



**DATE: 22/08/2022**

**INVITATION OF BIDS FOR WIRELESS CONTROLLER AND WIRELESS  
ACCESS POINTS**

**ENQUIRY NO: IITGOA/2022-23/001 DTD 22/08/2022**

1. Quotations are invited in two bid system for the procurement of Wireless Controller and Wireless Access Points in separate envelopes. Please mention the above-mentioned title, enquiry number and due date for submission of bids on the sealed cover to avoid the bid being declared invalid.
2. The address and contact numbers for sending bids or seeking clarifications regarding this RFP are given below –

**Assistant Registrar  
(Stores & Purchase)  
IIT GOA, At GEC Campus,  
Farmagudi, Ponda – Goa.  
403401  
[ar\\_sp@iitgoa.ac.in](mailto:ar_sp@iitgoa.ac.in) / [purchase@iitgoa.ac.in](mailto:purchase@iitgoa.ac.in)**

3. This bid enquiry is divided into three parts as follows:
  - a. Part I – Contains General Information such as the time, place of submission and opening of tenders, Validity period of tenders, etc.
  - b. Part II – Contains Instructions for the Bidders and essential details of the items/services required, such as the Schedule of Requirements (SOR), Technical Specifications, Delivery Period, Place of Delivery and Consignee details.
  - c. Part III – Contains Price Bid format, other details etc.
4. This bid enquiry is being issued with no financial commitment and the Institute reserves the right to change or vary any part thereof at any stage and to withdraw it at any stage.



**Part I – General information**

Tender No.	IITGOA/2022-23/001		
Tender Date	22.08.2022		
Tender Category	Goods		
Tender Type	Open		
No. of Envelopes	2		
Covers Information / Submission of Bids			
Cover No.	Cover Type	Description	Document Type
1	Technical	Technical Specification, Tender Document, Schedule of Requirement and Compliance, Bidders Information, PAC, Declaration of Local Content, Undertaking for Bid Security etc.	.pdf
2	Financial	Financial Bid	.pdf
<p>Two Bid System:</p> <ul style="list-style-type: none"> <li>❖ The two-bid system will be followed for this tender. In this system bidder must submit their offer in separate sealed envelopes as – Technical Bid and Financial Bid.</li> <li>❖ Separate technical bid and financial bid envelopes should be clearly marked as "Envelope No. 1 - Technical Bid" and "Envelope No. 2 - Financial Bid".</li> <li>❖ Both these sealed covers are to be put in a bigger cover which should also be sealed and duly super scribed with our Tender No., Due Date and Name of the items quoted and to be submitted to the concern department/section mentioned in tender document.</li> <li>❖ Bids should be forwarded by Bidders under their original memo / letter head inter alia furnishing details like GST number, Bank Details etc. and complete postal &amp; e-mail address of their office.</li> </ul> <p>Note:</p> <ul style="list-style-type: none"> <li>• The technical offer should not contain any price information. If the price quoted is submitted in technical bid the tender will be rejected at the sole discretion of IIT Goa.</li> <li>• Initially Technical Bids will be opened and evaluated by the purchase committee. Financial Bid of only Technically qualified bidders will be opened later.</li> <li>• Contract/ Purchase Order will be awarded to the lowest bidder(L1) of Financial Bid among them.</li> </ul>			
Form of Contract	Supply		
Bid Validity (Days):	120 days		

Period of Work/Delivery Period (Days):	60 days
Pre-Bid Meeting Date & Time:	02-09-2022, 4:00 PM to 4.30 PM
Pre-Bid Meeting Place & Address:	CL-2 Classroom, Academic block-B, IIT Goa, GEC Campus, Farmagudi, Ponda-403401
Modification and Withdrawal of Bids:	A prospective bidder who requires clarification regarding the contents of the bidding documents shall notify to the Buyer in writing about the clarifications sought not later than 7 (Seven) days prior to the date of opening of the Bids. Copies of the query and clarification by the purchaser will be sent to all prospective bidders who have participated the bidding documents.
Clarification regarding contents of the tender document/RFP:	A bidder may modify or withdraw his bid after submission provided that the written notice of modification or withdrawal is received by the Buyer prior to deadline prescribed for submission of bids. A withdrawal notice may be sent by email but it should be followed by a signed confirmation copy to be sent by post and such signed confirmation should reach the purchaser not later than the deadline for submission of bids. No bid shall be modified after the deadline for submission of bids. No bid may be withdrawn in the interval between the deadline for submission of bids and expiration of the period of bid validity specified. Withdrawal of a bid during this period will result in Bidder's forfeiture of bid security.
Rejection of bids:	Canvassing by the Bidder in any form, unsolicited letter and post-tender correction may invoke summary rejection with forfeiture of EMD. Conditional tenders will be rejected.
Unwillingness to quote:	Bidders unwilling to quote should ensure that intimation to this effect reaches before the due date and time of opening of the Bid, failing which the defaulting Bidder may be delisted for the given range of items as mentioned in this RFP.
Contract Type:	Tender
Delivery Location:	Indian Institute of Technology Goa Goa Engineering College Campus, Bhausahab Bandodkar Technical Education Complex, Veling, Farmagudi, Ponda, Goa
Pin Code:	403401
Bid Submission End Date/Date & Time Submission:	12.09.2022 at 17:00hrs
Place of Submission of Bid:	Stores & Purchase Department, IIT Goa, Admin Block, At GEC Campus, Farmagudi, Ponda, Goa-403401
Bid Opening Date & Time:	13.09.2022 at 15:00 hrs
Bid Opening Place:	IIT Goa, Admin Block, At GEC Campus, Farmagudi, Ponda, Goa-403401

