



GSTIN: 30AABAI1653D1ZF

PAN: AABAI1653D

TAN: BLRI08261B

Date: 18-01-2019

TENDER DOCUMENT

Public Tender No: IITGOA/CITS/004

Due Date: 13/02/2019

Dear Sir/Madam,

On behalf of the **Indian Institute of Technology GOA**, sealed quotations are invited in **two part bid system for the supply of below mentioned Networking items. The items Installation and Commission has to be done at IIT Goa, GEC Campus, Farmagudi, Ponda- Goa – 403401.**

Items Required at IIT Goa

Sl.No	Item Name (Specification given below)	Quantity
1	24 port Switch.	01
2	24 port POE Switch.	10
3	48 port Switch Manageable switch with 4 port OFC uplink.	16
4	OFC Modules 1Gbps.	34
5	Wireless Access points.	30
6	Cat6 Punch down Keystone	70
7	Single Face plate	70
8	Back box for faceplate	70
9	Cat6 1mtr Patch chord	70
10	1mtr SC to LC OFC Patch chord	20
11	Installation and Commission of the above items.	--

Sl.No	Item Name	Specification
1	24 port L3 Switch	<ul style="list-style-type: none"> Switch should have minimum 296 gbps of higher Switching bandwidth. Switch should be equipped with minimum 1 GHZ CPU , 1GB RAM , 4 GB Flash and Hot swappable redundant Fans and power supplies. Switch should support IPv4 and IPv6 switching and routing in hardware from day 1. Should support Openflow v1.0 or higher for SDN to ensure a Vendor neutral architecture. 0°C to 45°C operating temperature and 10% to 95% relative humidity. Switch support minimum 24 100/1000BASE-X unpopulated SFP, 4x100/1000 BASE-T & 4 x 10G SFP+ fiber ports. Should support upgradeability to 40G QSFP+ uplink. Switch should support stacking. 802. 1Q VLAN on all ports with support for 4k concurrent VLANs, and 802.1 AK for dynamic VLAN propagation. Support for minimum 90 K MAC addresses. Support for MSTP, PVST+ , RSTP. Should support Private VLAN , Vlan Aggregation , Translation and 802.1v.

		<ul style="list-style-type: none"> • Must support Layer2 Ping and Layer 2 Trace route for connectivity and Fault Management must support multicast Trace route. • Should support Layer 2 multipath to multiple Peer switches in a STP free architecture. • Should support snmp and syslog Notification for MAC addition, deletion and movement across ports. • Support for IP Unicast routing protocols (static, RIPv2) from day 1 and upgradeable to OSPF and BGP in future. • Support MVR and upgradeable to Support PIM. • Should support policy based routing and GRE tunnelling. • Should support Diffuser –RFC 2474, RFC 2475 RFC 2597 and RFC 2598. • Should support standard based protocols to dynamically reserve QOS and ensure lossless delivery of real-time Traffic. • Switch should support eight hardware queues per port. • Switch should be scalable to support minimum 3000 Hardware ACLs. • Should support Multi- tenancy for secure traffic isolation with Virtual Router/ Device context or equivalent that allows multiple instances of user created control plane to co-exist within the same switch & router at the same time without overlap, enabling sharing of virtual Router/ switch across business units as individual entity. Each Virtual Router / Device Contact will be isolated entity and should not be able to talk to each other within the same box. • Support local and remote mirroring, multisession mirroring (minimum 4 session) • Should Support mechanism for detection of anomalous protocol behaviour and auto triggering of executable preventive action within the switch. Should support Protocol based anomaly detection. If required necessary add on component for threat detection should be be quoted. • Should support SSH-2, SCP-2 and SFTP with encryption/authentication. • Should support Serial RS232 port ,OOB Ethernet management port and USB or External Compact Flash slot. • Support features / protocol to measure Frame Delay and Latency between devices to pinpoint slow traffic paths. • Should support scheduled archiving / uploading of configuration and system log to a central server. • Switch should support ASIC based Flow monitoring like SFLOW/Net flow/IPFIX. • Should support ability to restart individual CPU process like snmp, ssh , stp etc in case of process crash without the need to reboot the entire switch. • Should be manageable by SSH,RMON, SNMP, and HTTP/s • The OEM should be present in Gartner Magic Leaders Quadrant. The OEM should have R&D centre in India for min Last 5 Years. The OEM should have TAC centre in India with India Toll free number – reflected in Official website. • The switches should be NDPP or EAL3 certified. • Switch should be compliant to following certifications and Safety Regulation : NEBS Level 3, UL 60950, EN 60825-1+A2:2001, CISPR 22: 2006 Ed 5.2, Class A (International Emissions), EC/EN 61000-4-3:2006 Radiated Immunity 10V/m, Criteria A, IEC/EN 61000-4-6:2005 Conducted Immunity. (Existing Distribution switch is x460-G2-24x-10GE4)
2	24 port POE Switch	<ul style="list-style-type: none"> • Minimum of 24 ports 10/100/1000 Base-T PoE+ with 370W power supply and 4 SFP ports upgradable to 10G SFP+ ports • 1 x Out of Band IP based management Port , 1 Console Port, USB Port / External Flash • support stacking for upto 8 switches with minimum 40 Gbps stacking. • Have Redundant Power Supply support and variable speed fan to adjust to varying weather conditions in campus • Each switch should have minimum 128 Gbps or more with non blocking architecture and Forwarding rate of 95 Mpps • Should be equipped with minimum 1GB RAM and 1GB flash • Should have LED indicator for per port status , FAN, PSU and Management Status • 0°C to 50°C operating temperature and 10% to 95% relative humidity • Hardware and software configuration have for IPv6 from day one • Should have 16 K MAC Address, 4K active Vlans • Should support 10 K ARP entries

