

**ASSAM ENGINEERING INSTITUTE
CHANDMARI, GUWAHATI
ASSAM -781003**

**Tel:- 0361-2134633
E-mail:principal.aei@gmail.com
Website: aei.org.in**

Ref. No. AEI/AICTE-NEQIP/2013-14/285

Dated 02/02/2015

**NOTICE INVITING TENDER (NIT)
FOR SUPPLY, INSTALLATION & COMMISSIONING OF NETWORKING DEVICES &
ACCESSORIES TO ASSAM ENGINEERING INSTITUTE
UNDER AICTE-TEQIP-NES PROJECT
(LIST XVII)**

The Principal, Assam Engineering Institute invites quotation for Supply, Installation and Commissioning of Networking Devices & Accessories as per details at ANNEXURE-IV, in Two Bids to reach the undersigned on or before 13/02/2015

Sl No.	Reference no.	Items	Qty	EMD (Rs.) in the form of DD (to be submitted with Technical Bid)	Tender Document Fee (Rs.) in the form of DD (to be submitted with Technical Bid)
01.	Ref. No. AEI/AICTE-NEQIP/2013-14/285 Dated 02/02/2015	Supply, Installation and Commissioning of Networking Devices & Accessories to be installed at Assam Engineering Institute, Chandmari, Guwahati, Assam	One Package	@2%	500.00

(1). Last date & Time for Submission: 13/02/2015 (14.00 HRS)

(2). Date/Time for Opening of Tech. Bids: 13/02/2015 (14.30 HRS)

After evaluation of technical bids, financial bids of the successful bidders will be opened on a later date which will be notified in the Institute website

Venue of Bid Opening: At Office of Assam Engineering Institute, Chandmari, Guwahati, Assam

BID INSTRUCTION:

01. Quotations will have to be submitted in TWO Bids. The address of the firm submitting the quotation and the Officer to whom the quotation is addressed must appear distinctly on sealed covers. Further, on sealed cover, the following are to be written:

QUOTATION FOR SUPPLY, INSTALLATION & COMMISSIONING OF NETWORKING DEVICES & ACCESSORIES TO ASSAM ENGINEERING INSTITUTE UNDER AICTE-TEQIP-NES PROJECT, (LIST XVII), NIT REF NO., Dt.....

- 02 Submission of Compliance Certificate:** Duly filled and signed Compliance Certificates (as per formats at **Annexure I (A & B)**) are must with the Technical bid.
- 03. Bid not transferable:** The bid documents are not transferable and the seal and signature of the authorized official of the firm's must appear on all the papers and envelopes submitted.

QUALIFICATION REQUIREMENTS

1. **The Bidder should be a firm of reputation having sufficient expertise and experience in the subject tender with sound warranty / service support capability with CCNA Certified and Qualified Personnel for installation & maintenance and authorization from manufacturers.**
2. **Preference will be given to firms/companies with ISO 9001:2008 & ISO 14001:2004 Certification.**
3. The Bidder has to Quote for all the items in the NIT. Bidders who do not Quote for all the items are subject to be disqualified.
4. Sealed quotations must be affixed with court fee stamps of Rs. 8.25 (Rupees eight and paisa twenty five) only without which no quotation will be accepted.

NIT TERMS & CONDITIONS:

01. **Rates:** Rates quoted in the **Price Bid** should be **on DOOR DELIVERY at AEI, Guwahati basis**, as per details below:

Sl. No.	Particulars	Rate
1.	Basic Price (per unit) with installation and commissioning	
	Total	
	Taxes (pl. give break up)	
	Grand Total for door delivery of the item at AEI Premises	

Bidders shall indicate their rates in clear/visible figures as well as in words and shall not alter/overwrite/make cutting in the quotation. In case of a mismatch, the rates written in words will prevail.

02. **Validity of Quotation:** Quoted rates must be valid for **90 days** from the date of quotation.
03. **Warranty:** The quoted equipment and components must be warranted for a minimum of one Year or period specified against the item.
04. **Literature a must:** All the quotations must be supported by the printed technical leaflet/literature and the specifications mentioned in the quotation must be reflected/ supported by such printed technical leaflet/literature. The model and specifications quoted should **invariably be highlighted** in the leaflet/literature for easy reference.
05. **After Sales Service:** Vendors should clearly state the available nearest after sales service facilities in the region, without which their offers will be rejected.
06. **Dealership Certificate:** Dealers or Agents quoting on behalf of Manufacturer must enclose valid dealership certificate.

07. Earnest Money:

Refundable earnest money deposit (EMD) @ 2% on Total Quoted Price through demand draft drawn in favour of “**The Principal, Assam Engineering Institute**”, payable at Guwahati, will have to accompany the technical Bid. The EMD of unsuccessful bidders shall be returned after award of contract. EMD of the successful bidder will be released on submission of the Performance. Offers received without Earnest Money or valid Certificate shall be summarily rejected.

