

Online Bids

are invited

for

**SUPPLY, INSTALLATION, INTEGRATION AND COMMISSIONING OF
EXTENSION OF IIT (BHU) LOCAL AREA NETWORK (WIRED AND WI-FI) IN
ADDITIONAL LOCATIONS**

Tender No.:IIT(BHU)/IPCell/2019-20/Networking/149

Tender Date: 24.05.2019

Pre-bid Meeting Date: 29.05.2019

Last Date of Submission: 15.06.2019

Tender opening: 17.06.2019



**Indian Institute of Technology
(Banaras Hindu University)
Varanasi-221005**

E-mail: chair.lan@iitbhu.ac.in



Advertised Tender Enquiry Documents
INDIAN INSTITUTE OF TECHNOLOGY (BHU), VARANASI
(NOTICE INVITING TENDER)

On behalf of the Director, IIT (BHU) Varanasi, online tender from manufactures (or their 'authorized' dealers that they have been authorized to quote in response to this NIT) of the following items are invited:

Sl. No.	Tender No. and Last Date	Specifications & Quantity of the item	Earnest Money Deposit to be submitted
1.	IIT(BHU)/IPCell/2019-20/ Networking /149 dated 24.05.2019 Last date : 15.06.2019	TECHNICAL BID 1. Technical Specifications PRICE BID 2. Price Bid (as per BoQ enclosed)	Rs. 3,00,000

Tender Documents may be downloaded from Central Public Procurement Portal <http://eprocure.gov.in/eprocure/app> or IIT(BHU) website <https://www.iitbhu.ac.in/tenders>. Tenderers can access tender documents on the CPP Portal. Select the appropriate tender and fill them with all relevant information and submit the completed tender document online on the website <http://eprocure.gov.in/eprocure/app> as per the schedule given in the next page.

Aspiring Bidders who have not enrolled/registered in e-procurement should enroll/register before participating through the website <http://eprocure.gov.in/eprocure/app>. The portal enrolment is free of cost. Bidders are advised to go through instructions provided at 'Instructions for online Bid Submission'.

No manual bids will be accepted. All quotation (both Technical and Financial should be submitted in the E- procurement portal).

The Tender should be addressed to **The Chairman, Institute Network Infrastructure Committee (INIC), Indian Institute of Technology (Banaras Hindu University), Varanasi – 221005, U.P.**, and should be submitted online on or before the date and time of Bid opening date as mentioned in critical date sheet.

The Institute shall not be responsible for any delay in submitting on line Bids. The Institute reserves the right to accept or reject any bid, cancel the Tender without assigning any reason thereof. No correspondence in this regard will be entertained.

NOTE : The decision of the Director, IIT (BHU) will be final and binding to all bidders.

Earnest Money shall be forfeited, if it is found at any stage that information/particulars regarding supply of tendered item (s) is false.

Sd/-

The Chairman,
Institute Network Infrastructure Committee (INIC)
Indian Institute of Technology
(Banaras Hindu University), Varanasi – 221005
E-mail: chair.lan@iitbhu.ac.in



**TENDER DOCUMENT FOR
SUPPLY, INSTALLATION, INTEGRATION AND COMMISSIONING OF EXTENSION OF IIT
(BHU) LOCAL AREA NETWORK (WIRED AND WI-FI) IN ADDITIONAL LOCATIONS
CRITICAL DATA SHEET**

Name of Organization	Indian Institute of Technology (Banaras Hindu University)
Tender	Open
Type/Form of Contract (Work/Supply/Auction/ Service/ Buy/ Empanelment/ Sell)	SUPPLY
Product Category(Civil Works/Electrical Works/Fleet Management/Computer Systems)	Other
Date of Issue/Publishing Original Tender	24.05.2019
Document Download Start Date	24.05.2019
Document Download End Date	15.06.2019
Pre Bid Meeting Date* *Queries, if any, to be discussed MUST be emailed to chair.lan@iitbhu.ac.in , latest by 28.05.2019, for consideration.	29.05.2019 (12:30 PM) Place : Committee Room, First Floor, R&D Office, IIT(BHU), Varanasi
Corrigendum, if any	30.05.2019
Last Date and Time for Uploading of Bids	15.06.2019 (6:00PM)
Date and Time of Opening of Technical Bids	17.06.2019 (11:30AM)
Tender Fee	Rs. 11,800/- (For Tender Processing Fee)
EMD	Rs. 3,00,000/- (For EMD) (To be paid through RTGS/NEFT) as per the following details: Name of Account - Registrar, IIT(BHU) Name of the Bank - State Bank of India Name of Branch - IT, BHU, Varanasi Account No. - 32778803937 IFSC Code - SBIN0011445 The proof of payment must be enclosed with Technical Bid. Both the transaction should be done separately.
No. of Covers (1/2/3/4)	02
Bid Validity days (180/120/90/60/30)	180 days (From last date of opening of tender)
Address for Communication	The Chairman, Institute Network Infrastructure Committee (INIC), Indian Institute of Technology (Banaras Hindu University), Varanasi – 221005, U.P.
Contact No. & E-mail Address	+91 542 2367036 (O), chair.lan@iitbhu.ac.in



TENDER DOCUMENT FOR SUPPLY, INSTALLATION, INTEGRATION AND COMMISSIONING OF EXTENSION OF IIT (BHU) LOCAL AREA NETWORK (WIRED AND WI-FI) IN ADDITIONAL LOCATIONS

INVITATION FOR BIDS

1. Online bids are invited from eligible bidders for the following:

Sl. No.	Tender no.	Specifications & quantity of the item	Earnest Money Deposit (EMD)
1.	IIT(BHU)/IPCCell/2019-20/ Networking /149 dated 24.05.2019 Last date : 15.06.2019	TECHNICAL BID 1. Technical Specifications PRICE BID 2. Price Bid (as per BoQ enclosed)	Rs. 3,00,000/-

- Interested eligible Bidders may obtain further information from IIT (BHU) website: <https://www.iitbhu.ac.in/tenders> or from Central Public Procurement Portal (CPPP) <https://eprocure.gov.in/eprocure/app>.
- Intending bidders are advised to visit IIT (BHU) website <https://www.iitbhu.ac.in/tenders> and CPPP website <https://eprocure.gov.in/eprocure/app> regularly till closing date of BID submission of tender for any corrigendum / addendum/ amendment.
- Earnest Money Deposit is to be deposited electronically by RTGS/NEFT in the account of Registrar, IIT (BHU) in the Bank details mentioned above. Bidders are required to submit the scan copy of payment receipt details of Tender fees and EMD payment at the time of Bid Preparation.
- This Tender Document contains the following:
 - Instructions for Online Bid Submission
 - Instruction to Bidders
 - General conditions of contract (GCC)
 - Special Condition of Contracts
 - Check-list for Bid/Tender submission
 - Declaration Certificate
 - Technical specifications for the complete project (Annexure I)
 - Compliance Sheet

SECTION 1: INSTRUCTION FOR ONLINE BID SUBMISSION

As per the directives of Department of Expenditure, this tender document has been published on the Central Public Procurement Portal ([URL:http://eprocure.gov.in/eprocure/app](http://eprocure.gov.in/eprocure/app)). The bidders are required to submit soft copies of their bids electronically on the CPP Portal, using valid Digital Signature Certificates. The instructions given below are meant to assist the bidders in registering on the CPP Portal, prepare their bids in accordance with the requirements and submitting their bids online on the CPP Portal. More information useful for submitting online bids on the CPP Portal may be obtained at: <http://eprocure.gov.in/eprocure/app>.