Other Terms & Conditions:	As mentioned in technical specification
Technical Clarification:	Name: System Administrator Center for IT Services IIT Goa  Email: <a href="mailto:sysad@iitgoa.ac.in">sysad@iitgoa.ac.in</a>
Tender Inviting Authority:	Name: Assistant Registrar (S&P) Address: Stores & Purchase Department, Email: <a href="mailto:ar_sp@iitgoa.ac.in">ar_sp@iitgoa.ac.in</a> / <a href="mailto:purchase@iitgoa.ac.in">purchase@iitgoa.ac.in</a>  IIT Goa, Admin Block, At GEC Campus, Farmagudi, Ponda, Goa - 403401
Signing Authority:	Registrar



**Part II: Instructions to Bidders**

1. **Schedule of Requirements** – List of items are attached as **Annexure ‘A’**
2. **Technical Details:** Technical details are attached in **Annexure ‘B’**
3. **Two-Bid System:** In respect of Two-bid system, Bidders are required to furnish clause by clause compliance of specifications bringing out clearly the deviations from specification, if any.

**i) The Bidders are advised to submit the following documents along with Technical Bid–**

- a) Compliance certificate in the following format;

Para of tender enquiry specification item-wise (As per annexure B)	Specification of Item offered	Compliance – whether YES/NO	In case of non-compliance, deviation to be specified in unambiguous terms

The offers must strictly be as per the specifications given in Annexure-A. At the same time, it must be kept in mind that mere copying of our specifications in the quotation shall not make the technical bid eligible for consideration. **A bid has to be supported with original catalogue (not of photo copy) of the quoted model duly signed by the OEM and the same must be sent along with the technical bid.** The quoted model should not become obsolete for a minimum period of 5 years (This is for the availability of spares). Therefore, the model quoted should invariably be highlighted in the leaflet/literature enclosed with the quotation. Non-compliance with above shall be treated as incomplete/ambiguous and the bid may be ignored without giving an opportunity to the bidder for further clarification/negotiation etc.

b) Bidders Information (**Annexure C**).

- c) A copy of Indian Agent Agreement / Authorization letter from OEM / OEMs along with tender to be submitted by All Indian Agents, if the manufacturer/supplier is based in abroad.
- d) GST and PAN details
- e) The Bidder should provide a list of customers of previous supply of a similar/ same range of equipment to IIT's/ NIT's/Universities with contact details.
- f) IIT Goa shall compare all substantially responsive bids to determine the lowest evaluated bid. The Institute is following and abide with the revised Public Procurement (Preference to Make in India), Order 2017 P- 45021/2/2017 – B. E. -II dated 16.09.20 issued by DPIIT, Ministry of Commerce and Industry, Govt. of India & subsequent amendments/instructions of Ministry. Accordingly, preference will be given to the make in India products while evaluating the bids. However, it is sole responsibility of the bidder(s) to specify the product quoted by them is of Make in India along with respective documentary evidence in the technical bid itself.
- g) Any bidder from a country which shares a land border with India will be eligible to bid in this tender only if the bidder is registered with the Department for Promotion of Industry and Internal Trade (DPIIT). This is also applicable for bidders bidding for finished goods procured directly/indirectly from the vendors from the countries sharing land border with India.
- h) The bidder must be either OEM or authorized dealers or resellers of the original manufacturer of the proposed equipment in India. Both cannot bid simultaneously for the same item/product in the same tender.

**ii) The following documents should be submitted along with Financial Bid–**

- a) Price Bid. (**Annexure B {5}**)
- b) Previous order of supplies/Justification of quoted rates. (**Annexure D**)

4. **Delivery Period** – Supply to be made within **60 days** from the effective date of issuance of Purchase Order. Please note that P.O. can be cancelled unilaterally by the Institute in case items are not received within the delivery period. Extension of delivery period will be at the sole discretion of the Institute, with applicability of LD clause.