08. Performance Bank Guarantee (PBG): In case of items with order value of Rupees Five Lakhs (INR 5,00,000/-) and above, the successful bidder shall furnish an unconditional PBG (as per format at **Annexure II**) for 5% of the Purchase Order value from a scheduled Bank of India, after receiving the purchase order. Where the PBG is obtained by a foreign bank, it shall be got confirmed by a Schedule Indian bank and shall be governed by Indian Laws and be subject to the jurisdiction of courts at Guwahati. The PBG shall guarantee that,

- (a) The Vendor guarantees satisfactory operation of the Equipment & components against poor workmanship, bad quality of materials used, faulty designs and poor performance.
- (b) The Vendor shall, at his own cost, rectify the defects/replace the items supplied, for defects identified during the period of guarantee.
- (c) This guarantee shall be operative from the date of installation till 60 days after the warranty period.

09. Delivery:

- a) **Time Limit:** Maximum within 10-12 Weeks from the date of issue of this purchase order.
- b) **Safe Delivery:** All aspects of safe delivery shall be the exclusive responsibility of the vendor. At the destination site, the package will be opened only in the presence of AEI user/representative and vendor's representative. The intact condition of the package and the seal/indicators for not being tampered with, shall form the basis for certifying the receipt in good condition.
- c) **Insurance:** The supplier is to establish ‘All Risk Transit Insurance’ coverage till door delivery at AEI, Guwahati, Assam.
- d) **Part Delivery:** Acceptance of part delivery shall be a prerogative of the institute.

10. Conditional tenders not acceptable: All the terms and conditions mentioned herein must be strictly adhered to by all the vendors. Conditional tenders shall not be accepted on any ground and shall be rejected straightway. Conditions mentioned in the tender bids submitted by vendors will not be binding on AEI, Guwahati.

11. Road Permit: Assam Engineering Institute will not provide any Road Permit to the Vendors.

12. VAT deduction at source: In case of suppliers within Assam, VAT deduction at source, as per Order/ notification of the Govt. of Assam will be applicable.

13. Late and delayed tender: Late and delayed tender will not be considered. In case any unscheduled holiday occurs on the prescribed closing/opening date the next working day shall be the prescribed date of closing/opening.

14. Payment: Payment will be released only after successful completion of installation and acceptance, Demo and Test run etc.

15. Enquiry during the course of evaluation not allowed: No enquiry from the bidder(s) shall be entertained during the course of evaluation of the tender till final decision is conveyed to the successful bidder(s). However, the Purchase Committee or its authorized representative may make enquiries/seek clarification from the bidders. In such a case, the bidder must extend full co-operation. The bidders may also be asked to arrange demonstration of the offered items, in a short period of notice.

16. The acceptance of the quotation will rest solely with the Principal, AEI, who in the interest of the Institute is not bound to accept the lowest quotation and reserves the right to himself to reject or partially accept any or all the quotations received without assigning any reasons.

17. Force Majeure:

If the performance of the obligation of either party is rendered commercially impossible by any of the events hereafter mentioned that party shall be under no obligation to perform the agreement under order after giving notice of 15 days from the date of such an event in writing to the other party, and the events referred to are as follows:

- i. Any law, statute or ordinance, order action or regulations of the Government of India,
- ii. Any kind of natural disaster, and
- iii. Strikes, acts of the Public enemy, war, insurrections, riots, lockouts, sabotage.

18. Applicable Law:

- (a) The contract shall be governed by the laws and procedures established by Govt. of India and subject to exclusive jurisdiction of Competent Court and Forum in Guwahati/Assam.
- (b) Any dispute arising out of this purchase shall be referred to The Principal, Assam Engineering Institute, Guwahati, Assam and if either of the parties hereto is dissatisfied with the decision, the dispute shall be referred to the decision of an Arbitrator, who should be acceptable to both the parties, to be appointed by the Principal of the Institute. The decision of such Arbitrator shall be final and binding on both the parties.

Sd/-

Principal,
Assam Engineering Institute,
Chandmari, Guwahati

Encl.: ANNEXURE-I, ANNEXURE-II, ANNEXURE-III, ANNEXURE-IV, ANNEXURE-V, ANNEXURE-VI, ANNEXURE-VII, ANNEXURE-VIII, ANNEXURE-IX, ANNEXURE-X, ANNEXURE-XI, ANNEXURE-XII, ANNEXURE-XII, ANNEXURE-XIV, ANNEXURE-XV & ANNEXURE-XVI

Annexure -I

A. COMPLIANCE CERTIFICATE FOR NIT TERMS
(To be enclosed in the Technical bid)

Sl. No.	NIT Terms and Conditions	Yes/No
01	ISO 9001:2008 Certification	
02	ISO 14001:2004 Certification	
03	CCNA Certified and Qualified Personnel	
04	Rate quoted as per instruction	
05	Validity of quoted rate for 90 days agreed	
06	EMD submitted (appropriate certificate enclosed)	
07	PBG term agreed	
08	Payment term agreed	
09	Delivery terms agreed	
10	Warranty period agreed	
11	Literature: Printed Literature provided	
12	Dealership / distributorship certificate (in case of dealers/agents) provided	
13	Sales Service: address of after Sales Service centre in India (for imported goods)/ in the region provided	
14	Applicable law terms agreed	

Signature with Seal:.....