1. Registration

1. Bidders are required to enroll on the e-Procurement module of the Central Public Procurement Portal ([URL:http://eprocure.gov.in/eprocure/app](http://eprocure.gov.in/eprocure/app)) by clicking on the link “Click here to Enroll”. Enrolment on the CPP Portal is free of charge.
2. As part of the enrolment process, the bidders will be required to choose a unique username and assign a password for their accounts.
3. Bidders are advised to register their valid email address and mobile numbers as part of the registration process. These would be used for any communication from the CPP Portal.
4. Upon enrolment, the bidders will be required to register their valid Digital Signature Certificate (Class II or Class III Certificates with signing key usage) issued by any Certifying Authority recognized by CCA India (e.g. Sify / TCS / nCode / eMudhra etc.), with their profile.
5. Only one valid DSC should be registered by a bidder. Please note that the bidders are responsible to ensure that they do not lend their DSCs to others which may lead to misuse.
6. Bidder then logs in to the site through the secured log-in by entering their user ID / password and the password of the DSC / eToken.

2. Searching for Tender Documents

1. There are various search options built in the CPP Portal, to facilitate bidders to search active tenders by several parameters. These parameters could include Tender ID, organization name, location, date, value, etc. There is also an option of advanced search for tenders, wherein the bidders may combine a number of search parameters such as organization name, form of contract, location, date, other keywords etc. to search for a tender published on the CPP Portal.
2. Once the bidders have selected the tenders they are interested in, they may download the required documents / tender schedules. These tenders can be moved to the respective ‘My Tenders’ folder. This would enable the CPP Portal to intimate the bidders through SMS / e-mail in case there is any corrigendum issued to the tender document.
3. The bidder should make a note of the unique Tender ID assigned to each tender, in case they want to obtain any clarification / help from the Helpdesk.

3. Preparation of Bids

1. Bidder should take into account any corrigendum published on the tender document before submitting their bids.
2. Please go through the tender advertisement and the tender document carefully to understand the documents required to be submitted as part of the bid. Please note the number of covers in which the bid documents have to be submitted, the number of documents – including

the names and content of each of the document that need to be submitted. Any deviations from these may lead to rejection of the bid.

3. Bidder, in advance, should get ready the bid documents to be submitted as indicated in the tender document / schedule and generally, they can be in PDF / XLS / RAR / DWF formats. Bid documents may be scanned with 100 dpi with black and white option.
4. To avoid the time and effort required in uploading the same set of standard documents which are required to be submitted as a part of every bid, a provision of uploading such standard documents (e.g. PAN card copy, annual reports, auditor certificates etc.) has been provided to the bidders. Bidders can use “My Space” area available to them to upload such documents. These documents may be directly submitted from the “My Space” area while submitting a bid, and need not be uploaded again and again. This will lead to a reduction in the time required for bid submission process.

5. Submission of Bids

1. Bidder should log into the site well in advance for bid submission so that he/she upload the bid in time i.e. on or before the bid submission time. Bidder will be responsible for any delay due to other issues.
2. The bidder has to digitally sign and upload the required bid documents one by one as indicated in the tender document.
3. Bidder has to select the payment option as “on-line” to pay the tender fee / EMD as applicable and enter details of the instrument. Whenever, EMD / Tender fees is sought, bidders need to pay the tender fee and EMD separately on-line through RTGS.
4. A standard BoQ format has been provided with the tender document to be filled by all the bidders.

Bidders are requested to note that they should necessarily submit their price bids in the format provided and no other format is acceptable. Bidders are required to download the BoQ file, open it and complete the white coloured (unprotected) cells with their respective financial quotes and other details (such as name of the bidder). No other cells should be changed. Once the details have been completed, the bidder should save it and submit it online, without changing the filename. If the BoQ file is found to be modified by the bidder, the bid will be rejected.

5. The server time (which is displayed on the bidders’ dashboard) will be considered as the standard time for referencing the deadlines for submission of the bids by the bidders, opening of bids etc. The bidders should follow this time during bid submission.
6. All the documents being submitted by the bidders would be encrypted using PKI encryption techniques to ensure the secrecy of the data. The data entered cannot be viewed by unauthorized persons until the time of bid opening. The confidentiality of the bids is maintained using the secured Socket Layer 128 bit encryption technology. Data storage encryption of sensitive fields is done.
7. The uploaded tender documents become readable only after the tender opening by the authorized bid openers.
8. Upon the successful and timely submission of bids, the portal will give a successful bid submission message & a bid summary will be displayed with the bid no. and the date & time of submission of the bid with all other relevant details.
9. Kindly add scanned PDF of all relevant documents in a single PDF file of compliance sheet.

5. Assistance to Bidders

1. Any queries relating to the tender document and the terms and conditions contained therein should be addressed to the Tender Inviting Authority for a tender or the relevant contact person indicated in the tender.
2. Any queries relating to the process of online bid submission or queries relating to CPP Portal in general may be directed to the 24x7 CPP Portal Helpdesk.

6. General Instructions to the Bidders

1. The tenders will be received online through portal <http://eprocure.gov.in/eprocure/app>. In the Technical Bids, the bidders are required to upload all the documents in **.pdf format**.
2. Possession of a Valid Class II/III Digital Signature Certificate (DSC) in the form of smart card/e-token in the company's name is a prerequisite for registration and participating in the bid submission activities through <https://eprocure.gov.in/eprocure/app>. Digital Signature Certificates can be obtained from the authorized certifying agencies, details of which are available in the web site <https://eprocure.gov.in/eprocure/app> under the link "Information about DSC".
3. Tenderer are advised to follow the instructions provided in the 'Instructions to the Tenderer for the e-submission of the bids online through the Central Public Procurement Portal for e Procurement at <https://eprocure.gov.in/eprocure/app>.

SECTION 2: INSTRUCTIONS TO BIDDERS

A. Introduction

1. Scope of Work

TENDER DOCUMENT FOR SUPPLY, INSTALLATION, INTEGRATION AND COMMISSIONING OF EXTENSION OF IIT (BHU) LOCAL AREA NETWORK (WIRED AND WI-FI) IN ADDITIONAL LOCATIONS

2. Cost of Bidding

The Bidder shall bear all costs associated with the preparation and submission of its bid, and "the Purchaser", will in no case be responsible or liable for these costs, regardless of the conduct or outcome of the bidding process.

B. The Bidding Documents

3. Tender Processing Fees

The Tender processing fees of Rs. 11,800/- (Non-refundable and Inclusive of GST) should be submitted ONLINE as per the details mentioned above. Further, the proof of payment must be uploaded with Technical Bid. The exemption will be applicable as per Govt. of India norms.

4. Content of Bidding Documents

4.1 The goods required, bidding procedures and contract terms are prescribed in the bidding documents. In addition to Invitation of Bids, the bidding documents include:

- (a) Instructions for Online Bid Submission
- (b) Instruction to Bidders (ITB);
- (c) General Conditions of Contract (GCC);

(d) Special Conditions of Contract (SCC)

(d) Schedule of requirements;

(e) Tender form (technical bid).

(f) Tender form (price bid)

4.2 The Bidder is expected to examine all instructions, forms, terms, and specifications in the bidding documents. Failure to furnish all information required by the bidding documents or submission of a bid not substantially responsive to the bidding documents in every respect will be at the Bidder's risk and may result in rejection of its bid.

