

INDIAN ASSOCIATION FOR THE CULTIVATION OF SCIENCE
2A & 2B, Raja S.C. Mullick Road, Jadavpur, Kolkata-700032

NIT No.: IACS/CCRES/SD/2019-20/112

Date: 27/02/2020

Sealed tender in two bids system (technical bid and price bid) is invited from bonafide, resourceful and eligible manufacturer/exclusive distributor/vendors for **"Supply, installation, testing and commissioning of 153 Nos of Indoor APs, 4 No of Outdoor APs and 6 No. of 24 Port L2 managed PoE Network Switches."**

Part-I (Technical Bid) of the tender should contain technical specifications in detail as well as commercial terms and conditions. Part-II (Price Bid) should clearly indicate group-wise price, if needed, as mentioned in the technical bid. The Technical Bid and Price Bid are to be submitted in separately sealed envelopes, distinctly marked accordingly and both to be put inside another envelop, that should be sealed and superscribed with tender notice no. and due date. The bidders may submit bids duly signed in their own letterheads.

Completed tender bids should reach the office of the **Registrar, Indian Association for the Cultivation of Science (IACS), 2A & 2B Raja S. C. Mullick Road, Jadavpur, Kolkata-700032** on or before the scheduled date and time specified below:

Tender Notice No.	NIT No. IACS/CCRES/SD/2019-20/112 Date: 27/02/2020
Last date and time of submitting tender	16 March 2020 at 2.00 P.M. at Dispatch Section
Pre-bid meeting (date, time & place) to discuss technical specification	5 March 2020 at 3.00 P.M. at CCRES Office
Site Visit	5 March 2020 at 12:00 noon to 2:00 P.M.
Date and time of opening tender (Technical Spec)	16 March 2020 at 3.00 P.M. at CCRES Office
Date of Opening bid (Price bid)	16 March 2020 after evaluation of technical spec at CCRES Office
Contact	Email: ccsd@iacs.res.in Tel.+91 33 2473 4971 [Ext. 1210]

The technical bids will be opened first to judge/evaluate the technical specifications of the said switches and thereafter the price bids of only technically qualified bidders will be opened.

Technical Bid Evaluation: The Technical Bids will be evaluated in the presence of the representatives of intending bidders who will be able to clarify technical aspects of their bids, if any, required by the Technical Evaluation Team.

Opening of price-bid: The Price Bids of the bidders qualifying the technical bid will only be opened. The rest of the bids will be rejected.

Please note that IACS will not provide any accommodation or reimburse any expenses to any of the bidders for attending opening of technical bid.

Quotations received incomplete or beyond the stipulated time will be summarily rejected.

Bidders should submit their past experience for supplying and successful installation of similar switches to other research Institutes/Universities/other organizations in India. Please provide documentary proofs of such successful installation and supportive documents that the switches are running successfully.

All ACTIVE network equipment should be from the same OEM.

1. TECHNICAL BID

The technical bid should contain technical specifications and should be kept in a separate sealed envelope duly superscribed as 'TECHNICAL BID' on the outer cover of the envelope as already detailed above. **It should be clearly mentioned on the envelope as "Supply, installation, testing and commissioning of 153 Nos of Indoor APs, 4 No of Outdoor APs and 6 No. of 24 Port L2 managed PoE Network Switches".**

A list of other places where the instrument has been installed should also be provided. A compliance table (see below) must be prepared and submitted along with the technical bid.

Sr. No		Tender specification	Your offered instrument specification	Extent of compliance
1	Indoor Access Point			
2	Outdoor Access Point			
3	24 port managed L2 Switch			
4	60 licenses for APs (56 Indoor + 4 Outdoor)			

2. Bill of materials for Data Centre in IACS Active Component

Sl. No	Description	Quantity No
1	60 licenses (LIC-CT5520-1A) for APs (56 Indoor + 4 Outdoor) compatible with WLC AIRCT5520K9	1 No
2	Indoor Access Point	153 Nos
3	Outdoor Access Point	4 Nos
4	Layer 2 Switch Managed 24 port 10/100/1000 Mbps with 4 X 1G SFP Port (PoE)	6 Nos.
5	2 Years support for items 1-4	Lump-sum

2.1.1: Access Point (Indoor)