Vendor: M/s.....

B. COMPLIANCE CERTIFICATE FOR SPECIFICATIONS
(One for each item must to be enclosed in the Technical bid)

Item Sl. No.	Specifications as per Annexure-IV, VII, VIII, IX, X, XI, XII, XIII, XIV, XV, XVI, XV, XVI	Quoted Item Specs.*	Complied (Yes/No)

Signature with Seal:.....

Vendor: M/s.....

*** Vendor must quote the parameter specification of the quoted product in this column and not just copy the specification from the tender call document. Failure to do so will lead to rejection of the tender.**

Annexure -II

PERFORMANCE BANK GUARANTEE

To:

The Principal,
Assam Engineering Institute,
Guwahati, Assam

WHEREAS (Name of Supplier)
hereinafter called "the Supplier" has undertaken, in pursuance of Contract No..... dated,.....
20... to supply..... (Description of Goods and Services)
hereinafter called "the order".

AND WHEREAS it has been stipulated by you in the said order that the Supplier shall furnish you
with a Bank Guarantee by a recognized bank for the sum specified therein as security for compliance
with the Supplier's performance obligations in accordance with the order.

AND WHEREAS we have agreed to give the Supplier a Guarantee:
THEREFORE WE hereby affirm that we are Guarantors and responsible to you, on behalf of the
Supplier, up to a total of (Amount of the Guarantee in
Words and Figures) and we undertake to pay you, upon your first written demand declaring the
Supplier to be in default under the order and without cavil or argument, any sum or sums within the
limit of (Amount of Guarantee) as aforesaid, without your needing to prove or to
show grounds or reasons for your demand or the sum specified therein.

This guarantee is valid until theday of.....20.....

Signature and Seal of Guarantors

.....
.....
.....

Date.....20....

Address:.....

.....
.....

All correspondence with reference to this guarantee shall be made at the following address:

The Principal,
Assam Engineering Institute,
Guwahati, Assam-781003

Annexure -III

MANUFACTURERS' AUTHORIZATION FORM

No.

Dated _____

The Principal,
Assam Engineering Institute,
Guwahati, Assam

Dear Sir,

We..... who are established and reputable
manufacturers ofhaving factories at--

(address of factory) do hereby certify
that.....

.....(Name of the Authorised Dealer)is our authorized dealer to quote against your
tender enquiry no
..... ,

Last Date of Submission is:

No other Company other than(Name of
the Authorized Dealer) is authorized to quote of our products against this Tender Enquiry
No.....

Yours faithfully,
(Name)
(Name of manufacturers)

Annexure –IV
TECHNICAL SPECIFICATIONS

Sl. No.	Item	Technical Specifications	Qty.	UOM
1(a)	Managed Switch, 48 Port	48 Ports 10/100/1000Mbps + 4 SFP Managed SmartPro L2+ Switch (Details as per Annexure VII)	3	Nos.
1(b)	Managed Switch, 24 Port	24 Ports 10/100/1000Mbps + 4 SFP Managed SmartPro L2+ Switch (Details as per Annexure VII)	7	Nos.
2	SFP Module	1-port mini-GBIC LX Single-mode Fiber Transceiver (up to 10km, support 3.3V power) (Details as per Annexure VIII)	4	Nos.
3	I/O Box	Jack Cat 6 Keystone UTP – White (Details as per Annexure IX)	60	Nos.
		Face Plate - Single (Keystone Jack, square) (Details as per Annexure IX)	60	Nos.
		Back Box For Single, Dual (Cat 5e/Cat6/Cat6A,square) (Details as per Annexure IX)	60	Nos.
4	Cat6 Cable	CAT6 UTP 23AWG Solid:305M (Details as per Annexure X)	13	Box
5	Patch Panel	Patch Panel Cat 6 UTP Keystone Type- 24 Port-Fully Loaded (Details as per Annexure XI)	7	Nos.
		Patch Panel Cat 6 UTP Keystone Type- 48 Port-Fully Loaded (Details as per Annexure XI)	3	Nos.
6	Patch Cord	CAT6 UTP 24AWG PATCH CORD:1M,Plug 30U' Snagless (Details as per Annexure XII)	60	Nos.
		CAT6 UTP 24AWG PATCH CORD:2M,Plug 30U' Snagless (Details as per Annexure XII)	60	Nos.
7	Enclosure	9 U Rack (Details as per Annexure XIII)	3	Nos.
		6 U Rack (Details as per Annexure XIII)	7	Nos,
8	Fiber Cable	O. F. Cable 06F Outdoor - Armoured Unitube SM - HDPE Sheath (Details as per Annexure XIV)	600	Meter
9(a)	Fiber Termination Unit	LIU 24 PORT Rack Mount - Loaded (SC) SM (Details as per Annexure XV)	1	Nos.
		PIGTAIL SC SM SIMPLEX LENGTH- 1m (Details as per Annexure XV)	12	Nos.
9(b)	Fiber Termination Unit	LIU 6 PORT Rack Mount – UnLoaded (Details as per Annexure XV)	2	Nos.
		1 x 6 Adapter Panel – SC (Details as per Annexure XV)	2	Nos.

