ NITs/ CSIR Labs / ISRO labs etc. should be attached. Price bids of only technically qualified tenderers shall be opened in on a pre-notified date and time. Decision of IIT (ISM), Dhanbad in this regard will be final and binding by all the bidders.

9. IIT(ISM), Dhanbad is entitled for Excise Duty Exemption under Govt. of India notifications and is registered with DSIR, Govt. of India for this purpose. This may be taken into consideration while quoting minimum possible rate. Exemption Certificates can be issued in favour of manufacturers only, if it is mentioned in the bid. It will not be issued any Indian Agent/dealer or distributor at any circumstances. IIT(ISM) will provide only custom duty exemption certificate for availing concessional custom duty. IIT(ISM) will not pay any extra custom duty other than duty exemption certificate.

10. IIT (ISM), Dhanbad does not issue form ‘C’ or ‘D’ for concessional Sales tax/VAT. Hence, full rate of sales tax as applicable to educational institutions against the form of certificate should be indicated.

11. Tender Fee:- All bidder(s)s must have to submit a Demand Draft of required amount in the form of Demand Draft issued from any Nationalized/ Scheduled commercial Bank in favour of “Registrar, IIT (ISM), Dhanbad” payable at Dhanbad with the bid (part-1). Bid received without Tender Fee in part-1 (techno-commercial bid) will be rejected. Tender Fee is non-refundable. It must not be clubbed with Bid Security or EMD.

12. Bid Security or Earnest Money Deposit (EMD):- Required Amount for EMD must be submitted in the form of Demand Draft issued from any Nationalized/Scheduled commercial Bank in favour of Registrar, IIT (ISM), Dhanbad payable at Dhanbad with the bid (part-1). Bid received without EMD in part-1 (techno-commercial bid) will be rejected. It must not be clubbed with Tender Fee. No interest will be payable by IIT (ISM), Dhanbad on the Earnest Money Deposit. The earnest money of all the unsuccessful bidder(s) will be returned to the respective bidder(s) through bank / RTGS transfer without any interest within 60 (sixty) days only after placing the order / awarding the contract. The Earnest Money of successful bidder(s) shall be returned on receipt of Performance Security (Performance Bank Guarantee / PBG) as mentioned in this tender document. If the successful bidder(s) fails to furnish the performance security or fails to deliver/provide the item/installation/service as per the order’s terms and conditions within stipulated period, the earnest money shall be liable to be forfeited by IIT (ISM), Dhanbad. An undertaking to this is to be submitted.

13. Tender Fee and EMD must be in the two separate Demand Drafts.

14. **Performance Security or Performance Bank Guarantee (PBG):-** The successful bidder(s), on whom order will be placed, has to submit a performance security of 10% of the total order value at the earliest as per PO terms before release of any payment. Performance security has to be submitted in the form of Bank Guarantee/Demand Draft/FDR from any Nationalized/Scheduled commercial Bank in favour of the Registrar, IIT (ISM), Dhanbad. Performance security should remain valid for a period of two months beyond the date of completion of all contractual obligations of the successful bidder(s).No interest will be payable by IIT (ISM) Dhanbad on the Performance Security deposited. In case the contractor fails to provide satisfactory service, the Performance Security submitted by the bidder(s) is liable to be forfeited. An undertaking to this is to be submitted.

15. **Validity Period: -** The validity period of the tender should be clearly specified. It must be at least for **240(Two Hundred Forty) days** from opening of bids.

16. **Warranty**: All the active components must carry 3 years comprehensive warranty

17. Comprehensive Annual maintenance contract (AMC): The cost of 'annual maintenance contract (AMC)' and "comprehensive maintenance contract (CMC)" should be provided separately for extension of warranty for additional years (which is beyond the normal warranty period mentioned earlier) on yearly basis as an option with the price bid. Offer including terms & conditions should be quoted on per year basis to enable purchaser make AMC for any period from 01 to 05 years, if required.

18. Delivery Period and Liquidated Damage: As time of the essence for this procurement, hence the ordered materials/work complete in all respects are required to be delivered and installed within the period stipulated in the purchase order failing which liquidated damages of 1% per week for the delayed period subject to maximum of 5% of the total basic value of the order shall be deducted from the invoice of the supplier. Earliest/ expected delivery period should be clearly indicated. Packing should be suitable for 'Air freight'.

19. Inspection: Inspection shall be carried out at IIT (ISM), Dhanbad after arrival of the materials and decision of the Institute in this regard shall be final.

20. Rejection and Replacement: Rejection, if any, shall be notified to the supplier within 30 days of receipt and inspection of the material/workmanship. Rejected materials/work is to be removed by the supplier at his own risk and cost from IIT (ISM). Campus within 14 days of intimation of rejection. Defective Supplies are required to be replaced within 15 days of the removal of the rejected materials/work.

21. Risk Purchase: IIT (ISM) shall be at liberty to realize from the supplier the differential amount, if any, which it shall have to incur on purchase of the material/work at higher price(s) from elsewhere in the market, if the supplier, due to their fault, fails to supply the ordered quality and quantity of the material/work within the stipulated time.

22. Conditional offer will not be accepted.

23. Payment: In case of indigenous item i.e. inside India, payment may be released through RTGS / online payment mode against complete execution of the purchase order (PO) and submission of all the required documents as per the order within 30 days after satisfactory supply, inspection, installation/commissioning & acceptance and on submission of pre-receipted tax invoice, delivery challan, warranty certificate and installation report in triplicate and Performance Bank Guarantee. In case of foreign supply, i.e. outside India i.e., payment may be released through Letter of Credit as per policy of IIT (ISM), Dhanbad. The invoice should be duly certified by the Head of Deptt. of IIT (ISM), Dhanbad to which supply is made or any other IIT (ISM) official authorized for this purpose. IIT (ISM), Dhanbad does not make any advance payment. However, as a special case in foreign supply only, 90% Letter of Credit (LC) Payment term may be accepted against dispatch of required documents as per PO terms and PBG and balance 10% payment via wire transfer/RTGS will be released only after satisfactory installation report and other documents as per PO terms received from the user department from the firm.

24. Advance payment will not be released. Any bid having condition of advance payment will be treated as non-responsive bid.

25. Country of origin and port of shipment must be stated in the technical bid itself in case of foreign supply. Any change at later stage will not be accepted.

26. Name and address of Indian Agent, percentage of agency commission, if any and role of the Agent with respect to the subject supplies and a statement thereon that “Agency Commission is included in the bid.

27. Payment will be released through bank/ RTGS/Wire transfer. The payment will be released after statutory deductions and compensation of delay / liquidated damage (LD) / late delivery etc., if any.