Sl.No.	Specification	Complied	If No
1	Access Points proposed must include radios for 2.4 GHz and 5 GHz with 802.11ac Wave 2.		
2	An access point must include a standard OEM provided Mounting brackets for mounting on Celing or Roof top.		
3	Access Point shall support Console port that uses Standard Port (RJ-45) type connection		
4	Should have two RJ-45 auto-sensing 10/100/1000 Mbps LAN port .		
5	Access Point should have USB port for future requirement.		
6	Must have at least 3 dBi Antenna gain on each radios		
7	Must support 4x4 MIMO for both 802.11ac and 802.11n client		
8	Must provide dynamic dual 5 ghz radio mode for high density requirement from day 1.		
9	Must Support minimum aggregate data rate of 5 Gbps on dual 5ghz mode with 160 mhz channel support and standard 256 QAM modulation.		
10	Must support minimum of 22dbm of transmit power in both 2.4Ghz		

	and 5Ghz radios. And should follow the local regulatory Norms.		
11	Must support AP enforced load-balance between 2.4Ghz and 5Ghz band.		
12	Must have -97 dB or better Receiver Sensitivity.		
13	Should support locally-significant certificates on the APs using a Public Key Infrastructure (PKI).		
14	Must support 16 WLANs per AP for SSID deployment flexibility.		
15	Must support telnet and/or SSH login to APs directly for troubleshooting flexibility.		
16	Must support Power over Ethernet, local power(DC Power), and power injectors.		
17	802.11e and WMM		

2.1.2: Access Point (Outdoor)

Sl No	Specification	Complied	If No
1	Access Points proposed must include radios for both 2.4 GHz and 5 GHz.		
2	AP should support dual band antenna ports.		
3	Must have external omnidirectional antenna		
4	Must have -88 dB or better Receiver Sensitivity.		
5	Must support 2X2 multiple-input multiple-output (MIMO) with two spatial streams		
6	Must support 802.11ac, Wave 2 and backward compatible with 802.11n standards		
7	Must support datarates upto 1.3 Gbps on 5Ghz radio.		
8	Must support 80 MHz wide channels in 5 GHz.		
9	Must support WAP enforced load-balance between 2.4Ghz and 5Ghz band.		
10	Should support configuring the access point as network connected sensor to access any network location covered by the access point to get real-time Spectrum analysis data		
11	Must support upto 28dbm or heigher of transmit power		

12	Access point should 802.11ac, 802.11n and 802.11a/b/g Beamforming		
13	The Wireless Backhaul/Mesh shall operate in 5Ghz		
14	Support Encrypted and authenticated connectivity between all backhaul components		
15	Access point should have multiple wired uplink interfaces including 10/100/1000BASE-T Ethernet autosensing (RJ-45) and a build-in SFP port		
16	Wireless AP should support beamforming technology to improve downlink performance of all mobile		
17	devices, including one-, two-, and three-spatial-stream devices on 802.11ac without taking the inputs from client.		
18	Wireless AP Should able to detect and classify non-Wi-Fi wireless transmissions.		
19	Should support configuring the access point as network connected sensor to access any network location covered by the access point to get real-time Spectrum analysis data.		
20	Must incorporate radio resource management for power, channel, coverage hole detection and performance optimization		
21	Access point shall support powering from AC /DC/ UPOE.		
22	Access point shall support pole, wall and Cable strand mounting options.		
23	The equipment shall support up to 100 MPH sustained winds & 140 MPH wind gusts.		
24	The Access point shall be IP67 and NEMA rated		
25	The Access point shall support operating temperature of -40 to 65°C		
26	The Access point shall support Storage temperature of -50 to 70°C		
27	802.11e and WMM		
28	WiFi Alliance Certification for WMM and WMM power save		
29	Must support Reliable Multicast to Unicast conversion to maintain video quality at AP level		
30	Must support QoS and Video Call Admission Control capabilities.		

31	Must support the ability to serve clients and monitor the RF environment concurrently.		
32	Must support Spectrum analysis including @ 80 MHz		
33	Same model AP that serves clients must be able to be dedicated to monitoring the RF environment.		
34	Should support mesh capabilities for temporary connectivity in areas with no Ethernet cabling.		
35	Should have and option of configuring all the antennae port via software to run all on dual band or any single band configuration.		
36	Must support 16 WLANs per AP for BSSID deployment flexibility.		
37	Must support telnet and SSH login to APs directly for troubleshooting flexibility.		