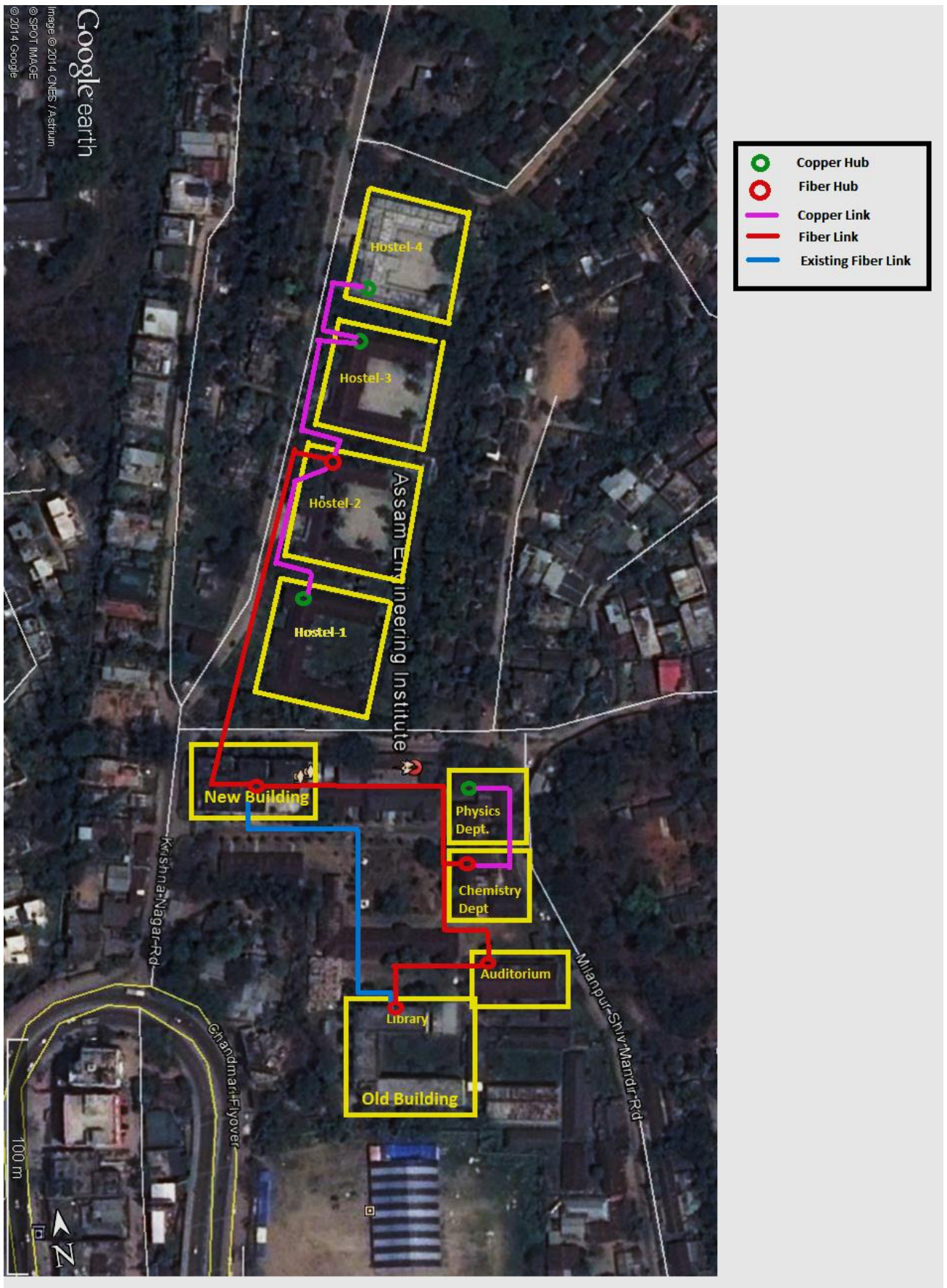
		ADAPTOR SC SM (Details as per Annexure XV)	12	Nos.
		PIGTAIL SC SM SIMPLEX LENGTH- 1m (Details as per Annexure XV)	12	Nos.
10	Fiber Patch Cord	PATCH CORD LC-SC SM DUPLEX LENGTH- 1m (Details as per Annexure XVI)	4	Nos.
		PATCH CORD LC-SC SM DUPLEX LENGTH- 2m (Details as per Annexure XVI)	4	Nos.
11	Service, Installation, Commissioning & Service Support	One time Service & Installation charges for above items including laying of cables (Fiber & Cat6 both), configuring of Switches, etc., and One Year Service Support	1	Job

ADDITIONAL ITEMS

The Item wise Rates for the following additional items are to be included as per the requirements of the Institute.