		<ul style="list-style-type: none"> • 802.1D spanning Tree and PVST+, 802.1w, 802.1s , Should have BPDU Guard or equivalent feature on edge port to auto disable port for a configurable time period to if an accidental loop occurs in the network • Audio Video Bridging to enable reliable, real-time audio/video transmission over Ethernet • Should support aggregating and load balancing of traffic to two or more peer switches within same VLAN • Should support G.8032 standard based protocol for ring backbone • Should have Port based VLAN, MAC based VLAN, private vlan and 802.1 AK for dynamic VLAN propagation • Should have Local ,Remote and multisession port mirroring (minimum 4 session) • Support Standard based protocols for lossless transport of real time data with dynamic QOS reservation. • Should have 8 Hardware QOS Queues per port • Should have traffic rate limiting with Configurable bandwidth granularity of 8 KBps • Should have Link Layer Discovery Protocol (802.1ab) to allow recognition of third party network devices and LLDP MED for auto configuration • Should have MAC address tracking and notification for mac address addition , delete or movement in the Network • Should support policy based routing and switching • Should have basic dynamic routing protocols like static routing, Default routing and RIP from day 1 and be upgradeable to OSPF , PIM , VRRP • Must Support RFC 3619 for sub 50 ms failover and it should seamlessly integrate with Core and Distribution • Should have Configurable multicast session limit per port • Local authentication database for RADIUS Authentication for 802.1x login • Should have MAC security – Lockdown & Limit and MAC address tracking with syslog & snmp notification • Should have SSH-2, SCP, SFTP for secure management • Should have dynamic arp inspection , DHCP snooping, Private VLAN, SYN attack protection, GARP protection • Should have ASIC based traffic flow analysis based on Netflow/ sFlow/ Ipfix • Should have minimum 1 K ACL entry support and Time Based ACL • Should have scheduled archiving / uploading of configuration and system log to a central server • Should support inbuilt DHCP server and Client for quick configuration of endpoints and switch • Telnet server , ssh server, Ping and trace route over Ipv6 • Should have L2 Trace route, L2 Ping and Multicast Trace route • Web, Console and CLI management • Dual firmware and configuration rollback • Should be SDN capable with Open stack support and Open Flow API support, Should support IEEE P802.1Qaz • Inbuilt browser based bandwidth monitoring • Should support Energy Efficient Ethernet 802.3az • "Model should have safety and standards certifications as below : • IEC61000-4-6:2008/EN61000-4-6:2009, IEC61000-4-8:2009/EN61000-4-8:2010 , EN 55022:2010 Class A, CISPR 22:2008 Class A, CISPR24:2010ClassA, Radiated Immunity 10V/m, CriteriaA, UL60950-1 2ndEd, CE 2.0 Compliant" • should support NDcPP/EAL3
3	48 port Switch Manageable switch with 4 port OFC uplink	<ul style="list-style-type: none"> • Minimum of 24 ports 10/100/1000 Base-T with 4 SFP ports upgradable to 10G SFP+ ports • 1 x Out of Band IP based management Port , 1 Console Port, USB Port / External Flash • support stacking for upto 8 switches with minimum 40 Gbps stacking. • Have Redundant Power Supply support and variable speed fan to adjust to varying weather conditions in campus • Each switch should have minimum 176 Gbps or more with non blocking architecture and Forwarding rate of 130 Mpps • Should be equipped with minimum 1GB RAM and 1GB flash • Should have LED indicator for per port status , FAN, PSU and Management Status