28. Any payment will be released only after satisfactory completion of the work/installation and after submission the certified bill(s) / invoice(s).

29. All communications are to be addressed to the Registrar, IIT (ISM), Dhanbad quoting the Tender No. and Date.

30. IIT (ISM), Dhanbad reserves the right to accept or reject or cancel any or all tender notice or bid(s) or order(s) at any stage without assigning any reason thereof.

31. For any dispute, the place of jurisdiction shall be Dhanbad (Jharkhand, India) only.

32. It will be the sole responsibility of the bidder(s) that its bid should reach on or before the submission deadline to Registrar, IIT (ISM), Dhanbad.

33. **Governing Law:** The order, placed, will be the contract between the successful bidder(s) and IIT (ISM), Dhanbad and shall be governed by the LAWS of India and under the contract shall be taken by the parties only in Dhanbad (Jharkhand, India) to competent jurisdiction.

34. Bid(s) shall be submitted in official tender form / format only. If submitted in any other form / format, the same shall be rejected. No paper shall be detached from the tender. All pages must be numbered properly and there must be seal and sign of the bidder(s) on all the pages of its bid.

35. The name and address of the bidder(s) shall be clearly written in the space provided and no overwriting, correction, insertion shall be permitted in any part of the tender. The tender should be filled-in and submitted in strict accordance with the instructions laid down herein; otherwise the bid is liable to be rejected.

36. The bid is liable to be rejected if complete information is not given therein, or if the particulars and data (if any) asked for in the Schedule to the tender are not filled-in properly.

37. The successful bidder(s) will indemnify IIT (ISM), Dhanbad, in case of any damage or liability, which may arise on account of any act or omission directly/indirectly attributable to the bidder(s).

38. Dispute, if any arising out of providing the said service(s) shall be settled mutually or arbitration by sole Arbitrator to be appointed by the Registrar, IIT (ISM), Dhanbad at Dhanbad as per the provisions of the Indian arbitration and Conciliation Act, 1996 and the Rules framed there under. The award passed by the said sole Arbitrator, will be binding upon the parties. The arbitration proceedings shall be held at Dhanbad only.

39. The successful bidder(s) shall ensure that its authorized representative should be present at the time of any discussion at IIT (ISM), Dhanbad regarding the bid, for which no any kind of TA/DA/boarding/lodging will be facilitated by IIT (ISM) Dhanbad.

40. The schedules of items/services are required as per Chapter-4 of this tender. Bidder(s) must clearly indicate in its tenders, the different taxes and duties which they propose to charge mentioning clearly the present rate(s) thereof with appropriate reference. Vague offer like “duties as applicable” shall not be considered.

41. Price should be quoted at Price Bid (Part-2) (Chapter – 5 of this tender) only for the item(s)/services as mentioned at Chapter – 4 of this tender. The required item(s)/services to be delivered / provided on or before the dead line as per purchase order.

42. The bidder(s) should be registered with VAT, CST, SST, Income Tax, service tax authorities, GST etc. and to enclose the copies of the relevant certificate along with the technical bids. The agency must be authorized by appropriate government authority to deliver the items/services at the IIT (ISM) Dhanbad.

43. The successful bidder(s) will ensure that its employees/staff/personnel would strictly follow all the security instructions and rules and regulations of IIT (ISM), Dhanbad during their visit in the campus.

44. If the successful bidder(s) commits breach of any of the above or Order’s terms and conditions or is not able to deliver the item / provide the services / complete the work on time, the contract will be cancelled and security deposit shall be forfeited and a damage liability at the discretion of IIT (ISM), Dhanbad will be imposed on the bidder(s).

45. Bills / Invoices raised by the bidder(s) will be subject to applicable statutory deductions including T.D.S.

46. Necessary corrigendum(s), if required, will be issued at any stage, which must be acceptable to the bidder(s). Any corrigendum will be published on our website www.iitism.ac.in only. Bidder(s) must be in touch with our website www.iitism.ac.in for corrigendum(s). It will be sole responsibility of the bidder(s)s that they will go through the corrigendum(s) published, if any, on our website www.iitism.ac.in and submit its tender accordingly.

47. Shortlisted bidder(s) may be called for presentation / demonstration / meeting at IIT (ISM), Dhanbad office with a short notice. Request from the bidder(s) to change the date and time of presentation / demonstration / meeting will not be accepted. If the bidder(s) will not attend for the same, then their bid(s) will be treated as non-responsive and hence the bid(s) will not be considered for further process.

48. Price bids will be opened for those bidder(s) who are shortlisted and declared as technically qualified bidder(s) by the Committee of the IIT (ISM), Dhanbad. In this regard, decision of IIT (ISM), Dhanbad will be final and binding to all the bidder(s).

49. Please note that no part shipment/transshipment/third party shipment is acceptable to us.

50. Submission deadline / last date& time for submission of the bids and date & time for opening of the same are given in this bid. The bids will be opened as per IIT(ISM) rules. Authorized representative of bidders having authorization letter, a govt. issued ID card and an employment ID card issued by the bidder may present during bid opening at their own discretion. In case of submission deadline / last date or bid opening date is a holiday/declared as a holiday, then next working date will be the submission deadline / last date for submission/ opening of tender. Submission deadline or bid opening date& time will not be changed upon any request from the bidder side. However, it may be changed as per IIT(ISM) rules. In this regard, decision of the IIT (ISM), Dhanbad will be final and binding to all the bidders.

51. For the items / services, the bidders must ensure the required quality, quantity, materials, dimensions & other parameters and quote accordingly. In case items / services provided are not same as quoted/ordered, the claim for payment shall not be accepted. No payment, claims for such items / services shall be released. In this regard, decision of IIT (ISM), Dhanbad will final and binding to the bidders.

52. IIT (ISM), Dhanbad at its discretion may change the quantity/quality/parameters/upgrade the criteria/drop any item(s) or part thereof at any stage. In case of any dispute, the decision of IIT(ISM) shall be final and binding on the bidders/tenderers.

53. IIT (ISM), Dhanbad reserves the right to accept or reject any or all the bids in part or in full without assigning any reason and does not bind itself to accept the lowest bid. The decision of the competent authority of IIT (ISM), Dhanbad will be final and binding to the bidder(s).

54. All the bidders, those are interested to participate in this bid, must have to submit the technical specification of their bid in MS-Word Format in a CD with the technical bid. The CD must be marked with the NIT No. and submission deadline.

55. Professional(s) to be deployed by the successful bidder(s) for the supply of the item / installation / execution of the work in order to provide the item(s) /service(s) as per order must be well qualified.