5. **Delivery and Transportation** - Place for supply / installation is '**Indian Institute of Technology Goa, Ponda – Goa**'. The transportation cost & Insurance charges up to the destination is to be borne by the bidder.

### **Part III: Conditions of Contract**

1. Award of Contract:
  - i. IIT Goa shall award the contract to the technically qualified eligible BIDDER whose bid has been determined as the lowest evaluated financial bid.
  - ii. If more than one BIDDER happens to quote the same lowest price, IIT Goa reserves the right to award the contract to more than one BIDDER or any BIDDER.
2. Prices:
  - a. It is mandatory to quote prices in INR – F.O.R., IIT Goa basis only.
  - b. In case of multiple options of same product, bidders are requested to quote only one best option and not multiple options.
  - c. The supplier shall pay and bear all other liabilities, taxes and duties not specifically agreed by the Purchaser in the contract.
3. Pre-installation:
  - i. Please also mention the pre-installation requirements for the equipment like cabling, ambient temperature, humidity, civil work, weather specifications, power specifications, etc. When items are provided full performance satisfaction should be demonstrated.
4. Installation:
  - i. Supplier shall be responsible for installation / demonstration wherever applicable and for after sales service during the warranty period and thereafter as mentioned in the contract.
  - ii. Installation / demonstration to be arranged by the supplier free of cost and the same is to be done within 30 days of the arrival of the equipment at site.
5. Training:
  - i. The supplier shall submit training proposal for the operation and maintenance to the personnel of IIT Goa on the offered equipment/machinery.
  - ii. Wherever needed, our technical persons should be trained by the supplier at the project site free of cost. In case the person is to be trained at supplier's site abroad or in India it should be mentioned in the quotation clearly. The supplier should bear all the expenses for such training including 'to & fro' fares and lodging & boarding charges.
6. Terms of Payment:
  - i. 100% within 30 days after the delivery and successful installation of the items at IIT Goa.
  - ii. Payments towards AMC shall be paid at the end of each quarter/ year.
7. Legal Matter:
  - i. All disputes are subject to Goa jurisdiction only.
8. Rights to Accept, Reject, Amend, Modify:
  - i. The basic eligibility conditions and conditions of contract are broad guidelines for pre-qualification and the Director, IIT Goa reserves the right to relax / alter / modify / add / delete any or all the conditions without notice. The Director, IIT Goa also reserves the right to accept or reject any or all bids without assigning any reason in public interest.
9. Penalty/ Liquidated Damages:
  - i. Timely delivery is essence of the contract and hence if any consignment be delayed, liquidated damages at the rate 0.5% of the price of the delayed consignment, for each week or part whereof shall be levied and recovered subject to maximum of 10% of total purchase order value.
  - ii. IIT Goa reserves the right to cancel the order in case the delay is more than 6 weeks. Penalties if any will be recovered by forfeiting PBG at vendor's cost and risks.
10. Supervision of Erection and Commissioning:
  - i. Successful BIDDER shall depute concerned specialist, for supervision of erection & commissioning of the machine to be carried out. The successful BIDDER shall make necessary arrangement at their own expenses for stay, transport and other expenses of their Specialist during their stay in Goa which also includes imparting free of cost training to IIT Goa personnel.

**11. Performance Guarantee (GFR 2017 Rule 171):**

- i. Performance Guarantee Bond is mandatory.
- ii. Successful tenderer/ bidder should submit performance guarantee as prescribed above to be sent to The Assistant Registrar, Stores & Purchase Department, IIT Goa on or before 15 days from the due date of issue of order acknowledgement. The PBG to be furnished in the form of bank guarantee as per proforma or annexure of the tender documents, for an amount covering 3 % of the purchase order value.
- iii. The Performance Guarantee should be established in favour of "The Registrar, IIT Goa".
- iv. PBG to be established through any of the National Banks (whether situated at Goa or outstation) with a clause to enforced the same on their local branch of Goa or any scheduled bank (other than national bank) situated at Goa. Bonds issued by co-operative banks will not be accepted.
- v. Performance Guarantee Bond shall be for the due and faithfully performance of the contract and shall remain binding, notwithstanding such variations, alterations for extensions of time as may be made, given, conceded or agreed to between the successful tenderer and the purchaser under the terms & conditions of acceptance to the tender.
- vi. The successful tenderer is entirely responsible for due performance of the contract in letter and spirit and all other documents referred to in the acceptance of tenders.
- vii. The PBG shall be kept valid during the period of contract and shall continue to be enforceable for a period of one year/two years (as mentioned in the tender document) or up to warranty period, plus 60 days whichever is later from the date of order acknowledge. In case PBG needs extensions up to warranty period then supplier shall initiate extensions to PBG one month prior to expiry of PBG.
- viii. No interest shall be payable by the buyer to the Bidder on PBG.**