		<ul style="list-style-type: none"> • 0°C to 50°C operating temperature and 10% to 95% relative humidity • Hardware and software configuration have for IPv6 from day one • Should have 16 K MAC Address, 4K active Vlans • Should support 10 K ARP entries • 802.1D spanning Tree and PVST+, 802.1w, 802.1s , Should have BPDU Guard or equivalent feature on edge port to auto disable port for a configurable time period to if an accidental loop occurs in the network • Audio Video Bridging to enable reliable, real-time audio/video transmission over Ethernet • Should support aggregating and load balancing of traffic to two or more peer switches within same VLAN • Should support G.8032 standard based protocol for ring backbone • Should have Port based VLAN, MAC based VLAN, private vlan and 802.1 AK for dynamic VLAN propagation • Should have Local ,Remote and multisession port mirroring (minimum 4 session) • Support Standard based protocols for lossless transport of real time data with dynamic QOS reservation. • Should have 8 Hardware QOS Queues per port • Should have traffic rate limiting with Configurable bandwidth granularity of 8 KBps • Should have Link Layer Discovery Protocol (802.1ab) to allow recognition of third party network devices and LLDP MED for auto configuration • Should have MAC address tracking and notification for mac address addition , delete or movement in the Network • Should support policy based routing and switching • Should have basic dynamic routing protocols like static routing, Default routing and RIP from day 1 and be upgradeable to OSPF , PIM , VRRP • Must Support RFC 3619 for sub 50 ms failover and it should seamlessly integrate with Core • Should have Configurable multicast session limit per port • Local authentication database for RADIUS Authentication for 802.1x login • Should have MAC security – Lockdown & Limit and MAC address tracking with syslog & snmp notification • Should have SSH-2, SCP, SFTP for secure management • Should have dynamic arp inspection , DHCP snooping, Private VLAN, SYN attack protection, GARP protection • Should have ASIC based traffic flow analysis based on Netflow/ sFlow/ Ipfix • Should have minimum 1 K ACL entry support and Time Based ACL • Should have scheduled archiving / uploading of configuration and system log to a central server • Should support inbuilt DHCP server and Client for quick configuration of endpoints and switch • Telnet server , ssh server, Ping and traceroute over Ipv6 • Should have L2 Traceroute, L2 Ping and Multicast Traceroute • Web, Console and CLI management • Dual firmware and configuration rollback • Should be SDN capable with Openstack support and OpenFlow API support, Should support IEEE P802.1Qaz • Inbuilt browser based bandwidth monitoring • Should support Energy Efficient Ethernet 802.3az • "Model should have safety and standards certifications as below : • IEC61000-4-6:2008/EN61000-4-6:2009, IEC61000-4-8:2009/EN61000-4-8:2010 , EN 55022:2010 Class A, CISPR 22:2008 Class A, CISPR24:2010ClassA, Radiated Immunity 10V/m,CriteriaA, UL60950-1 2ndEd, CE 2.0 Compliant" • should support NDcPP/EAL3
4	OFC Modules 1Gbps	<ul style="list-style-type: none"> • Fiber Module Single Mode Supported Single mode and from the same OEM of switch