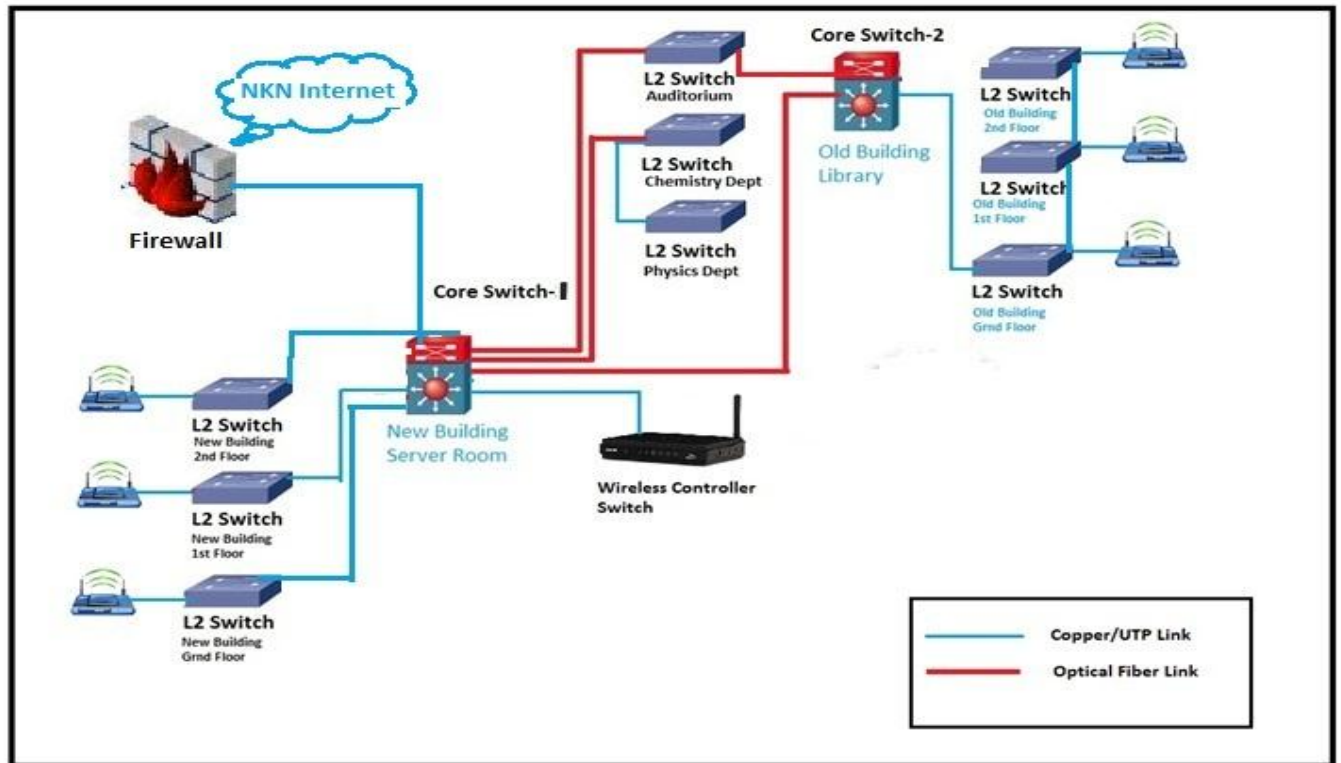
Sl. No.	Item	Technical Specifications	Qty.	UOM
1	HDPE Pipe	HDPE telecom duct,32 mm for Laying of Fiber Cable	2000 (approx.)	Mtr.
2	PVC Conduit	PVC Conduit (casing/capping or Pipe), ISI marked	3000 (approx.)	Mtr.
3	GI Conduit	GI Conduit, 32 mm for Laying of Fiber Cable	40	Mtr.
4	Service, Installation, Commissioning & Service Support	One time Service & Installation charges for above items including laying of Pipes & Conduits, etc., and One Year Service Support	1	Job

Annexure-V
Proposed Campus Local Area Network (LAN) Layout at Assam Engineering Institute



