

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

**NIT No. : IACS/CC/2017-18/59**

**Date: 25/10/2017**

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 2 Nos. of L3 and 14 Nos. of L2 managed 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.                                                       | <b>NIT No. IACS/CC /2017-18/59      Date: 25-10-2017</b>                                                                                                                                                         |
| Last date and time of submitting tender                                 | 23rd November, 2017 at 12.00 Noon at Dispatch Section                                                                                                                                                            |
| Pre-bid meeting (date, time & place) to discuss technical specification | 15th November at 2.00 P.M. at A K Raychaudhuri Hall, Centenary Building                                                                                                                                          |
| Date and time of opening tender                                         | 23 <sup>rd</sup> November, 2017 at 2.30 P.M.                                                                                                                                                                     |
| Place of opening tender                                                 | At AK Raychaudhuri Hall, Centenary Building                                                                                                                                                                      |
| Date and time of opening of Price Bid                                   | The Price Bids of the bidders qualifying the technical bid will only be opened, the date of which will be intimated to the short-listed bidders at their email addresses. The rest of the bids will be rejected. |
| Contact                                                                 | Email: ccsd@iacs.res.in<br>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 date of which will be intimated to the short-listed bidders at their email addresses. 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. L3, L2 and transceiver 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 "Technical Specification for Network Switches".**

### Technical Specification for L3 Switches:

| S/N | General Features                                                                   | Compliance (Y/N) |
|-----|------------------------------------------------------------------------------------|------------------|
| 1   | Rack mountable                                                                     |                  |
| 2   | 24 x 10/100/1000BaseT port + 2 x 1/10G SFP+ ports populated with 2 x 10G SR optics |                  |
|     | <b>Performance</b>                                                                 |                  |
| 3   | Aggregate Switching Capacity – minimum 100 Gbps or more                            |                  |
| 4   | Throughput - minimum 60 Mpps or more (IPv4/IPv6)                                   |                  |
| 5   | DRAM: minimum 1GB, Flash: Minimum 512 MB or more                                   |                  |
|     | <b>Layer 2 features</b>                                                            |                  |
| 6   | MAC Address: Minimum 16000 or more                                                 |                  |
| 7   | VLANs: Minimum 4000 or more                                                        |                  |
| 8   | ARP entries – Minimum 1000                                                         |                  |
| 9   | Voice VLAN                                                                         |                  |
| 10  | Link Layer Discovery Protocol                                                      |                  |
| 11  | STP, MSTP, RSTP                                                                    |                  |
| 12  | Multiple Registration Protocol                                                     |                  |
| 13  | Link Aggregation Control Protocol 802.3ad (LACP)                                   |                  |
|     | <b>Layer 3 features</b>                                                            |                  |
| 14  | IPv4 / IPv6 unicast routes: minimum 10,000 or more                                 |                  |
| 15  | IPv4 / IPv6 multicast routes: Minimum 4,000 or more                                |                  |
| 16  | Routing protocols: RIPv1/v2, OSPF or equivalent                                    |                  |
| 17  | MPLS: VRF-lite or equivalent                                                       |                  |
|     | <b>Security</b>                                                                    |                  |
| 18  | MAC addresses per port                                                             |                  |
| 19  | Port, VLAN, Router based ACL                                                       |                  |
| 20  | ACL entries: Minimum 2000 or more                                                  |                  |
| 21  | Layer 2 – L4 ACL                                                                   |                  |
| 22  | 802.1X                                                                             |                  |
| 23  | Control Plane DoS protection                                                       |                  |
|     | <b>High Availability</b>                                                           |                  |