**List of items required**

<b>Sl. No.</b>	<b>Description of Items</b>	<b>Qty</b>
1	Wireless Controller (As per Annexure – 1)	01
2	Wireless Access Points (As per Annexure – 2)	165

**Procurement of Wireless Controller and wireless access points at IIT Goa**

**Introduction**

Indian Institute of Technology, Goa has a campus-wide network spread over the academic, hostel, and office areas, based on optical fibre as a backbone. This state-of-the-art scalable campus network is expanding on a regular basis as per Institute needs. In view of this, the Institute has decided to procure a wireless controller and controller-based indoor wireless access points.

**1. Scope of work:**

- A. The scope of the work includes supply, installation, commissioning, and integration of the Wireless controller and wireless access points over the IIT Goa campus as per the institute's requirement and maintenance of the same for five years.
- B. All items supplied must have a comprehensive onsite OEM warranty/ license for a period of five years. All the equipment mentioned in *Table-1* should be quoted from a single vendor.
- C. Selected bidders will have to support IIT Goa personnel to configure and integrate the Ethernet switches and indoor wireless access points as and when required within the warranty period without disturbing the current architecture of the network.
- D. Institute is having Cat 6 cable structure ready to deploy wireless access points. The selected bidder needs to integrate all the access points.
- E. The bidder will be liable for any hardware and software up-gradation for maintenance without any extra cost during the warranty period. The technical bid must contain the make, model, and part number of all supplied components along with the supported part code.

**2. Bidder Eligibility Criteria:**

- A. The bidder must have successfully completed two Wireless LAN Access Infrastructure (Wi-Fi Solution) implementations in India in the last three years; one must be a Wi-Fi Solution. The value of any one turnkey solution implemented must be at least Rs. 2 crores. A complete list and the customers' contact details must be provided.
- B. The bidder should not have been blacklisted by any IITs or similar Autonomous Institutions /Universities, Government /Public Sector Undertakings on the date of submission of this bid. A declaration from the bidder must be submitted.
- C. Bidders should be the manufacturer / authorized dealer. A letter of Authorization from the original equipment manufacturer (OEM) on the same and specific to the tender should be enclosed.
- D. The quoted products should not be under the end of sales or end of support in the next five years from the date of submission. Documentary proof must be submitted.
- E. The offered or a similar product from the same OEM of at least 1000 wireless access points must have been deployed in at least one of any IITs, NITs, or similar Autonomous Institutions /Universities; Related documents must be provided with contact person details.
- F. The bidder must have an office in Goa/ Maharashtra with Service/Support Engineers. Documentary proof must be submitted.

- G. Non-compliance with tender terms, non-submission of required documents, lack of clarity of the specifications, the contradiction between bidder specification and supporting documents, etc., may lead to rejection of the bid.

**3. Pre-bid Meeting:**

1. A pre-bid meeting is scheduled on 02-09-2022, from 4- 4.30 PM at IIT Goa regarding <b>"Site survey and resolution of technical queries, if any"</b> .
2. Bidders must follow IIT Goa COVID-19 advisory before visiting the campus.

**4. Technical Bid format.**

1. Must provide compliance certificate as per Annexure 1 and 2 format failing which bids will not be considered.
2. Must mention the offered product, OEM details, and delivery period in the following format.

Product Offered					
Sl. no.	Description	Qty	Make	Model	Country of Origin
1	Wireless Controller	01			
2	Wireless access points	165			

**5. Price Bid format.**

Sl. no.	Description	Qty	Unit Price with 5-year warranty In Rs.	Tax @ _____ in Rs.	Total Price in Rs.
1	Wireless Controller	01			
2	Wireless access points	165			
Total					
Grand Total					
In Words:					