Annexure-VI

Proposed Local Area Network (LAN) Layout Diagram of Assam Engineering Institute



Annexure-VII
Managed Switch, 48 Port & 24 Port –Specifications

Sl. No.	Required Specifications
1(a)	48 Port L2 Switch
	L2 Managed Switch having 48x10/100/1000BaseT ports and 4xSFP slots
	Switching Capacity should be at least 104 Gbps
	Packet Forwarding Rate should be at least 77.4 Mpps for 64-byte packet size
	The switch should have non-blocking architecture & wire-speed performance under fully loaded condition from day-1
	The switch should have minimum 2 Nos. of Smart Phone. It should have hardware reset button. Power consumption should be less then 43.5 watt
	The switch should have support for virtual stacking in IPv4 & IPv6 with at least 32 units per stack.
	The Switch should have following L2 features from Day-1
	1. MAC Address Table size: At least 16000, support at least 256 static MAC
	2. Flow Control: IEEE 802.3x in full duplex, back pressure in half duplex & HoL blocking prevention
	3. Jumbo Frame Support (At least 10K bytes)
	4. IGMP v1 v2 with at least 256 IGMP snooping groups, Per VLAN IGMP Snooping, port based IGMP snooping fast leave.
	5. IEEE802.1D STP, 802.1w RSTP, 802.1s MSTP Root guard or equivalent feature.
	6. The switch should be able to avoid the loop occurring in a single port connected to an unmanaged switch/hub by shutting down the corresponding port or corresponding VLAN
	7. IEEE 802.3ad Link Aggregation with at least 8 ports per groups & 14 groups per switch. LACP
	8. Port mirroring for Tx/Rx/Both. One-to-One mode, Many-to-one mode
	9. IEEE 802.1Q VLAN, at least 4000 Static VLANs, 256 Dynamic VLANs Groups, GVRP, Voice-VLAN, asymmetric VLAN
	The switch should have 802.1p support with 4 queues per port. Support strict & WRR queue handling technique.
	The switch should have Port-based ingress & egress bandwidth control with minimum granularity of at least 64kbps
	The switch should have standard & extended Access control list for both IPv4 & IPv6
	The switch should have the following security features from first day: SSHv1 v2 for IPv4 & v6, SSLv1 v2 v3 for IPv4 & v6, Broadcast/Multicast & Unicast storm control, port security feature with at least 64 MAC per port, traffic segmentation, ARP spoofing prevention, IEEE 802.1x, DHCP server screening for IPv4 & v6 , IPv6 RADIUS Server
	The switch should have feature to protect the CPU from protocol control packet attack.
	The switch should have feature of at least 32 static routes & default root from day-1
	The Switch should have following Management features from day-1: Web-based GUI, CLI, Telnet Server, TFTP Client, SNMPv1v2cv3, SNMP trap, BootP/DHCP Client, SNTP, trusted host, debug command, RMONv1, Syslog, ICMPv6, DHCP Relay Option 12 & option 82, IPv6 Neighbor Discovery,
	IPv4 & IPv6 Dual Stack. IPv6 Core Ready Logo Phase II
	The switch should have Energy saving green technology based on cable length & link status.
	The switch should be 1U height
	The switch should be RoHS compliant & should have following certifications: FCC Class A, CE Class A, VCCI Class A, C-Tick
	OEM should have valid ISO 9001 & ISO 14001 for design & development for wired &

	wireless networking products.
	Company & brand & product category (networking products) together should be present in India at least for last 20 years.
	All the switches with transceivers, and Passive components should be from same make

Sl. No.	Required Specifications
1(b)	24 Port L2 Switch
	L2 Managed Switch having 24x10/100/1000BaseT ports and 4xSFP slots
	Switching Capacity should be at least 56Gbps
	Packet Forwarding Rate should be at least 41.7Mpps for 64-byte packet size
	The switch should have non-blocking architecture & wire-speed performance under fully loaded condition from day-1
	The switch should have fanless design. It should have hardware reset button. Power consumption should be less than 18watt
	The switch should have support for virtual stacking in IPv4 & IPv6 with at least 32 units per stack.
	The Switch should have following L2 features from Day-1
	1. MAC Address Table size: At least 16000, support at least 256 static MAC
	2. Flow Control: IEEE 802.3x in full duplex, back pressure in half duplex & HoL blocking prevention
	3. Jumbo Frame Support (At least 10K bytes)
	4. IGMP v1 v2 with at least 256 IGMP snooping groups, Per VLAN IGMP Snooping, port based IGMP snooping fast leave.
	5. IEEE802.1D STP, 802.1w RSTP, 802.1s MSTP Root guard or equivalent feature.
	6. The switch should be able to avoid the loop occurring in a single port connected to an unmanaged switch/hub by shutting down the corresponding port or corresponding VLAN
	7. IEEE 802.3ad Link Aggregation with at least 8 ports per groups & 14 groups per switch. LACP
	8. Port mirroring for Tx/Rx/Both. One-to-One mode, Many-to-one mode
	9. IEEE 802.1Q VLAN, at least 4000 Static VLANs, 256 Dynamic VLANs Groups, GVRP, Voice-VLAN, asymmetric VLAN
	The switch should have 802.1p support with 4 queues per port. Support strict & WRR queue handling technique.
	The switch should have Port-based ingress & egress bandwidth control with minimum granularity of at least 64kbps
	The switch should have standard & extended Access control list for both IPv4 & IPv6
	The switch should have the following security features from first day: SSHv1 v2 for IPv4 & v6, SSLv1 v2 v3 for IPv4 & v6, Broadcast/Multicast & Unicast storm control, port security feature with at least 64 MAC per port, traffic segmentation, ARP spoofing prevention, IEEE 802.1x, DHCP server screening for IPv4 & v6 , IPv6 RADIUS Server
	The switch should have feature to protect the CPU from protocol control packet attack.
	The switch should have feature of at least 32 static routes & default route from day-1.
	The Switch should have following Management features from day-1: Web-based GUI, CLI, Telnet Server, TFTP Client, SNMPv1v2cv3, SNMP trap, BootP/DHCP Client, SNTP, trusted host, debug command, RMONv1, Syslog, ICMPv6, DHCP Relay Option 12 & option 82, IPv6 Neighbor Discovery,
	IPv4 & IPv6 Dual Stack. IPv6 Core Ready Logo Phase II
	The switch should have Energy saving green technology based on cable length & link status.
	The switch should be 1U height