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CHAPTER 3
Schedule of Requirements

Description	Details
NIT No.	**IIT(ISM)/CC/ 500295/ 2017-18**
Date of Tender	**20.11.2017**
Bid submission deadline	**20.12.2017, 1:00 P.M.**
Date of opening of the bids (technical part-1)	**20.12.2017, 4:00P.M.**

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CHAPTER 4
Specification and allied technical details

Scope of Work

1. Controller based Wireless LAN should be deployed on turnkey basis in the New Girls' Hostel so that all the rooms as well as corridor should be covered. The deployment must have capability to support 5000 users in near future simply by adding additional APs.
2. Bidder must submit duly filled Compliance Statement given in Annexure-2.
3. Bidder must provide solution for identity based login and provisioning for following:
    a) Users must be able to change their password using secure browser without the need of any resident software.
    b) Group user creation and deletion.
4. Bidder must clearly specify how point no.3 is achieved. Any software, license or subscription needed for the same must clearly be mentioned along with the price. Necessary hardware server, if required, may be provided by IIT(ISM), but bidder must provide the specifications for the same.
5. Deployment must support WINDOWS, Linux, Mac, Solaris and Android based devices such as Desktops, Laptops, TABs, and Mobiles etc. All popular browsers like IE, Google Chrome, Firefox, Safari etc must be supported.
6. Necessary accessories, like PVC conduit, GI Pipe, etc. for installation of Outdoor APs should be supplied.
7. Digging & filling of soils, cutting & filling of roads/ concrete area, fixing of GI poles will be in the bidder's scope.
8. All the cables should be well dressed and laid properly as per IIT(ISM)'s instruction.
9. All passive cabling work except for outdoor APs would be in IIT(ISM) scope.

Details of the Items required: -

1. Wireless LAN Controller:1No.

Make: Model:

S.No	Description	
I	Major Feature	OEM Should be present in the Latest Gartner report for wired & wireless networking.
		Proposed Solution Controller & AP should be of the same OEM.
II	Architecture	WLAN Controller should be Hardware appliance 1U Rack mountable/Software based. It should be supplied with 120 AP licenses for the campus. If Software based, hardware and OS to be specified and supplied. It should Support Cloud based control if required without upgrade.
II	Interfaces	It should have 4x1000Base-T interfaces.
IV	Scalability	Controller shall be capable of supporting 500 AP's with license upgradeability.
V	WLAN Features	Should support dual-band capable clients to the 5 GHz band on dual-band access points.
		Should balance wireless clients across APs on different channels, based upon the client load on the APs.

		Should support internal DHCP server.
		WLAN Solution Layer 3 roaming and mobility that allows a client to roam between APs on the same network but different client subnets, while preserving its IP address and existing data sessions.
VI	Simple Central Management	Unified access, policy, configuration, and management for thousands of devices
		Web-based administration with HTML5- enhanced graphical user interface
		User group policies can be applied network wide or to individual devices and enforced consistently across both wireless and wired networks
		Powerful policy template feature enables updates to groups of APs, branch routers, and switches with a few clicks
		Simple centralized firmware upgrades with distributed download functionality to decrease WAN utlilzation& download time
		Staged configuration and auto-provisioned image updates ensure devices are updated
VII	Network Policy features	WLAN Controller shall have inbuilt capability to inspect all traffic from each user session and allow or deny any traffic that does not satisfy specified policies.
		WLAN controller shall provide identity-based controls to enforce application-layer security and prioritization.
		WLAN solution shall be capable of controlling bandwidth per user, per VLAN/SSID etc.
VIII	RF Planning and Visualization	Network maps with integrated aerial views and automatic floor planning enable easy visualization of topology and status
		Real-time heat-maps show RF propagation within a network
		State-of-the-art Planning Tool with aerial maps, multi-floor auto-placement, coverage maps, and options to clone buildings and floors
		Built-in client and rogue location detection and placement on a floor plan
		Spectrum analysis to detect and identify sources of Wi-Fi interference
IX	WLAN Security	Should prevent students/users connecting to rogue AP and also prevent an outside user trying to connect to campus WLAN.
		Should prevent Ad-hoc connections (i.e. clients forming a network amongst themselves without an AP)
		Should prevent windows bridge (i.e. client that is associated to AP is also connected to wired network and enabled bridging between two interfaces)
X	Granular Control	Teacher View application included to monitor and redirect student wireless clients during class time
		Application Q0S and firewall with detailed user and device context-based policies
		Configuration of cloud proxy to split Internet and corporate VPN traffic with integration to Web sense SaaS
		Configuration of L2 and L3 IPsec VPNs
		Automatic and flexible IP address allocation and distribution across entire remote branch network
XI	Reporting/ Monitoring	Dashboard widgets organized into pre-defined or customizable perspectives
		Bandwidth network bandwidth control
		Real-time monitoring of alarms and events
XII	Environmental Specifications	Operating temperature: 32 to 104°F (0 to 40°C)
		Storage temperature: -4 to 158°F (-20 to 70°C)
		Relative humidity: 5% - 95% (noncondensing)

2. Access Point (Indoor):110 Nos.

Make: Model:

S.No	Description
1	**Hardware**
1.1	Access Points proposed must include radios for 2.4 GHz and 5 GHz with 802.11ac
1.2	The access point should be light weight and should support installations above drop ceiling, under ceiling or on wall
1.3	No additional hardware should be required to mount the access point
1.4	LED should be available for activity indication
1.5	Must have 1x IEEE 802.3 Gigabit Ethernet auto-sensing
1.6	The access point must have integrated antenna
2	**802.11 ac features**
2.1	Must support 3x3 multiple-input multiple-output (MIMO) with three spatial streams
2.2	Should have dual Radios and should support 256 QAM
2.3	Should support 1.9 Gbps data rates on dual concurrent radiooperations
2.4	Should support 20,40 and 80 MHz Channels
2.5	Should support Maximal Ratio Combining
3	**Radio Features**
3.1	Maximum conducted transmit power shall be 24.7 dBm on both 2.4 and 5 GHz with two antennas and EIRP complying to regulatory requirements
3.2	The antenna gain should be minimum 4 dBi.
4	**Networking features**
4.1	The access point or the controller should be capable of running a local DHCP Server
4.2	Access points must support a "controllerless" mode where one AP will provide full RF and network management.
4.3	Access points must provide automatic redundancy in case a site controller fails
4.4	The access point should support captive portal and local data base for authentication
4.5	Must have a dynamic or smart RF management features which allows WLAN to automatically and intelligently adapt to changes in the RF environment
4.6	WLAN Solution should support Mesh capabilities
5	**Roaming Features**
5.1	Along with a controller the Access Points should support fast roaming feature
5.2	**Security features**
5.3	The WLAN solution should have comprehensive integrated security features that include layer 2-7 statefulpacket filtering firewall including for branch and remote offices.
5.4	The access point should provide wireless IPS sensor support on both radios.
5.5	The WLAN Solution should support IP filtering and NAT
5.6	WLAN solution must support Application Visibility Control (Deep Packet Inspection)at both Controller and AP level
5.7	WLAN solution must support personal and enterprise WPA2 authentication for a staff WLAN concurrent with open access public WLAN
5.8	Security solution must provide Rogue AP detection by comparing the MAC address forwarding tables in common enterprise class Ethernet LAN switches
5.9	RogueDetection: 24x7 dual-band WIPS sensing and on-board IDS
5.10	Secure guest access (hotspot)with captive portal, IPSec and RADIUS Server
6	**Management Features**
6.1	WLAN solution should provide features that provides no touch AP discovery, adoption, provisioning
6.2	WLAN solution should provide features that provides other management functions including firmware push and statistics