|    |                                                                                       |  |
|----|---------------------------------------------------------------------------------------|--|
| 24 | Redundant, hot-swappable power supplies from Day 1                                    |  |
| 25 | Hot-swappable fans or equivalent redundancy on cooling process from Day 1             |  |
|    | <b>Quality of service</b>                                                             |  |
| 26 | Layer 2 & 3 QoS                                                                       |  |
| 27 | Strict priority, Shaped Round-Robin                                                   |  |
| 28 | 802.1p, DSCP/IP Precedence trust and marking                                          |  |
|    | <b>Multicast</b>                                                                      |  |
| 29 | IGMP: v1, v2, v3, IGMP snooping                                                       |  |
| 30 | PIM-SM/PIM-SSM/PIM-DM                                                                 |  |
|    | <b>Management</b>                                                                     |  |
| 31 | Full featured CLI, Web Interface                                                      |  |
| 32 | RMON ( 4 groups)                                                                      |  |
| 33 | Traffic mirroring: port & VLAN                                                        |  |
| 34 | RADIUS, TACACS+                                                                       |  |
| 35 | EAL-3 / NDPP Certified                                                                |  |
| 36 | Neighbouring device discovery                                                         |  |
| 37 | Centralized VLAN management, VLAN created in Core and should propagated automatically |  |
| 38 | Console port                                                                          |  |

#### Technical Specification for L2 Switches:

| S/N | Minimum Interface required are                                                                      | Compliance (Yes/No) |
|-----|-----------------------------------------------------------------------------------------------------|---------------------|
| 1   | <b>48 x 10/100/1000BaseT (PoE/PoE+) + 2 x 1/10G SFP+ ports populated with 2 X 1G copper modules</b> |                     |
| 2   | Switching performance – minimum 150 Gbps or more                                                    |                     |
| 3   | Forwarding performance – minimum 130 Mpps or more                                                   |                     |
| 4   | Rack mountable -                                                                                    |                     |
| 5   | DRAM: Minimum 256 MB or more, Flash: Minimum 128 MB or more                                         |                     |
| 6   | PoE power supply should be 370 watt                                                                 |                     |
| 7   | IPv4 and IPv6 dual stack for coexistence of both protocol stacks to ease migration.                 |                     |
| 8   | Minimum 2 no switch in a stack                                                                      |                     |
|     | <b>Layer 2 features</b>                                                                             |                     |
| 9   | MAC Address: Minimum 15000 or more                                                                  |                     |
| 10  | VLANs: Minimum 1000 or more                                                                         |                     |
| 11  | ARP table- Minimum 1000 or more                                                                     |                     |
| 12  | Link Layer Discovery Protocol                                                                       |                     |
| 13  | Spanning Tree Protocol                                                                              |                     |

|    |                                                                 |  |
|----|-----------------------------------------------------------------|--|
| 14 | VLAN tagging                                                    |  |
| 15 | MSTP, RSTP                                                      |  |
| 16 | 802.3ad Link Aggregation Control Protocol                       |  |
|    | <b>Layer 3 features</b>                                         |  |
| 17 | IPv4 unicast routes: minimum 512 or more                        |  |
|    | <b>Security</b>                                                 |  |
| 18 | Dynamic ARP inspection, IP Source Guard                         |  |
| 19 | DHCP snooping                                                   |  |
| 20 | Port/VLAN/ Router based ACL (PACL)                              |  |
| 21 | ACL entries: 500                                                |  |
| 22 | Layer 2 – L4 ACL                                                |  |
| 23 | 802.1X                                                          |  |
| 24 | Control Plane DoS protection                                    |  |
|    | <b>Quality of service</b>                                       |  |
| 25 | 802.1p, DSCP/IP Precedence trust and marking                    |  |
| 26 | Layer 2-4 classification criteria: Interface, MAC address,      |  |
|    | <b>Multicast</b>                                                |  |
| 27 | IGMP: v1, v2, v3, IGMP Snooping, Multicast Entries: Minimum 256 |  |
|    | <b>Management</b>                                               |  |
| 28 | Full featured CLI, Web Interface                                |  |
| 29 | RADIUS and TACACS authentication                                |  |
| 30 | EAL3/NDPD Certification                                         |  |
| 31 | Console port                                                    |  |

## 2. 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.

Servicing facility within India is a must while service engineer stationed at Kolkata will be preferred. 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      | L3 Switch     |                      |                                       |                      |
| 2      | L2 Switch     |                      |                                       |                      |
| 3      | Transreceiver |                      |                                       |                      |

| Sr. No | Item                          | Quantity | Make/model | Base price | GST | Total price with GST |
|--------|-------------------------------|----------|------------|------------|-----|----------------------|
| 1      | L3 Switch with transreceivers | 2 Nos.   |            |            |     |                      |
| 2      | L2 Switch with transreceivers | 14 Nos.  |            |            |     |                      |