**Annexure-1**

**Wireless Controller Specification**

Sl.no.	Specification required	Compliance (YES/ NO)	Remarks
1	<p>The WLC should be an on premise appliance based solution or VM based solution that can be deployed over different hypervisors like VM ware ESXi and KVM. Public Cloud controllers will not be accepted.</p> <p><b>NOTE:</b> Existing hardware resources at IIT Goa:</p> <ol style="list-style-type: none"><li>1. Hardware: Rack server VM</li><li>2. Processor: 4 core Intel Xeon CPU</li><li>3. Disk Space: 500GB HDD</li><li>4. RAM: 16 GB</li><li>5. 1 Gbps LAN port.</li></ol> <p>In case these are not enough, the bidder has to arrange the desired hypervisor licenses or hardware to deploy the software-based controller and should accordingly prepare the bid/ quote.</p>		
2	<p>The controller should support a cluster configuration which includes multiple controllers in it. Also for DC-DR purposes it should support intra cluster failovers.</p>		
3	<p>Controllers should support 2000 AP on a single appliance and license for 200AP from day one and should be scalable up to 3000 AP in a clustered configuration.</p>		
4	<p>Support for redundancy for primary controller as well all Licenses. In case the primary controller grows down all features should be supported by redundant controller.</p>		
5	<p>Each Controller/Cluster of Controller should have capacity to handle a minimum 25,000 or more Concurrent devices.</p>		
6	<p>Redundancy Features: WLC Must provide Active: Active with N+1 redundancy. The WLC's shall be implemented in cluster.</p>		
7	<p>Controller should support minimum 2000 WLAN's.</p>		
8	<p>The proposed WLAN solution must support a distributed forwarding/local breakout architecture in which only client authentication is tunneled to the centralized controller; all client data traffic is forwarded directly on towards its destination via the clients default gateway.</p> <p>Further:</p> <ol style="list-style-type: none"><li>a. Specify any loss of functionality; caveats or loss of capacity/performance is exhibited by the solution in this distributed forwarding mode.</li><li>b. On a per WLAN (SSID) basis there must be an option to tunnel traffic to the controller either unencrypted or encrypted format</li></ol>		

9	The Controller or WLAN solution should support multitenancy in which a Multi-tenancy, domain segmentation and containerization will enable secure delivery of WLAN services in complex and multi-geo context.		
10	Controller should provide air-time fairness between these different speed clients – slower clients should not be starved by the faster clients and faster clients should not adversely affected by slower clients.		
11	Controller should have the Ability to map SSID to VLAN and dynamic VLAN support for same SSID.		
12	Controller support automatic channel selection for interference avoidance.		
13	Controller should support external Captive Portal Integration - Web-services based API for external web-portals to integrate with the controller		
14	Controller should have the capability to limit/prevent clients from using static IP addresses thereby enhancing network efficiency and preventing network conflicts.		
15	The controller or WLAN solution should support client troubleshooting feature that allows an administrator to focus on a specific client device and its connectivity status. The tool should track the step-by-step progress of the client's connection, through 802.11 stages, RADIUS, EAP authentication, captive portal redirects, encryption key setup, DHCP, roaming, and more (depending on WLAN type).		
16	For troubleshooting purposes, the administrator of the controller must have the ability to remotely capture 802.11 and/or 802.3 frames from an access point without disrupting client access.		
17	In order to have good visibility on the utilization of an AP, the controller or proposed solution should be able to provide the following statistics for each AP: <b>a)</b> List of all the SSIDs deployed on each of the radio of the AP. <b>b)</b> Number of client devices associated on each radio <b>c)</b> Average client RSSI. <b>d)</b> Data sent/received <b>e)</b> Air Time utilization (%RX, %TX, %Busy) <b>f)</b> Statistics on retransmitted packets <b>g)</b> Graphical collation of various trend and troubleshooting data such as estimated channel capacity, current channel utilization, number of associated clients, RF pollution, other APs detected		

18	<p>The controller or proposed solution should support Role-based Access Controls that can provide policy controls on a single SSID such as:</p> <ul style="list-style-type: none"> <li><b>a)</b> Time of day access</li> <li><b>b)</b> VLAN assignment</li> <li><b>c)</b> Per device rate limiting</li> <li><b>d)</b> Deny/Allow specified device OS types</li> </ul>		
19	The controller should support in built spectrum analysis feature.		
20	The controller should support the ability to create different zones in which AP can be grouped logically or physically based on location. Ex: different buildings of a campus can be configured as different zones so that each zone will have different configuration and policies.		
21	The controller should support Hotspot 2.0 (passpoint).		
23	Access points can discover controllers on the same L2 domain without requiring any configuration on the access point.		
24	Access points can discover controllers across Layer-3 network through DHCP or DNS option		
25	WIRELESS SECURITY & Authentication: Open, 802.1x/EAP, PSK, WISPr, WPA, WPA2-AES. Fast EAP-SIM or EAP-PEAP. EAP-SIM, EAP-AKA, EAP-AKA over WLAN for 802.1X Wi-Fi. It should also support WPA3 and Enhanced Open.		
26	<p>To aid to physically locating rogue devices in conjunction with scanning at the APs the controller or the WLAN solution should be able to list/classify detected Rogue Devices. Further:</p> <ul style="list-style-type: none"> <li><b>a)</b> The information presented must include information about the detecting AP(s) and the rogues signal strength relative to them. It should display rogues on a map</li> <li><b>b)</b> The controller or the WLAN solution should be able to send a filtered notification to the administrator when a rogue device has been detected.</li> <li><b>c)</b> Neighbouring APs should be capable of de-authenticating clients from a malicious rogue device i.e. one which is spoofing the BSSID or SSID of a genuine managed AP.</li> <li><b>d)</b> The controller or proposed solution should support rogue classification policy. The policy should support rules for AdHoc Networks, Clear to Send (CTS) Abuse, De-authentication Flood, Disassociation Flood, Request to Send (RTS) Abuse, Excessive Power, MAC (BSSID) Spoofing, Same Network, NULL SSID and SSID Spoofing.</li> <li><b>e)</b> The WLAN or proposed solution should support Known, Ignore, Malicious and Rogue as part of WIPS classification types.</li> </ul>		