5. Amendment of Bidding Documents

5.1 At any time prior to the deadline for submission of bids, the Purchaser may, for any reason, whether at its own initiative or in response to a clarification requested by a prospective bidder, modify the bidding documents by amendment.

5.2 All prospective bidders who have received the bidding documents will be notified of the amendment in writing, which will be binding on them.

5.3 In order to allow prospective bidders reasonable time within which to take the amendment into account in preparing their bids, the Purchaser, at its discretion, may extend the deadline for the submission of bids.

C. Preparation of Bids

6. Language of Bid

The bid prepared by the Bidder, as well as all correspondence and documents relating to the bid exchanged by the Bidder and the Purchaser shall be written in English language.

7. Documents Comprising the Bid

7.1 Techno commercial un-priced bid and priced Bids: The bids are to be submitted in two parts i.e. Techno commercial un-priced bid and priced Bids.

(a) Techno commercial un-priced bid along with Earnest Money Deposit (submitted ONLINE in the aforementioned bank account of Institute) as shown in invitation to bids shall be submitted through CPP Portal. If the proof of payment of EMD is not received along with the technical bid, such bid will not be considered. The samples (if required) of all the items shown in the schedule of requirements of each tender should also accompany the techno commercial un-priced bid in a separate sealed envelope.

(b) Priced bid.

7.2 Techno commercial un-priced bid: The Techno commercial un-priced bid prepared by the bidder shall be provided in the following Model Response format:

Model Response format

(a) Standing of each Bidder Manufacturer/Dealer and past experience in supply of the material (certificates to be enclosed), proof of manufacturing Unit/Dealership along with all the documents required for proving the credentials regarding the fulfilment of essential pre-bid criteria.

- (b) List of other Govt. Departments, Public Sector units and Central Autonomous Bodies for which the bidder is supplying material or having the similar type of contracts and a certificate regarding the satisfactory performance of the contract (in the Annexure III format).
- (c) Copy of the audited balance sheet of the vendor for the previous financial year indicating the turnover in supply of the relevant materials/service.
- (d) Details of Permanent Account Number and latest income tax clearance certificate.
- (e) Details of GST No. along with a copy of certificate to be attached.
- (f) Submission of samples if required, for all items indicated in the schedule of requirements. The make of items proposed to be supplied should be indicated in the format of the schedule of requirements and submitted along with the techno commercial un-priced bid without indicating the pricing components.
- (g) Willingness to execute all orders which are placed to meet emergency requirement on priority basis. The Bidder shall note that standards for workmanship, material and equipment, and references to brand names designated by the Purchaser in the schedule of requirements are intended to be descriptive only and not restrictive. The Bidder may substitute alternative standards, brand names and/or catalogue numbers in his bid, provided that it demonstrates to the Purchaser's satisfaction that the substitutions ensure substantial equivalence to those designated in the Technical Specifications.

7.3 Price Bid

The price bid shall comprise the techno commercial bid along with the price component indicating the Unit prices for each and every item indicated in the schedule of requirements.

- (a) The prices quoted must be net per unit as shown in the Schedule and must include all charges for delivery at the designated location i.e. FOR IIT (BHU), Varanasi
- (b) The rate must be stated for each item separately both in words and figures. If there is a discrepancy between the price quoted in word and figures the higher price quoted will be treated as final.
- (c) Quoted prices should be firm and inclusive of taxes/duties, freight and forwarding charges, handling charges, loading and unloading charges, and insurance charges etc. However, the prices must be reflected clearly in BoQ format by mentioning basic rate, GST, Freight charges, Any other Taxes/Duties/Levies and exemptions thereon as applicable to IITs.
- (d) The prices once accepted by the Institute shall remain valid till the successful execution of the order and till supplies is fully effected and accepted or **12 months** from the date of acceptance of tender whichever is later. The Institute shall not entertain any increase in the rates during the period. However, in the event there is a reduction or increase in Government levy/duties/taxes during the period of execution of the order, the rates shall be suitably adjusted with effect from the date notifying the said reduction or increase in the Government levy/taxes/duty, if any.

8. Bid Prices

- 8.1** The Bidder shall indicate on the Schedule of requirements (BoQ), the unit prices of the goods it proposes to supply under the Contract and enclose it with the priced bid.

8.2 Prices indicated on the Price Schedule shall be entered separately in the following manner:

- (i) The prices quoted must be net per unit as shown in the schedule of requirements and must include all charges for delivery at the designated stores.
- (ii) Any Indian duties, GST and other taxes which will be payable on the goods, if this Contract is awarded;

8.3 Prices quoted by the Bidder shall be fixed during the Bidder's performance of the Contract and not subject to variation on any account.

9. Bid Currencies

Prices may be quoted, either in INR or USD.

10. Period of Validity of Bids

10.1 Bids shall remain valid for **180** days after the date of bid opening prescribed by the Purchaser. A bid valid for a shorter period shall be rejected by the Purchaser as non-responsive.

10.2 In exceptional circumstances, the Purchaser may solicit the Bidder's consent to an extension of the period of validity. The request and the responses thereto shall be made in writing. A Bidder may refuse the request without forfeiting its EMD. A Bidder granting the request will not be required nor permitted to modify the bid.

10.3 Bid evaluation will be based on the bid prices without taking into consideration the above modifications.

D. Submission of Bids

11. The tender has to be submitted ONLINE before the due date. The offers received after the due date and time will not be considered. **No manual bids will be considered.**

12. Deadline for Submission of Bids

12.1 Bids must be received by the Purchaser ONLINE not later than the time and date specified in the Invitation for Bids.

12.2 The Purchaser may, at his discretion, extend this deadline for submission of bids by amending the bid documents in which case all rights and obligations of the Purchaser and Bidders previously subject to the deadline will thereafter be subject to the deadline as extended.

13. Late/Delayed Bids

The offers received after the due date and time will not be considered.

14. Modifications and Withdrawal of Bids

14.1 The Bidder may modify or withdraw its bid after the ONLINE bid's submission, as per the provision of CPP Portal.

14.2 No bid may be modified subsequent to the deadline for submission of bids. No documents will be accepted in support of essential pre-bid criteria after the last date of submission of bids.

14.3 No bid may be withdrawn in the interval between the deadline for submission of bids and the expiry of the period of bid validity specified by the Bidder on the bid form. Withdrawal of a bid during this interval may result in the Bidder's forfeiture of its EMD.

E. Bid Opening and Evaluation of Bids

15. Opening of Techno commercial un-priced Bids

The purchaser will open all techno commercial un-priced bids in the first instance.

16. Clarification of Bids

16.1 During evaluation of the bids, the purchaser may, at its discretion, ask the Bidder for clarification of its bid. The request for clarification and the response shall be in writing and no change in price or substance of the bid shall be sought, offered or permitted.

16.2 No Bidder shall contact the purchaser on any matter relating to its bid from the time of the bid opening to the time the contract is awarded. If the Bidder wishes to bring additional information to the notice of the Institute it should be done in writing.

16.3 Any effort by a Bidder to influence the purchaser in its decisions on bid evaluation, bid comparison or contract award decisions may result in rejection of the Bidder's bid.

17. Evaluation of Techno commercial un-priced Bid

17.1 Prior to the detailed technical evaluation, the purchaser will determine the substantial responsiveness of each bid. A substantially responsive bid is one, which conforms to all the terms and conditions of the Bidding Documents without material deviations and meets all the essential pre-bid criteria. If any bidder does not meet the essential pre-bid criteria as laid down in the Instruction to Bidders, then his bid will be summarily rejected. No documents will be accepted in support of essential pre-bid criteria after the last date of submission of bids.