6.3	Access points must support autonomous mode
6.4	Must support telnet and/or SSH login to APs directly for troubleshooting flexibility
7	**Power**
7.1	Integrated PoE Support
8	**QOS Support**
8.1	The Access Points should support WMM,WMM-UAPSD,802.1p,Diffserv and TOS
8.2	Support for Voice-over-wireless LAN (VoWLAN) quality of service (QoS) ensures toll quality, even with many simultaneous calls on a single access point.
8.3	Access point should support 802.11 DFS
9	**Solution requirements**
9.1	The AP should be capable of working as a virtual controller for location where the number of AP's is less than 64
9.2	AP's configured as Virtual Controller should also perform the function of an AP.
9.3	Access points must provide automatic redundancy in case a site controller fails
10	**Certification**
10.1	Wi-Fi Alliance (WFA) certified 802.11 a/b/g/n/ac
10.2	Access points must have WiFi Alliance certification for WPA2 Enterprise

3. Access Point (Outdoor Type-1):6 Nos.

Make: Model:

S.No	Description
1	**Hardware**
1.1	Access Points proposed must include radios for 2.4 GHz and 5 GHz with 802.11ac
1.2	The access point should be Outdoor IP67-rated, and should support installations on poll or wall
1.3	Appropriate additional hardware should be included to mount the access point from day one.
1.4	LED should be available for activity indication
1.5	Must have 2x IEEE 802.3 Gigabit Ethernet auto-sensing port
1.6	The access point must have external Omni antenna with minimum 8 dBi
2	**802.11 ac features**
2.1	Must support 3x3 multiple-input multiple-output (MIMO) with three spatial streams
2.2	Should have dual Radios and should support 256 QAM
2.3	Should support 2.3 Gbps data rates on dual concurrent radio operations
2.4	Should support 20,40 and 80 MHz Channels
2.5	Should support Maximal Ratio Combining
3	**Radio Features**
3.1	Maximum conducted transmit power shall be 24.7 dBm on both 2.4 and 5 GHz with two antennas and EIRP complying to regulatory requirements
4	**Networking features**
4.1	The access point or the controller should be capable of running a local DHCP Server
4.2	Access points must support a "controllerless" mode where one AP will provide full RF and network management.
4.3	Access points must provide automatic redundancy in case a site controller fails
4.4	The access point should support captive portal and local data base for authentication
4.5	Must have a dynamic or smart RF management features which allows WLAN to automatically and intelligently adapt to changes in the RF environment
4.6	WLAN Solution should support Mesh capabilities
5	**Roaming Features**
5.1	Along with a controller the Access Points should support fast roaming feature

6	**Security features**
6.1	The WLAN solution should have comprehensive integrated security features that include layer 2-7 statefulpacket filtering firewall including for branch and remote offices.
6.2	The access point should provide wireless IPS sensor support on both radios.
6.3	The WLAN Solution should support IP filtering and NAT
6.4	WLAN solution must support Application Visibility Control (Deep Packet Inspection)at both Controller and AP level
6.5	WLAN solution must support personal and enterprise WPA2 authentication for a staff WLAN concurrent with open access public WLAN
6.6	Security solution must provide Rogue AP detection by comparing the MAC address forwarding tables in common enterprise class Ethernet LAN switches
6.7	RogueDetection: 24x7 dual-band WIPS sensing and on-board IDS
6.8	Secure guest access (hotspot)with captive portal, IPSec and RADIUS Server
7	**Management Features**
7.1	WLAN solution should provide features that provides no touch AP discovery, adoption, provisioning
7.2	WLAN solution should provide features that provides other management functions including firmware push and statistics
7.3	Access points must support autonomous mode
7.4	Must support telnet and/or SSH login to APs directly for troubleshooting flexibility
8	**Power**
8.1	Integrated PoE Support
9	**QOS Support**
9.1	The Access Points should support WMM,WMM-UAPSD,802.1p,Diffserv and TOS
9.2	Support for Voice-over-wireless LAN (VoWLAN) quality of service (QoS) ensures toll quality, even with many simultaneous calls on a single access point.
9.3	Access point should support 802.11 DFS
10	**Solution requirements**
10.1	The AP should be capable of working as a virtual controller for location where the number of AP's is less than 64
10.2	AP's configured as Virtual Controller should also perform the function of an AP.
10.3	Access points must provide automatic redundancy in case a site controller fails
11	**Certification**
11.1	Wi-Fi Alliance (WFA) certified 802.11 a/b/g/n/ac
11.2	Access points must have WiFi Alliance certification for WPA2 Enterprise

4. Access Point (Outdoor Type-2):2 Nos.

Make: Model:

S.No	Description
1	**Hardware**
1.1	Access Points proposed must include radios for 2.4 GHz and 5 GHz with 802.11ac
1.2	The access point should be Outdoor IP67-rated, and should support installations on poll or wall
1.3	Appropriate additional hardware should be included to mount the access point from day one.
1.4	LED should be available for activity indication
1.5	Must have 2x IEEE 802.3 Gigabit Ethernet auto-sensing port
1.6	The access point must external Sector antenna with minimum 8 dBi
2	**802.11 ac features**
2.1	Must support 3x3 multiple-input multiple-output (MIMO) with three spatial streams