5	Wireless Access points	<ul style="list-style-type: none"> • Access Points proposed must include radios for 2.4 GHz and 5 GHz with 802.11ac Wave 2. • An access point must include a standard OEM provided Mounting brackets for mounting on Ceiling or Roof top. • Access point must support spectrum intelligence across 20-, 40-, and 80-MHz-wide channels to combat performance problems due to wireless interference. • Access point must have an two ethernet port for Link aggregation Access point should have serial/console port Must have atleast 3 dBi Antenna gain on each radios. • Must support 4x4:4 spatial streams for both 802.11ac and 802.11n client. • Access point must support a minimum of 1.9 Gbps user throughput including both the radios.Must support minimum of 22dbm of transmit power in both 2.4Ghz and 5Ghz radios. And should follow the WPC norms. • Must support AP enforced load-balance between 2.4Ghz and 5Ghz band.Must incorporate radio resource management for power, channel, coverage hole detection and performance optimization.Must have -97 dB or better Receiver Sensitivity. • Must support Proactive Key Caching and/or other methods for Fast Secure Roaming.Must support Management Frame Protection.Should support locally-significant certificates on the APs using a Public Key Infrastructure (PKI). • Access Points must support Hardware-based encrypted user data and management traffic between controller and Access point for better security.Must support the ability to serve clients and monitor the RF environment concurrently. • Same model AP that serves clients must be able to be dedicated to monitoring the RF environment.Should support mesh capabilities for temporary connectivity in areas where no Ethernet cabling.Mesh support should support QoS for voice over wireless. • Must be plenum-rated (UL2043). Must support 16 WLANs per AP for SSID deployment flexibility.Must continue serving clients when WAN link to controller is back up again, should not reboot before joining. • The APs must support centralized wireless mode with the use of a controller, but the APs must also support operation in autonomous mode without the presence of any controller, when neededWhen operated in remote AP mode, the AP must not disconnect any clients when the connection to the controller fails or in the case the failed connection has been restored again. • When operated in remote AP mode, the AP must be able to authenticate new users with local radius server directly at the AP itself in case of link failure to controller.Must support telnet and/or SSH login to APs directly for troubleshooting flexibility. • Must support Power over Ethernet, local power (DC Power), and power injectors.Access Point should 802.11 DFS certified. <p>Note: We already Have Cisco Wireless Controller 5520. So the Access Points must be support to this Existing Wireless Controller</p>
6	Cat6 Punch down Keystone	Make Molex
7	Single Face plate	Make Molex
8	Back box for faceplate	Any Standard make
9	Cat6 1mtr Patch chord	Make Molex
10	1mtr SC to LC OFC Patch chord	Make Molex

The eligibility criteria for participation in bid are mentioned below:

1. The Bidder should have ISO 9001: 2015 certification. (Documentary evidence required)
2. The Bidder should have OEM certified partnership if the bidder is a partner. (Documentary evidence required)
3. Manufacturer Authorisation Certificate to participate in this tender with tender number.
4. Bidder should have executed minimum 3 such projects in the last three years with:
(a or b)
 - a. At least one order amounting to Rs 40 lakhs or more.
 - b. At least two orders amounting to more than Rs. 20 lakhs each.Purchase Orders of these should be attached.
5. Bidder should have in the business since last 5 years (Attach company registration certificate) with minimum turnover of Rs 1 Crore in the last three financial years: FY16-17, FY17-18 and FY18-19)
6. Bidder should have valid GST Registration. (Documentary evidence required)
7. Bidder should submit last 3 years income Tax Returns. (FY16-17, FY17-18, FY18-19)
8. Bidder should provide 5 years of onsite warranty on all active devices from OEM.
9. The suppliers shall provide the banking details along with their quote on their letterhead duly signed and stamped.

The above-mentioned basic eligibility conditions are broad guidelines for pre-qualification and the Director/Registrar, IIT Goa hereby reserves the right to relax / alter / modify / add any or all the conditions.