2.1.3: Layer 2 Switch Managed 24 port 10/100/1000 Mbps with 4 X 1G SFP Port (PoE)

	General Features	Complied	If No
1	The switch should have minimum 24 x 10/100/1000 Base-T POE/POE+ Ports & 4 X 1000 Base-X SFP slots.		
2	Future support for Redundant Power supply		
3	Should have fan for proper cooling.		
	Performance		
4	At least 200 Gbps switching bandwidth		
5	Forwarding rate – At least 70 Mpps.		
6	Configurable at least 16000 MAC addresses		
7	The switch should support stacking with 80 Gbps Stacking bandwidth to stack upto 8 switches into a single virtual switch.		
8	At least DRAM 512 MB and 128 MB Flash		
	Layer-2 Features		

9	IEEE 802.1Q VLAN encapsulation. At least 1000 VLANs should be supported. Support for 4000 VLAN IDs.		
10	Centralized VLAN Management. VLANs created on the Core Switches should be propagated automatically.		
11	Spanning-tree root guard feature to prevent other edge switches becoming the root bridge.		
12	Link Aggregation Protocol (LACP)		
	Network Security Features		
13	IEEE 802.1x to allow dynamic, port-based security, providing user authentication.		
14	Port-based ACLs for Layer 2 interfaces to allow application of security policies on individual switch ports.		
15	SSHv2 and SNMPv3 to provide network security by encrypting administrator traffic during Telnet and SNMP sessions.		
16	RADIUS authentication to enable centralized control of the switch and restrict unauthorized users from altering the configuration.		
17	Multilevel security on console access to prevent unauthorized users from altering the switch configuration using local database or through an external AAA Server.		
18	Should support minimum 400 ACL entries		
	Quality of Service (QoS) & Multicast		
19	Shaped Round Robin (SRR) scheduling and Weighted Tail Drop (WTD) congestion avoidance.		
20	2000 IPv4 & IPv6 Unicast Direct Routes		
21	1000 Multicast Groups		
	Management		
22	Command Line Interface (CLI) support for configuration & troubleshooting purposes.		

23	SNMP v1, v2c, and v3 and Telnet interface support delivers comprehensive in-band management, and a CLI-based management console provides detailed out-of-band management.		
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3. Bill of materials for Passive Component to connect APs in IACS

Sl. No	Description	Quantity No
1	CAT-6 Cable (305 Mtr) Box (Systimax/DLink etc.)	10 Box
2	24 Port loaded patch panel	6 Nos
3	Cat-6 UTP 2 mtr patch cord	120 Nos
4	Back Box & Face Plate	60 Nos.
5	Conduit/Casing (ISI Mark)	300 Mtr

4. PRICE BID

The financial bid indicating (item-wise) price for the item(s) mentioned in the technical bid should be kept in a separate sealed envelope duly super scribed as 'PRICE BID' on the outer cover of the envelop as already detailed above. Price bids of only technically qualified bidders will be opened and they will be intimated the date and time of the opening of price bid at their e-mail ids. Rest of the bidders will stand rejected.

4.1 Price Details (Print in single page letter head landscape mode with sign & stamp)

Active Components

Sl no	Item	Quantity	Make	Model	Service Part Code	HSN/S AC Code	Base price in US\$	Total Price (FOB) in US\$	Total Price (CIF) in US\$
1	60 licenses for APs (56 Indoor + 4 Outdoor)	1 No							
2	Indoor Access Point	153 No							

3	Outdoor Access Point	4 No							
4	Layer 2 Switch Managed 24 port 10/100/1000 Mbps with 4 X 1G SFP Port (PoE)	6 Nos							
5	2 Years support for items 1-4								
Grand Total (FOB)					Grand Total (CIF)				

Passive Components

Sl no	Item	Quantity	Make	Model	Service Part Code	HSN/SAC Code	Base price in Rs.	Total Price (Without GST) in Rs.	GST @	GST Value in Rs.	Total price with GST in Rs.
1	CAT-6 Cable (305 Mtr) Box	10 Box									
2	24 Port loaded patch panel	6 No									
3	Cat-6 UTP 2 mtr patch cord	120 No									
4	Back Box & Face Plate	60 No									
5	Conduit/Casing	300 Mtr									
	Services										

6	CAT-6 cable laying charges										
7	Patch panel termination charges										
8	Back box fixing Charges										
9	Conduit/Casing fixing charges										
		Total GST Amount:					Total Price (Without GST)				
						Grand Total:					