27	WLC Should support L2 Client Isolation so User cannot access each other's devices. Isolation should have option to apply on AP or SSID's.		
28	Support for Walled garden "Walled Garden" functionality to allow restricted access to select destinations by unauthorized wireless users.		
29	The proposed architecture should be based on controller based Architecture with thick AP deployment. While Encryption / decryption of 802.11 packets should be able to perform at the AP.		
30	The controller or WLAN solution should provide a captive portal in order to authenticate Guest users that are not part of the organization via a Guest pass key. Further the solution must: <b>a)</b> Provide access that allows non-technical staff to create Guest passes that are valid for a time limited duration. <b>b)</b> Allow the IT Administrator to view and delete individual Guest passes <b>c)</b> Allow for batch generation of Guest passes <b>d)</b> Provide a customizable Guest portal and guest pass instructions.		
31	The controller or overall solution must also support Self registration of Guests.		
32	The controller or WLAN solution must be capable of identifying device host OS type and the hostname. Further: a. It should be able to utilize the host OS information to provide per WLAN policy based access such as allow/deny access, rate limit and assign to VLAN		
33	The controller shall support Inter-Controller Wireless Roaming.		
34	The Wireless Mesh should support self-healing whereby if Root AP goes down then the Mesh AP should be able to automatically find and connect to another Root AP		
35	WLC should be able to present a customizable dashboard with information on the status of the WLAN network.		
36	The WLAN solution should support the import of floor plans for indoor AP.		
37	WLC or WLAN Solution should be able to raise critical alarms by sending an email.		
38	The controller or its integrated solution must support APIs for easier management and integration with existing network management devices. Provide the list of APIs supported.		
39	WLC or integrated solution should provide customized reporting of historical WLAN information.		
40	Controller or WLAN should support Filtering of Alarms and event Log based on APs, SSID or Zones.		

41	Controller should support Syslog support towards external syslog server		
42	Controller should support per SSID or dynamic Per user bandwidth Rate Limiting		
43	Controller should support Self-healing (on detection of RF interference or loss of RF coverage) and vendor should provide their Interference mitigation techniques .		
44	System must support Band Steering where 5 Ghz clients are forced to connect over 5Ghz Radio to provide better load balancing among 2.4Ghz and 5Ghz Radios.		
45	WLC shall support Quality of Service features like 802.11e based QoS enhancements, WMM or equivalent and U-APSD to provide best performance on Video applications.		
46	The controller failover shall not trigger client de- authentication and re-association.		
47	The controller should provide Application recognition to allow the administrator to gain insight on the applications in use and the bandwidth they consume per system and per user.		
48	Must provide all the accessories required to install and run the hardware/ software/ license.		



**Annexure-2**

**Wireless access point specification**

<b>Sl.no.</b>	<b>Specification required</b>	<b>Compliance (YES/ NO)</b>	<b>Remarks</b>
1	The Access Point should support the 802.11a, 802.11b, 802.11g and 11n standards. It should also support 802.11ac standard in the 5 GHz band and 802.11ax on both the bands.		
2	The proposed Access Point should be 802.11ax capable and operate as dual band radio. The AP should also have an BLE.		
3	The Access Point should have a minimum transmit power of 23dBm on both the bands.		
4	The Access Point should support 20, 40, 80, 160/80+80MHz channelization. It should support below channels as per the local country regulations.		
5	The Access Point should support 4x4 with 4 streams SU/MU MIMO on 5GHz and SU/MU MIMO on 2.4GHz. Data rates support up to 5 Gbps is preferred.		
6	The Access Point should be centrally configured and managed through the controller.		
7	The Access Point should be able to operate in full MIMO mode and the necessary power POE/POE+/uPOE/POH should be provided.		
8	Security mechanisms should be in place to protect the communication between the Wireless Controller and the Access Point.		
9	Since most radio interference come from the WLAN network itself the vendor should specify what mechanisms such as beam steering/ adaptive antenna technology/ beamforming are available in combination to focus the energy on the destination STA and minimize radio interference with the surrounding of the Access Point.		
10	Since the WLAN network will be using an unlicensed band the solution should have mechanisms that reduce the impact of interference generated by other radio equipment operating in the same band. Please Describe techniques supported.		
11	The Access Point should be able to detect clients that have dual-band capability and automatically steer those clients to use the 5GHz band instead of the 2.4GHz band.		