17.2 The purchaser will reject a bid determined as not substantially responsive.

17.3 The bidders may be called for discussion and may be allowed to modify their technical bids to suit the organization's requirement. The idea is to arrive at a threshold level of acceptability above which all the bidders shall be treated on par. Those whose technical specifications do not reach the threshold level of acceptability shall be rejected as technically unsuitable. The price bids of the bidders who finally emerge as technically acceptable shall be opened, evaluated and the contract awarded to the lowest evaluated bidder.

17.4 The bidders short-listed by the purchaser based on meeting the essential pre-bid criteria and detailed evaluation regarding satisfying the technical criteria laid down in this tender document may be called for detailed discussions with a team selected for the purpose, at a specified date, time and venue, if needed.

18. Opening of Priced Bids

18.1 The Purchaser will open the Priced Bids of only those bidders who meet the essential pre-bid criteria and whose techno commercial un-priced bids have been found to be substantially responsive.

18.2 The priced Bids of the technically qualified bidders shall be opened by the tender committee.

19. Evaluation and Comparison of priced Bids

19.1 Arithmetical errors will be rectified on the following basis: If there is a discrepancy between words and figures, whichever is the higher of the two shall be taken as bid price. If the Vendor does not accept the correction of errors, its bid will be rejected

19.2 Bidders shall state their bid price for the payment schedule outlined in the Clause 14 of General Conditions of Contract. Bids will be evaluated on the basis of this base price. Bidders are,

however, permitted to state an alternative payment schedule and indicate the reduction in bid price they wish to offer for such alternative payment schedule. The purchaser may consider the alternative payment schedule offered by the selected Bidder but it may not be binding on the purchaser.

19.3 The purchaser, at its option may ask some more bidders to match the rates of the lowest bidder for creating parallel suppliers.

19.4 The currency that shall be used for bid evaluation and comparison purposes to convert all bid prices expressed in various currencies into a single currency is: **Indian Rupees**

19.5 The source of exchange rate shall be: **Reserve Bank of India.**

19.6 The date for the exchange rate shall be: **Last day for submission of Bids.**

20. Purchasers right to accept any bid and to reject any bid or all bids

The Purchaser reserves the right to accept or reject any bid, and to annul the bidding process and reject all bids at any time prior to award of Contract, without thereby incurring any liability to the affected Bidder or bidders or any obligation to inform the affected Bidder or bidders of the grounds for the Purchaser's action.

21. Award Criteria

Subject to Clause 19, the purchaser will award the Contract to the successful Bidder whose bid has been determined to be substantially responsive and has been determined as the best evaluated bid provided further that the Bidder is determined to be qualified to perform the Contract satisfactorily.

22. Notification of Award

Prior to the expiration of the period validity, the purchaser will notify the successful Bidder in writing by letter or by fax, to be confirmed in writing by speed post or hand delivered letter, that its bid has been accepted.

23. Factors Affecting the Award of Supply

23.1 The bidder should have its own Contract support facilities. The support facilities should be fully owned and managed by the bidder.

23.2 Conformity with the Request for Bid/Tender required and conditions.

23.3 The assessment based on the response to Model Response Outline.

23.4 The assessment of the capability of the bidder to meet the terms and conditions.

23.5 The bidders must have executed similar orders, for which the bidder is quoting, as indicated in clause 1 for Govt./Semi-Govt./Autonomous Organizations.

23.6 The cost and the discount offered, if any.

24. Fall clause

24.1 The price quoted by the supplier should not be higher than the maximum retail price, if any, for the stores and the same shall not be higher than the price usually charged by the supplier for stores of the same nature, class or description to any other purchaser.

24.2 The price charged for the stores supplied under the contract by the supplier shall in no event exceed the lowest price at which the supplier sells the stores of identical description to any other person during the period till performance of all supply orders placed during the currency of the contract is completed. If at any time during the period the supplier reduces the sale price

of such stores or sells such stores to any other person including his dealers at a price lower than the price chargeable under the contract, he shall forthwith notify such reduction or sale to the purchaser and the price payable under the contract for these items of stores supplied after the date of coming into force of such reduction or sale shall stand correspondingly reduced.

24.3 If it is discovered that the supplier has contravened the above conditions, then without prejudice to any other action which might be taken against him, it shall be lawful for the purchaser to (a) revise the price at any stage so as to bring it in conformity with sub-clause(i) above, or (b) to terminate the contract and purchase the items of stores at the risk and cost of the supplier and in that event the provisions of Clause 28 of General Conditions of Contract shall, as far as possible, be applicable or recover the loss.

SECTION 3 : GENERAL CONDITION OF CONTRACTS

1. Definitions

In this Contract, the following terms shall be interpreted as indicated:

- (a) "The order" means the agreement entered into between the Purchaser and the Supplier including all the attachments and appendices and all documents incorporated as per notification of award.
- (b) "The Contract Price" means the price payable to the Supplier under the Contract for the full and proper performance of its contractual obligations;
- (c) "The Goods" means all the items, which the Supplier is required to supply to the Purchaser under the Contract;
- (d) "Services" means services ancillary to the supply of the Goods, such as transportation and insurance, and any other incidental services training and other obligations of the Supplier covered under the Contract;
- (e) "GCC" means the General Conditions of Contract contained in this section.
- (f) "The Purchaser" means the organization purchasing the Goods i.e. IIT (BHU), VARANASI.
- (g) "The Purchaser's country" is India.
- (h) "The Supplier" means the individual or firm supplying the Goods and Services under this Contract.
- (i) "Day" means calendar day.

2. Application

These General Conditions shall apply to the extent that they are not superseded by provisions in other parts of the Contract.

3. Standards

The Goods supplied under this Contract shall conform to the standards mentioned in the Technical Specifications, and, when no applicable standard is mentioned, to the authoritative standard appropriate to the Goods' country of origin and such standards shall be the latest issued by the concerned Institution.

4. Use of Contract Documents and Information

- 4.1** The Supplier shall not, without the Purchaser's prior written consent, disclose the Contract, or any provision thereof, or any specification, plan, drawing, pattern, sample or information furnished by or on behalf of the Purchaser in connection therewith, to any person other than a person employed by the Supplier in performance of the Contract. Disclosure to any such employed person shall be made in confidence and shall extend only so far as may be necessary for purposes of such performance.
- 4.2** The Supplier shall not, without the Purchaser's prior written consent, make use of any document or information except for purposes of performing the Contract.
- 4.3** Any document, other than the Contract itself, shall remain the property of the Purchaser and shall be returned (in all copies) to the Purchaser on completion of the Supplier's performance under the Contract if so required by the Purchaser.

5. Patent Rights

The Supplier shall indemnify the Purchaser against all third-party claims of infringement of patent, trademark or industrial design rights arising from use of the Goods or any part thereof in India.

6. Submission of the bids.

- 6.1** All bids complete in all respect must be submitted online on or before the Bid Closing date and time as mentioned on Critical Data Sheet. Tenders received without earnest money etc. shall be rejected.
- 6.2** Tender documents are available on IIT (BHU) website: www.iitbhu.ac.in/ or from Central Public Procurement Portal (CPPP) <https://eprocure.gov.in/eprocure/app>.
- 6.3** Interested bidders may submit their bid through Central Public Procurement Portal (CPPP) <https://eprocure.gov.in/eprocure/app>.