5. SCOPE OF WORK:

1. The proposed equipments will replace/add with the existing Cisco make equipments at IACS. It is the sole responsibility of the vendor in installing, testing, commissioning and running the system from day one.
2. At present IACS has a Cisco make Wireless Controller (AIRCT5520K9 with 100 licenses for APs) and few Cisco Make APs (AIR-AP38021-D-K9). The proposed licenses will be added with the existing licenses to make a total of 160 licenses and proposed APs will be added with the existing APs. Out of total 160 licenses 156 will be used for indoor APs and 4 will be used for outdoor APs. The proposed APs and licenses must be compatible with the above mentioned WLC and licenses. The technical specifications of the proposed APs must be same or higher than the existing APs (AIR-AP38021-D-K9). The “**End Of Life**” of the proposed APs and switches should not be less than 5 years. CAT6 UTP cable is already laid for 100 APs. For remaining 60 APs CAT6 cable laying is to be done and will be connected with the proposed 6 Nos. of 24 port managed PoE L2 switches. The vendors may visit IACS to check the existing network infrastructure and existing network equipment before participating in the bid.
3. The SOW includes migration of existing data/configuration/services from the existing equipments to proposed equipments.

4. The L2 switches will be used as Access switches and the new 802.11 g/n/ac complied APs will be connected to them. These L2 switches will be connected through CAT6A with both L3 switches using Spanning Tree Protocol.
5. Necessary training to IACS staff is to be imparted to run the equipments smoothly. The schematic network diagram should be consulted for clarification.

6. WARRANTY:

- i. **The Comprehensive Warranty shall be for a period of 2 years** from the date of satisfactory installation, testing, commissioning and handing over the equipment which covered under warranty in working order. During the Warranty period the replacement of any part(s) of the equipment or rectification of defect of product will be free of cost.
- ii. If, the tenderer is required to replace the rejected equipment and/ or other articles, he will replace them forthwith, but not later than a period of 14 (fourteen) days from the date of rejection. The tenderer shall bear all cost of such replacement, including freight, if any, of such replacement or repaired equipment and/ or other articles but without being entailed to any extra payment on that or any other account.
- iii. Training to be given to IACS staff for operation & maintenance, troubleshooting, user level training pertaining to system after successful commissioning.
- iv. Vendor shall make necessary arrangements for keeping the sufficient spares to minimize the down time.
- v. Software updates released by the OEM should be installed by the vendor free of cost within the warranty period.
- vi. Warranty should be offered directly by the OEM.
- vii. Single point of contact for all communication related with after sales and support.

7. CERTIFICATIONS:

OEM should be rated as 'Leaders' or 'Challengers' in the latest Magic Quadrant for Wired and wireless LAN Access infrastructure published by Gartner.

8. BID SECURITY:

- a) An Account payee Demand Draft/Pay Order of Nationalized Bank/Scheduled Commercial Bank for Rs. 2,00,000/- (Rupees two lakhs only) drawn in favour of "Indian Association for the Cultivation of Science payable at Kolkata (State Bank of India, Jadavpur University Branch, A/C No. 11079699211, IFSC: SBIN000093, MICR Code: 700002048)" is to be furnished by the bidders as Bid Security money along with Technical Bid, except Micro and Small Enterprises (MSEs) as defined in MSE Procurement Policy issued by Department of Micro, Small and Medium Enterprises (MSME) or are registered with the Central Purchase Organisation or the concerned Ministry or Department.

- b) The Demand Draft for the Bid-Security should have at least 90 (ninety) days validity period of opening of the bids.
- c) In case of non-award of the work the Bid Security money would be returned to the unsuccessful Bidders.

9. PERFORMANCE SECURITY:

An Account Payee Demand Draft on any commercial bank of India of 10% of the total order value (Converted in to INR) in the name of “Indian Association for the Cultivation of Science” is to be furnished by the successful bidder as Performance security. Performance Security may be furnished in the form of Fixed Deposit Receipt or Bank Guarantee from a Nationalized Bank/Scheduled Commercial Bank. Performance security money should remain valid for a period of 60 days beyond the date of completion of all contractual obligations of the supplier including warranty obligations. Bid security money or EMD will be refunded to successful bidder on receipt of the Performance security money.