12	The Access Point should support 802.1q VLAN tagging.		
13	The Access Point should support · WPA-PSK, WPA-TKIP, WPA2 AES, WPA3-Personal, WPA3-Enterprise, 802.11i, Dynamic PSK and WIPS/WIDS.		
14	The AP should support the below advanced Wi-Fi features: <ul style="list-style-type: none"> <li>• WMM, Power Save, Tx Beamforming, LDPC,</li> <li>• STBC, 802.11r/k/v</li> <li>• Hotspot</li> <li>• Hotspot 2.0</li> <li>• Captive Portal</li> <li>• WISPr</li> </ul>		
15	The Access Point should implement the below Wi-Fi alliance standards: <ul style="list-style-type: none"> <li>• Passpoint®</li> <li>• WMM®</li> </ul>		
16	The Access Point should provide for concurrent support for high definition IP Video, Voice and Data application without needing any configuration change.		
17	The AP should support · QoS-based scheduling, Directed Multicast.		
18	The AP or WLAN solution should support below Policy Management Tools: <ul style="list-style-type: none"> <li>• Application Recognition and Control</li> <li>• Access Control Lists</li> <li>• Device Fingerprinting</li> <li>• Rate Limiting</li> </ul>		
19	The Access Point should support channel selection based on measuring throughput capacity in real time and switching to another channel should the capacity fall below the statistical average of all channels without using background scanning as a method.		
20	The Access Point should support Transmit power tuning in 1dB increments in order to reduce interference and RF hazards.		
21	The Access Point should have an integrated antenna with a gain of 2 dBi or more.		
22	The Access Point should support 16 BSSIDs on 2.4G radio and 5G radio together for multiple differentiated user services (e.g. voice).		
23	The Access Point should support 400 or more clients per AP.		
24	The Access Point should support IPv6 from day one.		
25	For troubleshooting purposes, the administrator should have the ability to remotely capture 802.11 and / or 802.3 frames from an Access Point without disrupting		

	client access.		
26	The AP should support mesh or provide better Receiver Sensitivity..		
27	Operating Temperature: 0°C to 40°C.		
28	Operating Humidity: up to 90% non-condensing.		
29	The Access Point should be Wi-Fi certified and WPC approved; ETA certificate to be enclosed.		
30	AP should have a plenum rating UL2043.		
31	The Access Point should have a mechanism for physical device locking.		
32	Must provide all the accessories required to install and run the hardware/ software/ license.		
33	Must support telnet and/or SSH login to APs directly for troubleshooting flexibility.		
34	Must support the ability to serve clients and monitor the RF environment concurrently.		

**(To be printed on letterhead of the bidder)**

**Annexure - C**

**Bidders Information**

1.	Name of the Bidder	
2.	Address of the Bidder	
3.	PAN No.	
4.	GSTN No.	
5.	State of GST Registration	
6.	E-mail	
7.	Contact Person's Name & Designation	
8.	Mobile No.	

### Reasonability of Prices

Please quote best minimum prices applicable for a premier Educational and Research Institution. The party must give details of at least two purchase orders identical or similar equipment, supplied to any IITS/Research Institutions/ other organisation as per below Format (to be enclosed in Financial Bid) along with the final price paid and details are mandatory.

### Previous Supply Orders

Name of the Firm \_\_\_\_\_

S.No.	PO No. & Date	Description & Quantity of ordered equipment	Value of Order	Date of completion of delivery as per contract	Remarks indicating reasons for late delivery, if any and justification of price difference of their supply order & those quoted to us	Has the equipment being installed satisfactorily (attach a certificate from the Purchaser/ Consigner)	Contact Person along with Telephone no., Fax No. and e-mail address

Place: \_\_\_\_\_

Date: \_\_\_\_\_

Signature and Seal of the Manufacturer / Bidder

## FORMAT FOR PERFORMANCE GUARANTEE BOND

(To be typed on **Non-judicial stamp paper** of the value of Indian Rupees of One Hundred) (TO BE ESTABLISHED THROUGH ANY OF THE NATIONAL BANKS (WHETHER SITUATED AT GOA OR OUTSTATION) WITH A CLAUSE TO ENFORCE THE SAME ON THEIR LOCAL BRANCH AT GOA OR ANY SCHEDULED BANK SITUATED AT GOA. BONDS ISSUED BY CO-OPERATIVE BANKS ARE NOT ACCEPTED.