2.2	Should have dual Radios and should support 256 QAM
2.3	Should support 2.3 Gbps data rates on dual concurrent radio operations
2.4	Should support 20,40 and 80 MHz Channels
2.5	Should support Maximal Ratio Combining
3	**Radio Features**
3.1	Maximum conducted transmit power shall be 24.7 dBm on both 2.4 and 5 GHz with two antennas and EIRP complying to regulatory requirements
4	**Networking features**
4.1	The access point or the controller should be capable of running a local DHCP Server
4.2	Access points must support a "controllerless" mode where one AP will provide full RF and network management.
4.3	Access points must provide automatic redundancy in case a site controller fails
4.4	The access point should support captive portal and local data base for authentication
4.5	Must have a dynamic or smart RF management features which allows WLAN to automatically and intelligently adapt to changes in the RF environment
4.6	WLAN Solution should support Mesh capabilities
5	**Roaming Features**
5.1	Along with a controller the Access Points should support fast roaming feature
6	**Security features**
6.1	The WLAN solution should have comprehensive integrated security features that include layer 2-7 statefulpacket filtering firewall including for branch and remote offices.
6.2	The access point should provide wireless IPS sensor support on both radios.
6.3	The WLAN Solution should support IP filtering and NAT
6.4	WLAN solution must support Application Visibility Control (Deep Packet Inspection)at both Controller and AP level
6.5	WLAN solution must support personal and enterprise WPA2 authentication for a staff WLAN concurrent with open access public WLAN
6.6	Security solution must provide Rogue AP detection by comparing the MAC address forwarding tables in common enterprise class Ethernet LAN switches
6.7	RogueDetection: 24x7 dual-band WIPS sensing and on-board IDS
6.8	Secure guest access (hotspot)with captive portal, IPSec and RADIUS Server
7	**Management Features**
7.1	WLAN solution should provide features that provides no touch AP discovery, adoption, provisioning
7.2	WLAN solution should provide features that provides other management functions including firmware push and statistics
7.3	Access points must support autonomous mode
7.4	Must support telnet and/or SSH login to APs directly for troubleshooting flexibility
8	**Power**
8.1	Integrated PoE Support
9	**QOS Support**
9.1	The Access Points should support WMM,WMM-UAPSD,802.1p,Diffserv and TOS
9.2	Support for Voice-over-wireless LAN (VoWLAN) quality of service (QoS) ensures toll quality, even with many simultaneous calls on a single access point.
9.3	Access point should support 802.11 DFS
10	**Solution requirements**
10.1	The AP should be capable of working as a virtual controller for location where the number of AP's is less than 64
10.2	AP's configured as Virtual Controller should also perform the function of an AP.
10.3	Access points must provide automatic redundancy in case a site controller fails
11	**Certification**
11.1	Wi-Fi Alliance (WFA) certified 802.11 a/b/g/n/ac

11.2	Access points must have WiFi Alliance certification for WPA2 Enterprise

5. CAT 6 cable for connecting outdoor Access Points - 610 Mtrs.
6. **5 meters pole made of 3" GI pipe (ISI mark) with paddle for climbing (for Outdoor APs)- 6 Nos**. All poles should be mounted with solid concrete base and should have rust proof color coating.
7. 1" GI pipe (ISI mark) for laying CAT 6 cable for outdoor APs- 400 Mtrs.
8. Laying of CAT 6 cabling in 1" GI pipe on surface and ground – 400 Mtrs.

Note:

1. All the measurements for passive work are indicative to arrive L1 bidder. However, Institute will pay as per actual.
2. All Wi-Fi components (Item No. 1, 2, 3 and 4) should be from single OEM.
3. The bidder must submit technical literature/brochure in support of compliance.
4. The bidderhasto complete the project on turnkey basis.
5. All the active components must carry 3 years comprehensive warranty.

CHAPTER 5
PRICE SCHEDULE

Price Bid (Part 2)

PRICE BID

(Note: This price bid must be in a sealed cover and should be sealed separately from the techno-commercial bid cover.)

The bidder(s) shall quote the amount tendered/financial bids in the following format:
"Price Bid for**Supply and Installation, Wireless LAN controller along with access points with 3 years warranty**"I / We (_____) on behalf of M/s _____ _____ hereby undertake to provide **Supply and Installation, Wireless LAN controller along with access points with 3 years warranty**as specified in this tender and our technical bid for an amount of Rs. _____ (in words Rupees _____) for the item as in **Chapter –4.** The above quoted amount is inclusive of and in accordance with all the statutory liability, Service Charges, Administrative Charges, etc." as applicable.

Details of the prices quoted for the various items as per technical bid are as follows: -

Sl. No.	Full Description of Items with (HSN Code/SAC Code)	Qty.	Rate	Amount
		Packing & Forwarding (if any)		
		Total		
		GST		
		Freight (if any)		
		Installation (if any)		
Amount should be in figure as well as word		**Grand Total**		

……

_____
Signature of the bidder(s)/authorized signatory with seal

UNDERTAKING BY THE BIDDER(S)

I have carefully gone through the various terms and conditions mentioned in the tender document of **Supply and Installation, Wireless LAN controller along with access points with 3 years warranty**. I agree to all the conditions and offer to supply the item at IIT (ISM), Dhanbad. I am making this offer after carefully reading the conditions and understanding the same. I have acquainted with all the tasks required to be carried out, before making this offer. I will abide by the corrigendum(s), if any, to be issued by IIT (ISM) Dhanbad on its website www.iitism.ac.in. I hereby sign this undertaking as token of our acceptance of various conditions mentioned in tender document. Justification of the price is also attached herewith.

Place: _____

Dated: _____ Name & Signature of the bidder(s):

Address: _____

******

CHAPTER 6
Contract Form

With reference to the tender reference no.**IIT(ISM) /CC/ 500295 / 2017-18**, Dated: 20.11.2017 of IIT(ISM), Dhanbadfor Supply and Installation, **Wireless LAN controller along with access points with 3 years warranty**, we (bidder(s)'s name) _____accept all the instructions and terms and conditions of the tender and accordinglyhereby submit our quotation no. _____dated_____.

ALL TERMS AND CONDITIONS OF THE N.I.T. ARE ACCEPTED

1	Name and address of the bidder	
2	Telecom nos. of the bidder i.e. phone fax, & email id.	
3	Signature, name & designation of the person signing on behalf of the bidder& his/her office seal	
4.	Name & designation of the contact person & his phone/mobile no./e-mail ID	

We hereby declare that all statements/details made in this tender are true, complete and correct to the best of my knowledge and belief. I understand that in the event of any information being found false or incorrect at any stage or we do not satisfy any of the stated criteria, our offer is liable to be cancelled automatically and IIT (ISM), Dhanbad may take an action against this firm for such false information including legal action.