10. TERMS OF PAYMENT:

All active component rates should be quoted in US \$ only (FOB/CIF) Payment will be made through irrevocable Letter of Credit in two instalments. 90% of the money will be released on submission of shipping of documents. Remaining 10% will be released after successful installation of the equipment.

All passive component rates should be quoted in INR only. Payment will be made 100% on successful installation of equipments and against issue of “Completion Certificate”. Partial payment against supply within scheduled delivery period will not be admissible.

11. ELIGIBILITY OF VENDOR

- 1) The Bidder should be a registered company in India under the company Act, 1956 (Photocopy of the certificate of registration to be provided)
- 2) The Bidder should be an established information technology company and in operation for last 5 years in India.
- 3) The Bidder should have manpower with certification in information security operations. The Bidder should have at least 20 certified security professional on their payroll with minimum two CISA/CISM/CISSP certifications.
- 4) Should have profitable company for last three years. (Audited balance sheet to be provided as per section 71.1)

- 5) Should not be blacklisted/debarred/denied bidding facilities by any Govt. department/Public Sector Undertaking as on the date on bid submission.
- 6) Should not have filed Bankruptcy in any country, if the company is MNC.

12. DOCUMENT

1. The model number, make and a printed literature of the product should be submitted positively.
2. Manufacturers / exclusive distributors / vendors should have history of supplying this type of switches to this or other scientific organizations. Availability of a list in this regard would be preferred.
3. Bidder should submit their past experience for supplying and successful installation of similar units to other research Institute/Universities/other organization in India. Please provide documentary proofs of such successful installation and project completion.
4. Certificate of valid authorisation from the OEM to participate in this tender process.
5. The tender should accompany a compliance chart.
6. Income Tax Return (for the last 3 years)
7. Audited Balance Sheet (for the last 3 years)
8. PAN Card copy
9. GST Certificate
10. Authorized dealership certificate should be provided in case of principal manufacturing company is not quoting directly.
11. A list of clients where APs & L2 Switch has been installed should also be provided
12. Documentary proof of Servicing facility and service engineer stationed at Kolkata.
13. Documentary proof of the vendor/bidder working in this field for at least last 3 years
14. Documentary proof of all other qualification of the bidder mentioned in the eligibility.
15. Annexure-I in letter head with company seal and sign

13. GENERAL INSTRUCTIONS

1. Validity of tender: Tender submitted should remain valid for at least six months from the date of opening the tender. Validity beyond six months from the date of opening of the tender shall be lapsed by mutual consent.
2. Vendor has to provide certificate of valid authorisation from the OEM Company. The OEM shall take over all responsibility of the Vendor. This undertaking should also clearly mention that the spares availability will be ensured for at least five years in future.
3. Servicing facility within India is a must while service engineer stationed at Kolkata will be preferred.
4. Incomplete and conditional tenders as well as tenders received after the due date will be summarily rejected without assigning any reasons thereof.

5. At any time prior to the bid due date, IACS may, for any reason, whether at its own initiative or in response to a clarification requested by a prospective bidder during pre-bid meeting, modify the bidding documents. The amendment(s) will be notified on the institute website. Prospective bidders are advised to occasionally visit the website (www.iacs.res.in) for any amendment.
6. A maximum of 2 representatives per bidder, duly authorized, may be allowed to attend the pre-bid meeting.
7. Installation/Demonstration/Application training at site: Installation & user training at IACS, free of cost by the supplier.
8. Service facility: In Kolkata, supplier should mention their details of service setup and man powers that are responsible for after sales support. Response time should be within 24 hrs.
9. Proposed delivery schedule should be mentioned clearly.
10. Guarantee certificate, users manuals etc. are to be handed over to the user after successful commissioning of the system.
11. In the event of date being declared a closed holiday for purchaser's office, the due date for submission of bids and opening of the technical bids will be the following working day at the appointed time.
12. In case of any dispute, the decision of IACS authority shall be final and binding on the bidders.
13. Once the pre-bid meeting is over and issues are clarified, no query or objection or complain shall be entertained in connection with the tender. Absence of any vendors in pre-bid conference shall not be considered as justification for making query or objection thereto. Also, non-attendance in the pre-bid meeting is not a disqualification for participating in the tender process.
14. For any clarification regarding technical specifications, information etc., please send your queries to Dr. Swapan Deoghuria (ccsd@iacs.res.in).
15. The authority of IACS reserves the right to reject any or all of the tenders received without assigning any reason thereof.

Acting Registrar