	The switch should be RoHS compliant & should have following certifications: FCC Class A, CE Class A, VCCI Class A, C-Tick
	OEM should have valid ISO 9001 & ISO 14001 for design & development for wired & wireless networking products.
	Company & brand & product category (networking products) together should be present in India at least for last 20 years.
	All the switches with transceivers, and Passive components should be from same make

Annexure-VIII
SFP Module-Specifications

Sl. No.	Required Specifications
2	SFP Module
	1000BaseLx Single Mode LC Style transceiver
	Distance support at fiber side: at least 10Km
	Transceiver should be of same make as switch
	OEM should have valid ISO 9001 & ISO 14001 for design & development for wired & wireless networking products.
	Company & brand & product category (networking products) together should be present in India at least for last 20 years
	All the switches with transceivers, wireless components should be from same make

Annexure-IX
I/O Box-Specifications

Sl. No.	Required Specifications
3	Cat-6 Single port Information Outlet
	Housing should be ABS, UL94V-0
	RJ45 Jack Contact material should be Phosphor Bronze with Nickel Plated , 50 Micro-inch Gold Plated on plug contact area
	Universal Labels color-coded for T568A and T568B wiring schemes
	Contact Bracket should be PC, UL 94v-2 Transparent Color.
	UK Style with shutter against dust and labeling plate.
	Should be compliant with RoHS
	It supports IEC 60603-7-4 and complied with ANSI/TIA/EIA-568-c.2 standard.
	OEM Should be ISO 9001 and ISO14001 certified for design, development for LAN and WAN products. Company and Brand together presence in India should be for last 20 years.

Annexure-X
Cat-6 Cable –Specifications

Sl. No.	Required Specifications
4	Cat-6 UTP Cable
	4-Pair Unshielded twisted pair cable supports Gigabit Ethernet standard
	23 AWG solid copper conductor for superior conductivity
	PE insulation and Central Cross
	Conductor should be Bare Copper with HD-PE insulation
	Characteristic Impedance: $100 \pm 15\Omega$
	Conductor resistance : $\leq 9.38\Omega /100m$
	Resistance Unbalance 5% Max
	Capacitance Unbalance 330pF/100m
	Delay Skew: <45nS
	Cable should be ANSI/TIA-568-c.2 category6 ISO 11801 ClassE
	Should be compliant with RoHS
	Should be UL Listed and ETL Certified
	OEM Should be ISO 9001 and ISO14001 certified for design, development for LAN and WAN products. Company and Brand together presence in India should be for last 20 years.

Annexure-XI
Patch Panel –Specifications

Sl. No.	Required Specifications
5	Cat-6 24 and 48 Port Patch Panel
	24 and 48 Port Cat-6 fully loaded Patch Panel
	ID strips for identifying port allocations
	IDC compatible with 110 & Krone tool
	Terminating 4 pairs, 22-26AWG, unshielded cable
	Universal labels color-coded for T568A and T568B wiring schemes
	RJ45 Jack housing should be ABS, UL94V-0
	RJ45 Jack Contact Material should be Phosphor Bronze with Nickel plated
	IDC: Housing: PC+Glass Fiber, UL94V-2
	Terminal: Phosphor Bronze with Tin Plated
	Should be compliant with RoHS
	Should be Complied with the ANSI/TIA/EIA-568-C.2
	OEM Should be ISO 9001 and ISO14001 certified for design, development for LAN and WAN products. Company and Brand together presence in India should be for last 20 years.

Annexure-XII
Patch Cord –Specifications

Sl. No.	Required Specifications
6	Cat-6 Patch Cord
	Cat 6 four pair twisted cable terminated with RJ45 at both the ends.
	24 AWG Multi-strands Bare Copper Conductor
	High Density Polyethylene insulation
	PVC UL94V-0 Material
	RJ45 Jack Contact material should be Phosphor Bronze with Nickel Plated
	Should be TIA/EIA-568-c.2 Standard.
	Should be compliant with RoHS
	Length: 1mtr & 2 mtr. as per the Bill of Materials
	OEM Should be ISO 9001 and ISO14001 certified for design, development for LAN and WAN products. Company and Brand together presence in India should be for last 20 years.