Signature:

Name:

Designation:

Bidder(s)'s Name:

Seal:

******

CHAPTER 7

Form7.1- Checklist
(to be submitted with technical bid part-1)

1.	Duly sealed and signed (on all pages) of the tender document.	
2.	Demand draft is attached as Tender Fee	
3.	Demand draft is attached as EMD.	
4.	Form No. 7.4 (Techno-Commercial bid, Part-1) is attached	
5.	Form No. 7.2and7.3 are attached with Techno-commercial bid (part-1)	
6.	Details of PAN, TIN, Service Tax Registration No., GST No. etc. is attached	
7.	Bank account details is attached	
8.	Complete contact details (Name, Postal address, E-mail address, phone no. mobile no.) is provided	
9.	Complete technical details attached	
10.	The Techno-Commercial bid (Part 1) is sealed in a separate envelope (ENVELOPE-ONE) with EMD and Tender Fee in the form Demand Draft and duly super-scribed as “Techno-Commercial bid (Part 1) - Bid for Supply and Installation, Wireless LAN controller along with access points with 3 years warranty	
11.	The Price bid (Part 2) is sealed in separate envelopes (ENVELOPE-TWO) and duly super-scribed as “Price Bid (Part 2) – Bid for Supply and Installation, Wireless LAN controller along with access points with 3 years warranty	
12.	A copy of PAN/Voter Card/Aadhar Card including ID card of the bidder (firm) of the authorized signatory of the bidder(s) is attached with the Form 7.1	

******

Form No.: 7.2

To,

The Registrar,

Indian Institute of Technology (Indian School of Mines), Dhanbad,

P.O. – I.S.M.

DHANBAD– 826004.

Ref.: Your Notice Inviting Tender No. IIT-ISM / CC / 500295 / 2017-18, Dated: 20.11.2017

Sub: Technical bid relating to **Supply and Installation, Wireless LAN controller along with access points with 3 years warranty**

Sir/ Madam,

1. I/We have gone through all Chapters of the tender document such as Instructions and Terms and conditions, minimum eligibility criteria, schedule of requirements, Specifications and allied technical details etc. as enlisted by you in your Notice Inviting Tender for the subject under reference.
2. I/We, hereby confirm that we have understood all the above and confirm my/our commitment to abide by them.
3. I/We also confirm my/our commitment to provide the services as enlisted in your Notice Inviting Tender under reference.

Seal and Signature ofauthorized signatory of the bidder(s)with date→

Documents	Yes/No	Document No. (If submitted a copy of the same)
PAN Card/Voter ID/Aadhaar Card		
Official ID Card		
Other Documents (specify below)		

(A copy of PAN/Voter Card/Aadhar Card and official ID card of the authorized signatory of the bidder(s) must be attached with this letter.).

******

Form No.:7.3

(to be submitted with technical bid part-1)

1. **Tender Fee (Non-refundable): DD NO. _____ Date:_____ Amount: Rs. Five Thousand only, Issued by bank and branch _____**
2. **Earnest Money Deposit: DD NO._____Date:_____ Amount:Rs. Seventy Six Thousand only, Issued by bank and branch _____**
3. **Validity of Quotation: days from the date submission deadline (minimum 240 days from the submission deadline)……**
4. **Performance Security or PBG: Will Be Submitted with the proforma invoice or invoice, if Purchase Order placed by I.I.T. (I.S.M.), Dhanbad**
5. **Payment Terms: Payment after supply, satisfactory installation and submission of all required documents as per Purchase Order after statuary deductions and penalty (liquidity damage), if any as decided by I.I.T. (I.S.M.), Dhanbad.**

ALL THE ABOVE MENTIONED TERMS & CONDITIONS ARE ACCEPTED BY US AND PROFORMA IS SUBMITTED FOR CONSIDERATION.

_____
Signature & Seal of the Bidder(s)

******

Form No.: 7.4

TECHNO-COMMERCIAL BID (Part-1)

TECHNICAL BID

1. Name of the Bidder(s).....

2.Name of the authorized person (who signs on the tender document on behalf of bidder(s)) with PAN/Voter Card No./Aadhar No. ……

3. Address of the Bidder(s)..... , Website ……

4. Phone No. ..... (Mobile).....Fax..... E-mail ……

Details of the item and its specification:

Sl. No	Particulars	Description

Name of the authorized signatory:

Name of the Bidder(s):

Contact No.:

_____

Signature & Seal of the Bidder(s)

****

Form No.: 7.5

To be attached with TECHNO-COMMERCIAL BID (Part-1)

Compliance Statement

2. Wireless LAN Controller:1No.

Make: Model:

S.No	Description		Compliance Yes/No
I	Major Feature	OEM Should be present in the Latest Gartner report for wired & wireless networking.	
		Proposed Solution Controller & AP should be of the same OEM.	
II	Architecture	WLAN Controller should be Hardware appliance 1U Rack mountable/Software based. It should be supplied with 120 AP licenses for the campus. If Software based, hardware and OS to be specified and supplied. It should Support Cloud based control if required without upgrade.	
III	Interfaces	It should have 4x1000Base-T interfaces.	
IV	Scalability	Controller shall be capable of supporting 500 AP's with license upgradeability.	
V	WLAN Features	Should support dual-band capable clients to the 5 GHz band on dual-band access points.	
		Should balance wireless clients across APs on different channels, based upon the client load on the APs.	
		Should support internal DHCP server.	
		WLAN Solution Layer 3 roaming and mobility that allows a client to roam between APs on the same network but different client subnets, while preserving its IP address and existing data sessions.	
VI	Simple Central Management	Unified access, policy, configuration, and management for thousands of devices	
		Web-based administration with HTML5- enhanced graphical user interface	
		User group policies can be applied network wide or to individual devices and enforced consistently across both wireless and wired networks	
		Powerful policy template feature enables updates to groups of APs, branch routers, and switches with a few clicks	
		Simple centralized firmware upgrades with distributed download functionality to decrease WAN utlilzation& download time	
		Staged configuration and auto-provisioned image updates ensure devices are updated	
VII	Network Policy features	WLAN Controller shall have inbuilt capability to inspect all traffic from each user session and allow or deny any traffic that does not satisfy specified policies.	
		WLAN controller shall provide identity-based controls to enforce application-layer security and prioritization.	
		WLAN solution shall be capable of controlling bandwidth per user, per VLAN/SSID etc.	
VIII	RF Planning and Visualization	Network maps with integrated aerial views and automatic floor planning enable easy visualization of topology and status	
		Real-time heat-maps show RF propagation within a network	