### 3. SCOPE OF WORK:

The switches will replace the existing Cisco make switches in the Main Building of IACS. Two L3 switches will act as distribution switches in two wings of the Main Building and they will be directly connected to the Core switch (Cisco 4503) through MM OFC. VLANs are to be configured for each floor/wing to isolate the traffic between two ports in the main building locally without passing it to the core switch. The L2 switches will be used as Access switches and wireless APs (Cisco Aironet 1242) will also be connected to them. In future 802.11 g/n/ac complied APs will be connected. These L2 switches will be connected through CAT6A with both L3 switches using Spanning Tree Protocol. The schematic network diagram should be consulted for clarification.

### 4. WARRANTY:

- i. The Comprehensive Warranty shall be for a period of 5 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 at site 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.

### 5. CERTIFICATIONS:

Switch OEM should be in the Gartner's Leaders & Challengers quadrant for Wired and Wireless LAN Access infrastructure.

## **6. BID SECURITY:**

- a. An Account payee Demand Draft/Pay Order of Nationalized Bank for Rs. 50, 000/- (Rupees fifty thousand only) drawn in favour of “Indian Association for the Cultivation of Science (State Bank of India, Jadavpur University Branch, A/C No. 11079699211, IFSC: SBIN000093, MICR Code: 700002048)” is to be furnished by the bidders except those who are registered with the Central Purchase Organizations, National Small Industries Corporation or the concerned Ministry or Department, as Bid Security money or Earnest Money Deposit (EMD). Alternatively, the Bidder shall have the option to furnish the EMD in the format of Bank Guarantee (BG).
- b. The Demand Draft for the Bid-Security should have at least about 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.

## **7. PERFORMANCE SECURITY:**

An Account Payee Demand Draft on any nationalized bank of India of 10% of the order value in the name of “Indian Association for the Cultivation of Science” is to be furnished by the successful bidder as Performance security. 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. EMD will be refunded to successful bidder on receipt of the Performance security money.

## **8. TERMS OF PAYMENT:**

All rates should be quoted in INR only. Payment will be made 100% on successful installation of the switches and on Issue of Completion Certificate. Partial payment against supply within scheduled delivery period will not be admissible.

## **9. 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. The tender should accompany a compliance chart.
5. Income Tax Return ( for the last 3 years)
6. Audited Balance Sheet ( for the last 3 years)
7. PAN Card copy
8. GST Certificate
9. Authorized dealership certificate should be provided in case of principal manufacturing company is not quoting directly.
10. A list of clients where L3/L2 Switch has been installed should also be provided
11. Documentary proof of Servicing facility and service engineer stationed at Kolkata.
12. Documentary proof of the vendor/bidder working in this field for at least last 3 years
13. Annexure-I in letter head with company seal and sign

## 10. 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. Incomplete and conditional tenders as well as tenders received after the due date will be summarily rejected without assigning any reasons thereof.
3. 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](http://www.iacs.res.in)) for any amendment.
4. A maximum of 2 representatives per bidder, duly authorized, may be allowed to attend the pre-bid meeting.
5. Installation/Demonstration/Application training at site: Installation & user training at IACS, free of cost by the supplier.
6. 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.
7. Proposed delivery schedule should be mentioned clearly.
8. Guarantee certificate, users manuals etc. are to be handed over to the user after successful commissioning of the system.
9. 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.
10. In case of any dispute, the decision of IACS authority shall be final and binding on the bidders.
11. 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.
12. For any clarification regarding technical specifications, information etc., please send your queries to Dr. Swapan Deoghuria ([ccsd@iacs.res.in](mailto:ccsd@iacs.res.in)).
13. The authority of IACS reserves the right to reject any or all of the tenders received without assigning any reason thereof.

**Acting Registrar**

# **Annexure-I**

1. **Company/vendor Name:**
2. **Registered Address:**
3. **Kolkata Office (If not same as No 2):**
4. **PAN No.**
5. **GST Registration No.**
6. **Bank Name:**
7. **Bank Address:**
8. **Bank Account No:**
9. **Bank IFSC/MICR Code:**
10. **Contact person with contact details:**