7. Inspections and Tests

- 7.1** The Purchaser or its representative shall have the right to inspect and/or to test the Goods to confirm their conformity to the Contract specifications at no extra cost to the Purchaser.
- 7.2** The inspections and tests may be conducted on the premises of the Supplier or its subcontractor(s), at point of delivery and/or at the Goods final destination. If conducted on the premises of the Supplier or its subcontractor(s), all reasonable facilities and assistance, including access to drawings and production data shall be furnished to the inspectors at no charge to the Purchaser.
- 7.3** Should any inspected or tested Goods fail to conform to the specifications, the Purchaser may reject the goods and the Supplier shall either replace the rejected Goods or make alterations necessary to meet specification requirements free of cost to the Purchaser.
- 7.4** The Purchaser's right to inspect, test and, where necessary, reject the Goods after the Goods' arrival at Project Site shall in no way be limited or waived by reason of the Goods having previously been inspected, tested and passed by the Purchaser or its representative prior to the Goods shipment.
- 7.5** Nothing in GCC Clause 7 shall in any way release the Supplier from any warranty or other obligations under this Contract.

8. Consequences of rejection

If in the event the stores are rejected by the purchaser at the destination and the supplier fails to make satisfactory supplies within the stipulated period of delivery, the purchaser will be at liberty to:

- (a) Allow the supplier to resubmit the stores in replacement of those rejected, within a specified time without any extra cost to the purchaser or
- (b) Reject the material, which shall be final and binding on the contractor.
- (c) Procure the rejected materials of comparable quality from the open market/Govt. stores and the supplier shall be liable to pay the difference in price over the RC prices or get the amount adjusted from the outstanding bills of the supplier, if any or EMD.

9. Packing

9.1 The Supplier shall provide such packing of the Goods as is required to prevent their damage or deterioration during transit to their final destination as indicated in the Contract. The packing shall be sufficient to withstand, without limitation, rough handling during transit and exposure to extreme temperatures, salt and precipitation during transit and open storage. Packing case size and weights shall take into consideration, where appropriate, the remoteness of the Goods' final destination and the absence of heavy handling facilities at all points in transit.

9.2 The packing, marking and documentation within and outside the packages shall comply strictly with such special requirements as shall be provided for in the Contract including additional requirements, in any subsequent instructions ordered by the Purchaser.

10. Delivery and Documents

10.1 The Supplier shall make delivery of the Goods within **30 days** from the placement of purchase order in pursuance of the notification of award. The purchase order would be placed after assessing the requirements on quarterly basis. However, the supplier shall also arrange to execute all orders on priority basis which would be placed to meet any emergent requirements.

10.2 In case the purchaser decides to conclude parallel rate contracts, then the requirements would be split on different firms on equitable basis as per the discretion of the purchaser.

10.3 The delivery of Stores shall be affected at the premises of the Institute free of all delivery charges and within the stipulated time and as may be elucidated in the confirmed order, accompanied by a delivery challan. No extension of time for delivery of Stores shall normally be accorded.

The supplier shall mail the following documents to the purchaser with a copy to the insurance company:

1. 3 Copies of the Supplier invoice showing contract number, goods' description, quantity unit price, total amount;
2. Installation Certificate
3. Insurance Certificate if applicable;
4. Manufacturer's/Supplier's warranty certificate;
5. Inspection Certificate issued by the nominated inspection agency, if any
6. Supplier's factory inspection report; and
7. Certificate of Origin (if possible by the beneficiary);

8. The above documents should be received by the Purchaser before arrival of the Goods (except where the Goods have been delivered directly to the Consignee with all documents) and, if not received, the Supplier will be responsible for any consequent expenses.

Time and date of delivery – the essence of the contract: The time for and the date of delivery of the stores stipulated shall be deemed to be of the essence of the contract and delivery must be completed not later than the date(s) specified.

11. Insurance

The Goods supplied under the Contract shall be fully insured in Indian Rupees against loss or damage incidental to manufacture or acquisition, transportation, storage and delivery. The insurance shall be obtained by the suppliers in an amount equal to 110% of the value of the goods from “warehouse to warehouse” (final destinations) on “all risks” basis including war risks and strikes.

12. Transportation

Where the Supplier is required under the Contract to transport the Goods within India defined as Project site, transport to such place of destination in India including insurance, as shall be specified in the Contract, shall be arranged by the Supplier, and the related cost shall be included in the contract Price.

13. Warranty

13.1 The Supplier warrants that the Goods supplied under this Contract are new, unused, of the most recent or current models and that they incorporate all recent improvements in design and materials unless provided otherwise in the Contract. The Supplier further warrants that all Goods supplied under this Contract shall have no defect arising from design, materials or workmanship or from any act or omission of the Supplier that may develop under normal use of the supplied Goods in the conditions prevailing in India.

13.2 This warranty shall remain valid for at least **36 months** (or as specified) after the Goods or any portion thereof as the case may be, have been delivered to and accepted at the final destination indicated in the Contract, unless specified otherwise.

13.3 The Purchaser shall promptly notify the Supplier in writing of any claims arising under this warranty.

13.4 Upon receipt of such notice, the Supplier shall with all reasonable speed, repair or replace the defective Goods or parts thereof, without any extra cost to the Purchaser.

13.5 If the Supplier, having been notified, fails to remedy the defect(s) within a reasonable period, the Purchaser may proceed to take such remedial action as may be necessary, at the Supplier's risk and expense and without prejudice to any other rights which the Purchaser may have against the Supplier under the Contract.

14. Payment

14.1 The Purchaser will release all due payments to the supplier as per the following terms:

- a) 70% of Contract price including duties and taxes against **actual/ complete supply** of materials within 30 days from the date of receipt and satisfactory report of verification of the materials, so supplied, at the purchaser's premise. Next 10% of contract price shall be released after satisfactory installation.
- b) Final 20% of payment shall be released **ONLY** after Verification and Acceptance of the LAN implementation, as ordered) and submission of Performance Bank Guarantee (PBG) equivalent to 10% of contract price in the specified format.

14.2 The Supplier's request(s) for payment shall be made to the Purchaser in writing, accompanied by an invoice describing, as appropriate, the Goods delivered and the Services performed, and by documents, submitted pursuant to GCC Clause 10, and upon fulfilment of other obligations stipulated in the contract.

15. Prices

Prices charged by the Supplier for Goods delivered and Services performed under the Contract shall not vary from the prices quoted by the Supplier in his bid. The bidder must mention the applicable taxes/duty and exemptions thereon, if any, as per the Government of India norms. The Institute will provide requisite certificate, if any, required by the bidder as per the applicable Govt. of India norms.

Change Orders

16.1 The Purchaser may at any time, by written order given to the Supplier, make changes within the general scope of the Contract in any one or more of the following:

- (a) Drawings, designs, or specifications, where Goods to be furnished under the Contract are to be specifically manufactured for the Purchaser;
- (b) The method of shipping or packing;
- (c) The place of delivery; and/or
- (d) The services to be provided by the Supplier.

16.2 If any such change causes an increase or decrease in the cost of, or the time required for, the Supplier's performance of any provisions under the Contract, an equitable adjustment shall be made in the Contract Price or delivery schedule, or both, and the Contract shall accordingly be amended. Any claims by the Supplier for adjustment under this clause must be asserted within thirty (30) days from the date of the Supplier's receipt of the Purchaser's change order.

17. Contract Amendments

Subject to GCC Clause 16, no variation in or modification of the terms of the Contract shall be made except by written amendment signed by the parties.

18. Assignment

The Supplier shall not assign, in whole or in part, its obligations to perform under the Contract, except with the Purchaser's prior written consent.