Annexure-XIII
Enclosure –Specifications

Sl. No.	Required Specifications
7	Enclosure / Rack
	Racks manufactured out of steel sheet punched, formed, welded and Powder coated
	Rack should be from ISO 9001:2008 Certified Company
	Standard for Racks configuration will be welded frame and vented top cover
	Rack should have Front Toughened Glass Door with lock & Key and Back Cover
	Rack should be 9U(1U=44.45 mm) in Height, 550MM Width, 500MM Depth.
	Rack should Conform to DIN 41494 or Equivalent EIA /ISO / EN/CEA Standard
	Rack should have Adjustable mounting depth,
	Rack 4 No Adjustable, 19” verticals with Punched 10mm Square Hole and Universal
	12.7mm 15.875mm 15.875mm alternating hole pattern offers greater mounting flexibility, maximizes usable mounting space.
	Rack should have Numbered U positions
	Rack should have 100% assured compatibility with all equipment conforming to DIN 41494 (General industrial standard for equipments)
	Powder coated finish with seven Tank pretreatment process meeting IS
	Rack should have Proper Grounding & Bonding
	Rack should have Fan module Mount Provision on top Cover
	1Ph, 230V, 8A, 2U standard rack mount power distribution unit with 6 X Indian Round Pin 5A, Inlet Plug type 6A Indian Round Pin, 8A Fuse 1 PDU Rating 1.8KVA
	Rack should have 1 No Cantilever shelf.
	Rack should have minimum 1 No. of Fan.
	Rack should have minimum 1 No. Horizontal Cable Organizer with Plastic Loops.
	Rack should have provision for cable entry Exit from Both top & Bottom.
	Rack should have 1 Packet of Mounting hardware, Pack of 20

Annexure-XIV
Fiber Cable –Specifications

Sl. No.	Required Specifications
8	Fiber Optical Cable
	6 Core Single Mode Outdoor Armored Fiber Optic Cable
	Protected by Glass yarn in between corrugated steel tape & loose tube
	Sequential meter marking
	Standards: ISO 11801, IEC6079311, IEC6079411.2, ITU1T REC G.652D, Telecordia GR120 Core
	The fiber type is a Matched Cladding Single Mode
	Fiber dual coated with acrylate coating.
	The fiber is optimized for operation at 1310 nm and at 1550 nm.
	Nominal Mode Field Diameter: 9.2 Km
	Mode field diameter tolerance: $\pm 4\%$
	Cladding Diameter: 125 Km
	Cladding diameter tolerance: ± 1 Km
	Mode field Concentricity error: < 1 Km
	Cladding noncircularity: $< 2\%$
	Germanium doped core with no phosphorus i.e. reduced tendency for hydrogen degradation.
	UV curable dual layer acrylate coating, which ensures excellent micro bending and abrasion resistance.
	Attenuation (of cable with fibers):
	At 1310 nm: ≤ 0.36 dB/km
	In the range 1285-1330 nm : ≤ 0.40 dB/km
	At 1550 nm : ≤ 0.22 dB/km
	OEM should have valid ISO 9001 & ISO 14001 for design & development for wired & wireless networking products.
	All the passive components should be from same make

Annexure-XV
Fiber Termination Unit –Specifications

Sl. No.	Required Specifications
9(a) & 9(b)	Fiber Termination Unit / LIU (24 Ports / 06 Ports)
	Have sufficient slots accommodate Simplex SC adapters individually.
	Aluminum base material for light mounting
	Should have Splice Tray & Cable Spool provision inside
	Accessory kit consists of cable ties, mounting ear screw earthing and spiral wrap tube.
	Panel cover should be slide out for easy maintenance
	Removable Rear & Front cover for better access to interior of LIU
	Should be loaded with 24nos.of SC Single mode simplex adapters
	Adapters should be Telcordia, TIA/EIA, IEC compliance
	OEM should have valid ISO 9001 & ISO 14001 for design & development for wired & wireless networking products.
	All the passive components should be from same make

Annexure-XVI
Fiber Patch Cord –Specifications

Sl. No.	Required Specifications
10	Fiber Optic Patch Cord
	All optical fiber patch leads shall comprise of Single mode 9/125Km fiber with SC & LC fiber connectors terminated at each end. The optical fiber patch leads shall comply with the following specifications:
	Optical Fiber – Corning Single Mode
	Connector: Zirconia ceramic ferrule
	Pre1radiuses and pre1polished ferrule
	Duplex
	Color1coded Yellow for SM
	Insertion Loss 1 <0.2 db
	Cable: 9/125, SM
	Repeatability 1 < 0.2 db
	Durability – 1000 mating cycle
	Working Temp : 140 deg. C° to + 85 deg. C°
	Standard : G652D, G 657A & G 657B
	Length : 1 Mtr
	All the passive components should be from same make