		State-of-the-art Planning Tool with aerial maps, multi-floor auto-placement, coverage maps, and options to clone buildings and floors	
		Built-in client and rogue location detection and placement on a floor plan	
		Spectrum analysis to detect and identify sources of Wi-Fi interference	
IX	WLAN Security	Should prevent students/users connecting to rogue AP and also prevent an outside user trying to connect to campus WLAN.	
		Should prevent Ad-hoc connections (i.e. clients forming a network amongst themselves without an AP)	
		Should prevent windows bridge (i.e. client that is associated to AP is also connected to wired network and enabled bridging between two interfaces)	
X	Granular Control	Teacher View application included to monitor and redirect student wireless clients during class time	
		Application Q0S and firewall with detailed user and device context-based policies	
		Configuration of cloud proxy to split Internet and corporate VPN traffic with integration to Web sense SaaS	
		Configuration of L2 and L3 IPsec VPNs	
		Automatic and flexible IP address allocation and distribution across entire remote branch network	
XI	Reporting/ Monitoring	Dashboard widgets organized into pre-defined or customizable perspectives	
		Bandwidth network bandwidth control	
		Real-time monitoring of alarms and events	
XII	Environmental Specifications	Operating temperature: 32 to 104°F (0 to 40°C)	
		Storage temperature: -4 to 158°F (-20 to 70°C)	
		Relative humidity: 5% - 95% (noncondensing)	

2. Access Point (Indoor):110 Nos.

Make: Model:

S.No	Description	Compliance (Yes/No)
1	**Hardware**	
1.1	Access Points proposed must include radios for 2.4 GHz and 5 GHz with 802.11ac	
1.2	The access point should be light weight and should support installations above drop ceiling, under ceiling or on wall	
1.3	No additional hardware should be required to mount the access point	
1.4	LED should be available for activity indication	
1.5	Must have 1x IEEE 802.3 Gigabit Ethernet auto-sensing	
1.6	The access point must have integrated antenna	
2	**802.11 ac features**	
2.1	Must support 3x3 multiple-input multiple-output (MIMO) with three spatial streams	
2.2	Should have dual Radios and should support 256 QAM	
2.3	Should support 1.9 Gbps data rates on dual concurrent radiooperations	
2.4	Should support 20,40 and 80 MHz Channels	
2.5	Should support Maximal Ratio Combining	
3	**Radio Features**	
3.1	Maximum conducted transmit power shall be 24.7 dBm on both 2.4 and 5 GHz with two antennas and EIRP complying to regulatory requirements	
3.2	The antenna gain should be minimum 4 dBi.	

4	**Networking features**	
4.1	The access point or the controller should be capable of running a local DHCP Server	
4.2	Access points must support a "controllerless" mode where one AP will provide full RF and network management.	
4.3	Access points must provide automatic redundancy in case a site controller fails	
4.4	The access point should support captive portal and local data base for authentication	
4.5	Must have a dynamic or smart RF management features which allows WLAN to automatically and intelligently adapt to changes in the RF environment	
4.6	WLAN Solution should support Mesh capabilities	
5	**Roaming Features**	
5.1	Along with a controller the Access Points should support fast roaming feature	
5.2	**Security features**	
5.3	The WLAN solution should have comprehensive integrated security features that include layer 2-7 statefulpacket filtering firewall including for branch and remote offices.	
5.4	The access point should provide wireless IPS sensor support on both radios.	
5.5	The WLAN Solution should support IP filtering and NAT	
5.6	WLAN solution must support Application Visibility Control (Deep Packet Inspection)at both Controller and AP level	
5.7	WLAN solution must support personal and enterprise WPA2 authentication for a staff WLAN concurrent with open access public WLAN	
5.8	Security solution must provide Rogue AP detection by comparing the MAC address forwarding tables in common enterprise class Ethernet LAN switches	
5.9	RogueDetection: 24x7 dual-band WIPS sensing and on-board IDS	
5.10	Secure guest access (hotspot)with captive portal, IPSec and RADIUS Server	
6	**Management Features**	
6.1	WLAN solution should provide features that provides no touch AP discovery, adoption, provisioning	
6.2	WLAN solution should provide features that provides other management functions including firmware push and statistics	
6.3	Access points must support autonomous mode	
6.4	Must support telnet and/or SSH login to APs directly for troubleshooting flexibility	
7	**Power**	
7.1	Integrated PoE Support	
8	**QOS Support**	
8.1	The Access Points should support WMM,WMM-UAPSD,802.1p,Diffserv and TOS	
8.2	Support for Voice-over-wireless LAN (VoWLAN) quality of service (QoS) ensures toll quality, even with many simultaneous calls on a single access point.	
8.3	Access point should support 802.11 DFS	
9	**Solution requirements**	
9.1	The AP should be capable of working as a virtual controller for location where the number of AP's is less than 64	
9.2	AP's configured as Virtual Controller should also perform the function of an AP.	
9.3	Access points must provide automatic redundancy in case a site controller fails	
10	**Certification**	
10.1	Wi-Fi Alliance (WFA) certified 802.11 a/b/g/n/ac	
10.2	Access points must have WiFi Alliance certification for WPA2 Enterprise	

3. Access Point (Outdoor Type-1):6 Nos.

Make: Model:

S.No	Description	Compliance Yes/No
1	**Hardware**	
1.1	Access Points proposed must include radios for 2.4 GHz and 5 GHz with 802.11ac	
1.2	The access point should be Outdoor IP67-rated, and should support installations on poll or wall	
1.3	Appropriate additional hardware should be included to mount the access point from day one.	
1.4	LED should be available for activity indication	
1.5	Must have 2x IEEE 802.3 Gigabit Ethernet auto-sensing port	
1.6	The access point must have external Omni antenna with minimum 8 dBi	
2	**802.11 ac features**	
2.1	Must support 3x3 multiple-input multiple-output (MIMO) with three spatial streams	
2.2	Should have dual Radios and should support 256 QAM	
2.3	Should support 2.3 Gbps data rates on dual concurrent radio operations	
2.4	Should support 20,40 and 80 MHz Channels	
2.5	Should support Maximal Ratio Combining	
3	**Radio Features**	
3.1	Maximum conducted transmit power shall be 24.7 dBm on both 2.4 and 5 GHz with two antennas and EIRP complying to regulatory requirements	
4	**Networking features**	
4.1	The access point or the controller should be capable of running a local DHCP Server	
4.2	Access points must support a "controllerless" mode where one AP will provide full RF and network management.	
4.3	Access points must provide automatic redundancy in case a site controller fails	
4.4	The access point should support captive portal and local data base for authentication	
4.5	Must have a dynamic or smart RF management features which allows WLAN to automatically and intelligently adapt to changes in the RF environment	
4.6	WLAN Solution should support Mesh capabilities	
5	**Roaming Features**	
5.1	Along with a controller the Access Points should support fast roaming feature	
6	**Security features**	
6.1	The WLAN solution should have comprehensive integrated security features that include layer 2-7 statefulpacket filtering firewall including for branch and remote offices.	
6.2	The access point should provide wireless IPS sensor support on both radios.	
6.3	The WLAN Solution should support IP filtering and NAT	
6.4	WLAN solution must support Application Visibility Control (Deep Packet Inspection)at both Controller and AP level	
6.5	WLAN solution must support personal and enterprise WPA2 authentication for a staff WLAN concurrent with open access public WLAN	
6.6	Security solution must provide Rogue AP detection by comparing the MAC address forwarding tables in common enterprise class Ethernet LAN switches	
6.7	RogueDetection: 24x7 dual-band WIPS sensing and on-board IDS	
6.8	Secure guest access (hotspot)with captive portal, IPSec and RADIUS Server	
7	**Management Features**	
7.1	WLAN solution should provide features that provides no touch AP discovery, adoption, provisioning	
7.2	WLAN solution should provide features that provides other management functions	