19. Subcontracts

The Supplier shall notify the Purchaser in writing of all subcontracts awarded under this Contract if not already specified in the bid. Such notification, in his original bid or later, shall not relieve the Supplier from any liability or obligation under the Contract.

20. Delays in the Supplier's Performance

20.1 Delivery of the Goods and performance of the Services shall be made by the Supplier in accordance with the time schedule specified by the Purchaser as per GCC clause 10.

20.2 If at any time during performance of the Contract, the Supplier or its sub-contractor(s) should encounter conditions impeding timely delivery of the Goods and performance of Services, the Supplier shall promptly notify the Purchaser in writing of the fact of the delay, its likely duration and its cause(s). As soon as practicable after receipt of the Supplier's notice, the Purchaser shall evaluate the situation and may, at its discretion, extend the Supplier's time for performance with or without liquidated damages, in which case the extension shall be ratified by the parties by amendment of the Contract.

20.3 Except as provided under GCC Clause 23, a delay by the Supplier in the performance of its delivery obligations shall render the Supplier liable to the imposition of penalty pursuant to GCC Clause 21, unless an extension of time is agreed upon pursuant to GCC Clause 20.2 without the application of liquidated damages.

21. Penalty

Subject to GCC Clause 23, if the Supplier fails to deliver any or all of the Goods or to perform the Services within the period(s) specified in the Contract, the Purchaser shall, without prejudice to its other remedies under the Contract, deduct from the Contract Price, as penalty, a sum equivalent to 1% per week and the maximum deduction is 10% of the contract price of the delivered price of the delayed Goods or unperformed Services for each week or part thereof of delay until actual delivery or performance. Once the maximum is reached, the Purchaser may consider termination of the Contract pursuant to GCC Clause 22.

22. Termination for Default

22.1 The Purchaser may, without prejudice to any other remedy for breach of contract, by written notice of default sent to the Supplier, terminate the Contract in whole or part:

- (a) If the Supplier fails to deliver any or all of the Goods within the period(s) specified in the purchase order, or within any extension thereof granted by the Purchaser pursuant to GCC Clause 20; or
- (b) If the Supplier fails to perform any other obligation(s) under the Contract.
- (c) If the Supplier, in the judgment of the Purchaser has engaged in corrupt or fraudulent practices in competing for or in executing the Contract.

‘For the purpose of this Clause:

“Corrupt practice” means the offering, giving, receiving or soliciting of anything of value to influence the action of a public official in the procurement process or in contract execution.

“Fraudulent practice: a misrepresentation of facts in order to influence a procurement process or the execution of a contract to the detriment of the Borrower, and includes collusive practice among Bidders (prior to or after bid submission) designed to establish bid prices at artificial non-competitive levels and to deprive the Borrower of the benefits of free and open competition;”

22.2 In the event the Purchaser terminates the Contract in whole or in part, pursuant to GCC Clause 22.1, the Purchaser may procure, upon such terms and in such manner as it deems appropriate, Goods or Services similar to those undelivered, and the Supplier shall be liable to the Purchaser for any excess costs for such similar Goods or Services. However, the Supplier shall continue the performance of the Contract to the extent not terminated.

23. Force Majeure

23.1 Notwithstanding the provisions of GCC Clauses 20 & 21, the Supplier shall not be liable for imposition of liquidated damages or termination for default, if and to the extent that, its delay in performance or other failure to perform its obligations under the Contract is the result of an event of Force Majeure.

23.2 For purposes of this Clause, "Force Majeure" means an event beyond the control of the Supplier and not involving the Supplier's fault or negligence and not foreseeable. Such events may include, but are not limited to, acts of the Purchaser either in its sovereign or contractual capacity, wars or revolutions, fires, floods, epidemics, quarantine restrictions and freight embargoes.

23.3 If a Force Majeure situation arises, the Supplier shall promptly notify the Purchaser in writing of such conditions and the cause thereof. Unless otherwise directed by the Purchaser in writing, the Supplier shall continue to perform its obligations under the Contract as far as is

reasonably practical, and shall seek all reasonable alternative means for performance not prevented by the Force Majeure event.

24. Termination for Insolvency

The Purchaser may at any time terminate the Contract by giving written notice to the Supplier, if the Supplier becomes bankrupt or otherwise insolvent. In this event, termination will be without Compensation to the Supplier provided that such termination will not prejudice or affect any right of action or remedy, which has accrued or will accrue thereafter to the Purchaser.

25. Termination for Convenience

25.1 The Purchaser, by written notice sent to the Supplier, may terminate the Contract, in whole or in part, at any time for its convenience. The notice of termination shall specify that termination is for the Purchaser's convenience, the extent to which performance of the Supplier under the Contract is terminated, and the date upon which such termination becomes effective.

25.2 The Goods that are complete and ready for shipment within 30 days after the Supplier's receipt of notice of termination shall be accepted by the Purchaser at the Contract terms and prices.

26. Resolution of Disputes

26.1 The Purchaser and the supplier shall make every effort to resolve amicably by direct informal negotiation any disagreement or dispute arising between them under or in connection with the Contract.

26.2 If, after thirty (30) days from the commencement of such informal negotiations, the Purchaser and the Supplier have been unable to resolve amicably a Contract dispute, either party may require that the dispute be referred for resolution to the formal mechanisms as specified below. These mechanisms may include, but are not limited to, conciliation mediated by a third party, adjudication in an agreed national or international forum, and national or international arbitration.

26.3 In case of Dispute or difference arising between the Purchaser and a supplier relating to any matter arising out of or connected with this agreement, such disputes or difference shall be settled in accordance with the Arbitration and Conciliation Act, 1996 as amended from time to time.

27. Governing Language

The contract shall be written in English language. Subject to GCC Clause 28, English language version of the Contract shall govern its interpretation. All correspondence and other documents pertaining to the Contract which are exchanged by the parties shall be written in the same language.

28. Applicable Law

28.1 The contract shall be governed by the Law of Contract for the time being in force.

28.2 Irrespective of the place of delivery, the place of performance or place of payment under the contract, the contract shall be deemed to have been made at the place from which the acceptance of tender has been issued.

28.3 Jurisdiction of Courts: The courts of the place from where the acceptance of tender has been issued shall alone have jurisdiction to decide any dispute arising out of or in respect of this contract.

28.4 One month notice will be given by either party for termination of Contract during the tenure of Contract for breach of Clause or otherwise.

29. Taxes and Duties

Suppliers shall be entirely responsible for all taxes, duties, license fees, road permits, etc., incurred until delivery of the contracted Goods to the Purchaser.

1. GST at concessional rate will be applicable as per GST Notification No. 45/2017- CENTRAL TAX (RATE) & 47/2017- INTEGRATED TAX (RATE) Dated 14-11-2017, @ 5%.
2. **The Institute is exempted from payment of IGST on Imports as per GST Notification No. 43/2017- Customs.**

30. Performance Security:

- (i) Successful bidder have to furnish **10%** of the order value as a performance security in the shape of Fixed Deposit Receipt / Bank Guarantee in favour of the Registrar, Indian Institute of Technology (BHU) valid for a period of 60 days beyond the end of all warranty period / obligations. Fixed Deposit Receipt / Bank Guarantee should be issued from a schedule bank in India.
- (ii) Earnest Money Deposit will be refunded to the successful bidder on receipt of Performance Security.

31. Supplier Integrity

The Supplier is responsible for and obliged to conduct all contracted activities in accordance with the Contract using state of the art methods and economic principles and exercising all means available to achieve the performance specified in the contract.