Instructions to the Bidder:

- 1) **Preparation of Bids:** The bidders must ensure that bids are submitted in **two-part bid system (i.e.) Technical bid and Financial bid in separate envelopes.**
 - a) **Technical bid:** The technical bid should consist of all technical details/brochures along with commercial terms and conditions super-scribed as TECHNICAL BID with Tender No. and date and time of closing and the bidder's name and address. No prices should be included in technical bid. Bidder should submit non-commercial bill of material along with Technical Bid. Include a document that lists the specification as mentioned in this tender and whether complied or deviated. In case of any deviation, the deviation should be clearly mentioned.
 - b) **Financial (Price) Bid** should indicate firm and fixed figures and words super-scribed with the Tender No. and date of closing of the Tender with name of supply/work and the bidder's Name and address. The price bid should not contain any conditional clauses. No price escalation for any reasons whatsoever is allowed. All prices should be given in Indian Rupees.
 - c) The technical and the financial bids duly signed by the bidders or their authorised signatories with name and seal should be put in separate cover and sealed. Both sealed covers should be put into a bigger cover duly super-scribed with PT No. and due date/time with name of supply /work. **Technical bids must either be spiral bound / stapled together. No loose sheets will be accepted. All pages must be numbered.**

- 2) **Submission of the tender:** The complete sealed bids in all respects shall be sent to the following address well in advance either by post or by courier or by hand so as to reach this office on or before the due date and time specified in the Schedule. The bids received after closing date and time shall not be considered.

The Registrar,
Indian Institute of Technology Goa,
GEC Campus, Farmagudi,
Ponda, Goa - 403401.

While submitting the bids, the bidders must sign all the tender documents as a token of accepting of tender documents as well as terms and conditions stipulated therein. Tender documents without signature of bidders or their authorised signatories will be treated as invalid bids.

No conditional offer or terms and conditions will be entertained by the institute and such bids will be treated as invalid.

- 3) The tender documents can be downloaded from IIT Goa web site: <http://www.iitgoa.ac.in/anounce.php?type=tenders> or from <https://eprocure.gov.in/cppp/>.
- 4) **Opening of the tender:** The Technical Bids will be opened by the tender committee duly constituted in the presence of bidders or their authorised representatives, if they desire on **14-02-2019 at 4 pm**. Then the bids will be evaluated by the Technical Evaluation Committee which will decide the suitability of the technical bids as per our requirement and terms and conditions. Once the technical evaluation is completed, the price Bids of only those bidders who are found technically acceptable will be opened in the presence of Authorized Representatives of such bidder(s), if any on a date and at a venue to be intimated by IIT Goa to the shortlisted bidders.
- 5) The bidder shall note that any unsolicited post-tender reduction by them would disqualify them from participating from the bidding and forfeit the security bid.
- 6) **Incomplete bids are liable for rejection.**
- 7) **Prices:** The price should be quoted on FOR: IIT, Goa. The bid should consist of basic price, P&F charges, freight, unloading charges and applicable taxes.
- 8) **Offer validity:** The offer must be valid for 90 days from the closing date in the case of indigenous supply and 120 days for overseas supply. If the validity of offers for acceptance is less than 90 days/120 days, the same will not be considered.

Important Terms and Conditions:

1. The last date for the submission of the tender is **13-02-2019 at 5.30 pm**.
2. Delivery and installation must be made within 4 weeks of getting a confirmed order.
3. Payment will be made within 30 days of Satisfactory Delivery and Installation.
4. GST as applicable.

5. For any query you may contact us on 0832-2490860 / 09900882272; sysad@iitgoa.ac.in / purchase@iitgoa.ac.in
6. Send the two sealed documents (Technical bid and Financial bid) in one envelope directly to **The Registrar, IIT GOA, GEC Campus, Farmagudi, Ponda, Goa – 401403.**
7. **Bid Security (EMD):** *EMD either in the form of Bank Demand draft of Rs.1,50,000.00 initially valid up-to 90 days drawn in favour of INDIAN INSTITUTE OF TECHNOLOGY GOA payable at GOA, must be sent along-with the Technical bid only.*

The technical bid without EMD would be considered as UNSOLICITED and will be REJECTED. Photo/FAX copies of the Demand Draft/Banker's pay orders will not be accepted. No interest will be paid for the EMD and the EMD (Bid Security) will be refunded to the successful bidder on receipt of Performance Security (Security Deposit) and in case of unsuccessful bidders, the EMD will be refunded on finalisation of tender.