	including firmware push and statistics	
7.3	Access points must support autonomous mode	
7.4	Must support telnet and/or SSH login to APs directly for troubleshooting flexibility	
8	**Power**	
8.1	Integrated PoE Support	
9	**QOS Support**	
9.1	The Access Points should support WMM,WMM-UAPSD,802.1p,Diffserv and TOS	
9.2	Support for Voice-over-wireless LAN (VoWLAN) quality of service (QoS) ensures toll quality, even with many simultaneous calls on a single access point.	
9.3	Access point should support 802.11 DFS	
10	**Solution requirements**	
10.1	The AP should be capable of working as a virtual controller for location where the number of AP's is less than 64	
10.2	AP's configured as Virtual Controller should also perform the function of an AP.	
10.3	Access points must provide automatic redundancy in case a site controller fails	
11	**Certification**	
11.1	Wi-Fi Alliance (WFA) certified 802.11 a/b/g/n/ac	
11.2	Access points must have WiFi Alliance certification for WPA2 Enterprise	

4. Access Point (Outdoor Type-2):2 Nos.

Make: Model:

S.No	Description	Compliance Yes/No
1	**Hardware**	
1.1	Access Points proposed must include radios for 2.4 GHz and 5 GHz with 802.11ac	
1.2	The access point should be Outdoor IP67-rated, and should support installations on poll or wall	
1.3	Appropriate additional hardware should be included to mount the access point from day one.	
1.4	LED should be available for activity indication	
1.5	Must have 2x IEEE 802.3 Gigabit Ethernet auto-sensing port	
1.6	The access point must external Sector antenna with minimum 8 dBi	
2	**802.11 ac features**	
2.1	Must support 3x3 multiple-input multiple-output (MIMO) with three spatial streams	
2.2	Should have dual Radios and should support 256 QAM	
2.3	Should support 2.3 Gbps data rates on dual concurrent radio operations	
2.4	Should support 20,40 and 80 MHz Channels	
2.5	Should support Maximal Ratio Combining	
3	**Radio Features**	
3.1	Maximum conducted transmit power shall be 24.7 dBm on both 2.4 and 5 GHz with two antennas and EIRP complying to regulatory requirements	
4	**Networking features**	
4.1	The access point or the controller should be capable of running a local DHCP Server	
4.2	Access points must support a "controllerless" mode where one AP will provide full RF and network management.	
4.3	Access points must provide automatic redundancy in case a site controller fails	
4.4	The access point should support captive portal and local data base for authentication	
4.5	Must have a dynamic or smart RF management features which allows WLAN to automatically and intelligently adapt to changes in the RF environment	
4.6	WLAN Solution should support Mesh capabilities	

5	**Roaming Features**	
5.1	Along with a controller the Access Points should support fast roaming feature	
6	**Security features**	
6.1	The WLAN solution should have comprehensive integrated security features that include layer 2-7 statefulpacket filtering firewall including for branch and remote offices.	
6.2	The access point should provide wireless IPS sensor support on both radios.	
6.3	The WLAN Solution should support IP filtering and NAT	
6.4	WLAN solution must support Application Visibility Control (Deep Packet Inspection)at both Controller and AP level	
6.5	WLAN solution must support personal and enterprise WPA2 authentication for a staff WLAN concurrent with open access public WLAN	
6.6	Security solution must provide Rogue AP detection by comparing the MAC address forwarding tables in common enterprise class Ethernet LAN switches	
6.7	RogueDetection: 24x7 dual-band WIPS sensing and on-board IDS	
6.8	Secure guest access (hotspot)with captive portal, IPSec and RADIUS Server	
7	**Management Features**	
7.1	WLAN solution should provide features that provides no touch AP discovery, adoption, provisioning	
7.2	WLAN solution should provide features that provides other management functions including firmware push and statistics	
7.3	Access points must support autonomous mode	
7.4	Must support telnet and/or SSH login to APs directly for troubleshooting flexibility	
8	**Power**	
8.1	Integrated PoE Support	
9	**QOS Support**	
9.1	The Access Points should support WMM,WMM-UAPSD,802.1p,Diffserv and TOS	
9.2	Support for Voice-over-wireless LAN (VoWLAN) quality of service (QoS) ensures toll quality, even with many simultaneous calls on a single access point.	
9.3	Access point should support 802.11 DFS	
10	**Solution requirements**	
10.1	The AP should be capable of working as a virtual controller for location where the number of AP's is less than 64	
10.2	AP's configured as Virtual Controller should also perform the function of an AP.	
10.3	Access points must provide automatic redundancy in case a site controller fails	
11	**Certification**	
11.1	Wi-Fi Alliance (WFA) certified 802.11 a/b/g/n/ac	
11.2	Access points must have WiFi Alliance certification for WPA2 Enterprise	

S.No	Description	Compliance Yes/No
5.	CAT 6 cable for connecting outdoor Access Points - 610 Mtrs.	

S.No	Description	Compliance Yes/No
6.	5 meters pole made of 3” GI pipe (ISI mark) with paddle for climbing (for Outdoor APs)- 6 Nos. All poles should be mounted with solid concrete base and should have rust proof color coating.	

S.No	Description	Compliance Yes/No
7.	1” GI pipe (ISI mark) for laying CAT 6 cable for outdoor APs- 400 Mtrs.	

S.No	Description	Compliance Yes/No
8.	Laying of CAT 6 cabling in 1" GI pipe on surface and ground – 400 Mtrs.	

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Signature & Seal of the Bidder(s)

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