To,  
The Registrar,  
Indian Institute of Technology, Goa  
Farmagudi, Ponda,  
Goa – 403401

### **LETTER OF GUARANTEE**

WHEREAS Indian Institute of Technology, Goa (Buyer) have invited Tenders vide Tender No..... Dt. .... for purchase of .....

AND

WHEREAS the said tender document requires that any eligible successful tenderer (seller) wishing to supply the equipment / machinery, etc. in response thereto shall establish an irrevocable Performance Guarantee Bond in favour of “**Registrar, Indian Institute of Technology, Goa**” in the form of Bank Guarantee for Rs ..... (**3% (three percent) of the purchase value**) and valid till **one year or up to warranty period plus sixty days whichever is later** from the date of issue of Purchase Order. Performance Guarantee Bond may be submitted within 15 (Fifteen) days from the date of Order Acknowledgment as a successful bidder.

NOW THIS BANK HEREBY GUARANTEES that in the event of the said tenderer (seller) failing to abide by any of the conditions referred in tender document / purchase order / performance of the equipment / machinery, etc. this Bank shall pay to Indian Institute of Technology, Goa on demand and without protest or demur Rs..... (Rupees.....).

This Bank further agrees that the decision of Indian Institute of Technology, Goa (Buyer) as to whether the said Tenderer (Seller) has committed a breach of any of the conditions referred in tender document / purchase order shall be final and binding.

We, ..... (name of the Bank & branch) hereby further agree that the Guarantee herein contained shall not be affected by any change in the constitution of the Tenderer (Seller) and/ or Indian Institute of Technology, Goa (Buyer).

#### **Notwithstanding anything contained herein:**

1. Our liability under this Bank Guarantee shall not exceed Rs. .... (Indian Rupees ..... only).
2. This Bank Guarantee shall be valid up to .....(date) and
3. We are liable to pay the guaranteed amount or any part thereof under this bank guarantee only and only if IIT Goa serve upon us a written claim or demand on or before .....(date).
4. This Bank further agrees that the claims if any, against this Bank Guarantee shall be enforceable at our branch office at ..... situated at ..... (Address of local branch).

Date:

Yours truly,  
Signature and seal of the Guarantor:

Name of Bank:

**Instruction to Bank:** Bank should note that on expiry of Bond Period, the Original Bond will not be returned to the Bank. Bank is requested to take appropriate necessary action on or after expiry of bond period.

**UNDERTAKING FOR BID SECURITY**

(To be issued by the bidder on company's letterhead in lieu of EMD)

To,  
The Registrar,  
Indian Institute of Technology Goa,  
At GEC Campus, Farmagudi, Ponda – Goa

We, M/s ..... (name of the firm), with ref. to enquiry no. .... dtd ..... hereby undertake that:

- 1) We accept all the terms and conditions of the tender document.
- 2) We accept that, we will not modify our bid during the bid validity period, submit performance guarantee within the stipulated period and honor the contract after award of contract.
- 3) In the event of any modification to our bid by us or failure on our part to honor the contract after final award or failure to submit performance guarantee, our firm may be debarred from participation in any tender/contract notified by Indian Institute of Technology, Goa for a period of one year.

Yours faithfully,  
(Signature of the bidder with date and seal)

## DECLARATION OF LOCAL CONTENT

(To be given on company letter head - For tender value below Rs.10 crores)  
(To be given by Statutory Auditor/Cost Auditor/Cost Accountant/CA for tender value above  
Rs.10 crores)

Date:

To,  
The Registrar,  
Indian Institute of Technology Goa,  
At GEC Campus, Farmagudi, Ponda - Goa

Sub: Declaration of Local content

Tender Reference No: \_\_\_\_\_

Name of Tender: - \_\_\_\_\_

**Country of Origin of Goods** being offered: \_\_\_\_\_  
We hereby declare that an item offered has \_\_\_\_\_ % local content. \_\_\_\_\_

“Local Content” means the amount of value added in India which shall, be the total value of the item being offered minus the value of the imported content in the item (including all customs duties) as a proportion of the total value, in percent.

We understand that, as per Office Memorandum dated 04/03/2021 issued by Ministry of Commerce and Industry, services such as transportation, insurance, installation, commissioning, training and after sales support like AMC/CMC etc. are not considered as local value addition.

“\*False declaration will be in breach of Code of Integrity under Rule 175(1)(i)(h) of the General Financial Rules for which a bidder or its successors can be debarred for up to two years as per Rule 151 (iii) of the General Financial Rules along with such other actions as may be permissible under law.”

Yours faithfully,

(Signature of the Bidder, with Official Seal)