8. **Bid security be forfeited** without any intimation in such cases as below: -
 - a) If a bidder withdraws its bid during the period of bid validity.
 - b) If a successful bidder fails to accept the awarded contract within 15 days of award of the contract.
9. **Performance Bank Guarantee:** Performance Bank guarantee for 5% of Purchase order value should be produced in the form of B.G from the nationalised /scheduled Bank valid till the completion of warranty / guarantee period plus sixty days as claim period. Where-ever installation/commissioning is involved, the guarantee/warranty period shall be reckoned from the date of completion of installation/commission. Failure to render contracted service during the warranty/guarantee period by the contractor, the performance bank guarantee will be forfeited. No interest is payable on the performance Bank guarantee amount.
10. **Guarantee/Warranty:** The Vendor shall guarantee that the material supplied shall comply fully with the specifications laid down, for material, workmanship and performance after acceptance of the material for a period of five years.**The OEM should clearly mention in the bid the period of 5 years guarantee/warranty offered by them from day 1.** If any defects are discovered therein or any defects therein found to have developed under proper use arising from faulty stores design or workmanship, the Contractor shall remedy / replace such defective items at his own cost.
11. **Installation& Commissioning:**The vendor should Install all the items satisfactorily at IIT Goa campus within 10 days of supplying the items. Installation report is mandatory for the payment process.
12. **Insurance:** IIT Goa being a Central autonomous body under Ministry of HRD, Government of India, we will not insure our goods. However, to safe guard the ordered material from probable transit damage while in transportation the contractor may insure the goods at his risk and cost.
13. **Delivery Schedule:** Please note that delivery is the essence of the contract. In case there is any deviation in the delivery schedule, liquidated damages clause will be levied for the delayed period of supply. Therefore, it should be ensured that all the ordered items should be supplied within one month from the date of receipt of Purchase Order on door

delivery basis at our Institute as per Purchase order terms with securely and sufficiently packed by following standard packing procedure to withstand transit damages. In case of import supply, the item should be delivered at the cost of supplier to our institution. The installation and commissioning should be completed as specified in our important terms and conditions.

14. **Extension of time:** If the completion of stores is delayed due to reason of force majeure such as acts of God, acts of public enemy, acts of Government, fires, floods, epidemics, quarantine restriction, strikes etc., the contractor shall give notice within 15 days to Institute in writing of his claim for an extension of time. The Institute on receipt of such notice after verification, if necessary, may agree to extend the Contract delivery date as may be reasonable but without prejudice to other terms and conditions of the contract.
15. **Micro and Small Enterprises (MSEs)** registered with National Small Industries Corporation are exempted from payment of Earnest Money Deposit. However, vendors covered under this category have to submit copy of registration certificate with present validity along with technical bid, failing which, the bid will be disqualified.
16. **Modifications of specification:** The supply to be made by the Supplier under this Purchase order can be modified or changed by the request from the IIT Goa provided that for such modifications or changes the parties shall first agree to possible addition or reduction in cost, the delivery date and such other terms and conditions occasioned by or resulting from such modification or change. Such agreement shall be effected either by way of exchange of letters duly signed by authorised representatives of the parties or by signed change order form or by minutes of meeting signed by authorised representatives of the parties, which shall constitute the necessary amendments to the contract. Possible increase or decrease in the contract price shall be calculated in accordance with unit prices. The cost of such additional jobs should be reasonably fixed with reference to the quoted price for such or similar items.
17. **IIT Goa reserves the full right** to accept / reject any tender or all tenderers at any stage without assigning any reason.
18. **IIT Goa** reserves the right to accept in full or part a bid depending on its requirements.
19. **Important Dates:**

Sl.No	Description	Date	Time
1	Pre bid submission meeting- survey for installation. (Kindly send the confirmation mail to sysad@iitgoa.ac.in)	05-02-2019	10.30 AM To 12.00 AM
2	Bid submission last date	13-02-2019	05.30 PM
3	Bid opening date	14-02-2019	04.00 PM