The Institute Reserves The Right To:

- i. Increase or decrease the quantity of the item(s) as per requirement.
 - ii. Reject the quotation in absence of not furnishing the documentary evidence in respect of Trade Tax Registration (G.S.T), Income Tax and Trade Tax clearance certificates together with the performance of supplies in various branches/institutions.
 - iii. Reject the quotation in the event of non-furnishing the authentic documentary evidence in respect of Testing reports / Performance report of the concerned Govt. Organization / Institutions about the products being manufactured and marketed. The performance test of the product can be conducted at Institute level also for which charge will have to be borne by the suppliers.
 - iv. Reject the supplies already made, if not found up to the mark. Thorough checking may be adopted to test the correctness of the supply. In such an event further action may call to conform or discard the supply.
 - v. To reject any addition/alteration in respect of local dealerships intimated by the Principals after consideration of the case by the committee appointed by the Institute for the purpose.
 - vi. Cancel this Tender at any point of time without assigning any reason thereof.
 - vii. The Institute also reserves the right to reject the bid of any participated bidder
 - viii. The Purchaser may, without prejudice to any other remedy for breach of contract, by written notice of default sent to the Supplier, terminate the Contract in whole or part:
 - (a) If the Supplier fails to deliver any or all of the Goods within the period(s) specified in the purchase order, or within any extension thereof granted by the Purchaser.
 - (b) If the Supplier fails to perform any other obligation(s) under the Contract.
 - (c) If the Supplier, in the judgment of the Purchaser has engaged in corrupt or fraudulent practices in competing for or in executing the Contract.
- ‘For the purpose of this Clause:

“Corrupt practice” means the offering, giving, receiving or soliciting of anything of value to influence the action of a public official in the procurement process or in contract execution.

“Fraudulent practice: a misrepresentation of facts in order to influence a procurement process or the execution of a contract to the detriment of the Borrower, and includes collusive practice among Bidders (prior to or after bid submission) designed to establish bid prices at artificial non-competitive levels and to deprive the Borrower of the benefits of free and open competition;”

To reject any or all the offers without assigning any reasons thereof.

All disputes are subject to “*Varanasi Jurisdiction*” only.

The decisions of the Institute in all respect shall be final and binding on all. Kindly note that we attach great significance to the list of the organizations of repute where a firm is on rate contract, therefore please enclose certified photocopies of the rate contract.

Please ensure that your offer is complete in all respect as no further clarifications shall be sought from you and reaches us within the last date mentioned above. **The Institute shall not be responsible for any delay etc.**

Please mention our reference number and due date on the sealed envelope, otherwise your quotation may not be entertained.

A checklist (list documents to be attached) with proper signature, seal and date should be enclosed with tender document for verification; otherwise the proposal will not be entertained.

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*Indian Institute of Technology,
(Banaras Hindu University)*

NOTE: 1- *While arranging the Tender Documents, check list should be placed on TOP.*

SECTION 4 : SPECIAL CONDITIONS OF CONTRACT

1. Essential Pre Bid Criteria

Minimum Qualification (Essential Pre-Bid Eligibility criteria for OEM and System Integrators) for Eligible Bidders

A. Essential Pre Bid Criteria for Eligible Bidder (System Integrator)

- 1.1. This Invitation for Bids is open to all the authorized System Integrator to quote in response to this NIT. Currently valid Letter of Authorization from original equipment manufacturer (OEM) should be enclosed in case of authorized dealer participating in the Tender. The Letter of authorization shall remain valid during execution of supply and installation.
- 1.2. The bidder should have minimum 5 years of experience for supply, installation, integration, commissioning and management of LAN Project in one of the IITs or equivalent educational institutions/ Universities/Govt. organization (Certified copies of Successful Work Completion Certificates on the letter head of concerned Institution clearly stating the nature of work to be submitted as proof.)
- 1.3. Certified Financial Statement of Bidder from a CA such as Balance Sheet and Profit & Loss account of last three financial years clearly indicating the annual turnover regarding the supply and installation of similar type of items. The annual financial turnover of bidder must not be less than 4 crore during Last 3 financial years.
- 1.4. The bidder should preferably be ISO 9001:2015 certified. (Certified copies of currently valid certificates to be submitted as proof)
- 1.5. The bidder should have valid authorization certificate for this specific Tender from OEMs of both active and passive components of the LAN.
- 1.6. The bidder must have executed a single order of 1000 nodes or two orders of 500 nodes of the quoted Active (& Passive, as necessary) product of OEM, in last five years in one of the IITs or equivalent Educational Institution/University/Govt. Organization (Certified copies of successful work execution certificate clearly stating the no. of nodes in a single order to be submitted as proof).
- 1.7. All passive network components quoted by the bidder should be from a single OEM only. The OEM of passive components should provide UL/ETL certification for the full channel link. The Bidder should submit all the required standard reports and certificates of the passive materials failing which the bid will be disqualified. The OEM of passive component is required to ensure the supply of items, spares and parts for minimum 25 years from the date of commissioning the LAN. (Proper Certificate from OEM to be attached).
- 1.8. A notarized affidavit by the bidder that it has never been black-listed must be uploaded along with the technical Bid under cover 1, failing which the Bid shall be rejected. The original shall be submitted before the award of bid by the lowest evaluated successful bidder.

B. Essential Criteria for OEMs of Active Components

- 1.9. The OEM for Active devices must be listed in Gartner Magic Quadrant / InfoTech Research / Forrester wave/ IDC Market Scape in respective latest reports. (Listing in any of the three is compulsory for being eligible)
- 1.10. The OEM of the network product should have well established manufacturing plant/ Research & Development Lab in India.
- 1.11. All active network devices (Wired, Wireless) on the extended network should be fully observable using suitable Network Management System (NMS) and / or by using WLAN Controller (in-premise/ cloud), on the live network
- 1.12. The OEM should have registered office in India for minimum of 05 years..
- 1.13. The OEM of active network devices to be quoted by the bidder should have local Technical Assistance Centre (TAC) support in India through a toll free number and Returned Materials Authorization (RMA) depot in India.

- 1.14. The OEM of active network devices to be quoted by the bidder should be present in the country from at least past 05 years.
- 1.15. The OEM whose active components are being quoted by the bidder should not have been acquired and should have posted profit in last three years.
- 1.16. All products being quoted should be available as on date with the OEM and should be publicly referenceable.
- 1.17. The OEM of passive network components to be quoted by the bidder should be present in the country from at least past 03 years. (The bidder should submit a certificate to this effect)
- 1.18. All material to be procured by the bidder should be from an OEM, which has not been acquired/ or likely to be acquired by any other business entities during the period of last 5 years till the last date of bid submission. This is to ensure dependable and continuous support for the next 5 years as per warranty requirements and lifecycle of the network.
- 1.19. An undertaking from the OEM is required stating that they would facilitate the bidder on a regular basis with technology/product updates and extend all support for the warranty in confirmation with this bid for the quoted items. In case the OEM withdraw its authorization from bidder, the above service will be provide by the OEM.

Essential Pre-Bid Eligibility Criteria for Passive OEM:

- 1.20. All passive network components quoted by the bidder should be from a single OEM only.
- 1.21. The OEM of passive components should provide UL/ETL certification for the full copper channel link (UL/ETL 4 connector test report) with at least 5 dB NEXT headroom also the individual copper components and fiber cable should be UL/ETL listed.
- 1.22. OEM of passive components should support copper channel for 6 connections with minimum 3dB NEXT headroom (UL/ETL report need to be submitted).
- 1.23. All the fiber cable should be band insensitive and single mode fiber cable should be band insensitive with zero/ low water peak construction.
- 1.24. All passive components should be RoHS complied. Declaration of ROHS compliant should clearly be mentioned on data sheets of each Passive Components.
- 1.25. The Cat 6 Cable should be complied with IEC 60332-3-22 features for environment safety (UL/ETL/ABS report need to be submitted).

IMPORTANT NOTE:

1. Non-compliance of tender terms, non-uploading of required documents, lack of clarity of the specifications, contradiction between bidder specifications and supporting literature etc. may lead to rejection of the bid.
2. In the tender, either the Indian agent on behalf of the Principal/OEM or Principal/OEM itself can bid but both cannot bid simultaneously for the same item/product in the same tender.
3. If an agent submits bid on behalf of the Principal/OEM, the same agent shall not submit a bid on behalf of another Principal/OEM in the same tender for the same item/product.

All documents in support of above essential pre-bid criteria shall be scanned and uploaded under cover 1

NOTE: THE BID OF THOSE BIDDERS WHO FAILS TO COMPLY THE ABOVE ESSENTIAL CRITERIA WILL NOT BE CONSIDERED FOR TECHNICAL EVALUATION.

2. Documents Comprising the Bid

The tender/Bid shall be submitted online in two part, viz., Technical Bid and Commercial Bid.

I. Technical Bid

The following documents are to be scanned and uploaded as part of the Technical Bid as per the tender document:

- (a) Scanned copy of Tender Forms (Techno Commercial Un-Priced Bid), Declaration, Bidder's Information Form, and Tender Acceptance Letter;
- (b) Scanned copy of proof for submission of Tender Document Fee/ Earnest Money Deposit/Exemption Certificate, etc.;
- (c) Scanned copy of written confirmation authorizing the signatory of the Bid to commit the Bidder;
- (d) Scanned copy of quoted product brochure
- (e) Scanned copy of completely filled Annexure III with supporting documents
- (f) Scanned copy of Technical Bid and essential Pre-bid Details.
 - i. Scanned copy of documentary evidence establishing the Bidder's qualifications to perform the contract if its bid is accepted and the Bidder's eligibility to bid;
 - ii. Scanned copy of documentary evidence, that the Goods and Related Services to be supplied by the Bidder are of eligible origin and conform to the Bidding Documents, and
- (g) Scanned copy of Checklist, compliance of Essential pre-bid criteria (given in Section 5) and Technical Compliance Sheet (Annexure II) and any other document required as per the tender;

II. Commercial/Price Bid

The commercial bid comprises of :

- (i) Scanned copy of Tender Form (Price Bid)
- (ii) Scanned copy of Price Bid (Annexure IV) in .pdf format
- (iii) Price bid in the form of **BoQ.xls** and to be uploaded in .pdf & .xls format.

The Price bid format is provided as BoQ.xls along with this Tender Document at <http://eprocure.gov.in/eprocure/app>. Bidders are advised to download this BoQ.xls and quote their offer/rates in the prescribed column.

In addition to the above requirements, bids submitted by a Joint Venture, shall include a copy of the Joint Venture Agreement entered into by all members. Alternatively, a letter of intent to execute a Joint Venture Agreement in the event of a successful bid shall be signed by all members and submitted with the bid, together with a copy of the proposed Agreement, there to.

The Bidder shall furnish in the Tender Forms information on commissions and gratuities, if any, paid or to be paid to agents or any other party relating to this Bid.

3. Installation, Integration & Commissioning

The supplier is required to furnish the installation, integration and commissioning of the supplied equipment within the quoted cost and provide the performance report and stipulated time in the IIT (BHU), otherwise the penalty clause will be the same as per the supply of materials.

In case of any mis-happening /damage to equipment and supplies during the carriage of supplies from the origin of equipment to the installation site, the supplier has to replace it with new equipment/supplies immediately at his own risk. Supplier will settle his claim with the insurance company as per his convenience. IIT (BHU) will not be liable to any type of losses in any form.

4. Application Specialist

The Tenderer should mention in the Techno-Commercial bid the availability and names of Application Specialist and Service Engineers in the nearest regional office.

5. Spares

The Bidder is required to provide the availability of spares (Active Components) for ten years, if required. An undertaking for this is required from OEM and Bidder both.

6. Training of Personnel

The supplier shall be required to undertake to provide the technical training to the personnel involved in the use of the equipment at the Institute premises, immediately after completing the installation of the equipment for a minimum period of one week at the supplier's cost.

7. User List

The bidder must provide the list of users, where they have deployed/provided similar nature of equipment/ services in last 5 years in prescribed format of Annexure III.

8. Manuals/Documents

1 set of hard copy and 1 set of soft copy in English (preferred as following).

- i. Operating manual
- ii. Servicing & Maintenance manual
- iii. Pre-installation requirements.

10. Services

Vendor must submit Factory Acceptance Test procedure supported with relevant printed literature and certificates.

11. The Tender document should also indicate what kind of service/maintenance is required for the system. Whether this service has to be carried out by a company engineer or it can be carried by trained service personnel within India. The frequency of visit and the charges should be mentioned.
12. The Tender should be enclosed with proper certifications like **Authorization Certificate and Proprietary Certificate** in case of Proprietary items.
13. Pre-installation site preparation/inspection requirements to be indicated and specified along with the bid.
14. Bid should include FOR IIT(BHU), Varanasi prices. The Institute will provide requisite certificate, if any, required by the bidder as per the applicable Govt. of India norms.
15. The vendor to provide compliance statement with respect to each technical specification in the tender document duly supported by the manufacturer's literature. Any other claim will not be accepted and may lead to rejection of the bid.
16. Printed literature in support of compliance to the prescribed specifications is to be submitted.
17. Compliance report needs to be submitted as a part of the technical bid.
18. **Exemption is allowed from payment of Tender fees and EMD as per Government of India norms as amended from time to time against uploading of supporting documents including currently valid NSIC/MSME certificate (in .pdf format) alongwith Technical Bid specifically for the item(s) proposed to be procured through this Tender.**

SECTION 5 :CHECKLIST FOR BID/TENDER SUBMISSION

(The following check-list must be filled in and submitted with the bid documents)

Sl. No.	Particulars	Yes/No	Page No. in Tender doc.
1	Have you attached the techno commercial unpriced bid form duly filled in appropriately?		
2	Have you attached a copy of the last audited balance sheet of your firm		
3	Have you attached the details of the income tax clearance certificate, proof of manufacturing unit/ dealership letter/ general order suppliers and copy of GST registration certificate?		
4	Have you executed the similar nature of work in last 5 year in IITs/NITs/Govt. Office/PSU/University/Autonomous Body.		
5	Have you attached the copies of relevant work orders from Govt. Depts. / PSUs and Central Autonomous Bodies in prescribed Format?		
6	EMD: Have you submitted EMD asked for.		
7	Have you enclosed the schedule of requirement indicating the make offered without indicating the pricing components along with the techno commercial unpriced bid?		
8	Have you submitted the bids both techno commercial unpriced and priced bid separately for each tender?		
9	Have you enclosed the statement of deviations from financial terms and conditions, if any?		
10	Have you submitted the Technical Compliance Sheet?		
11	Have you attached Manufacturer's Authorization certificate for this Tender?		
12	Have you attached the Declaration on the letter pad of Bidder?		
13	Have you attached the compliance of Pre-qualification criteria?		
14	Have you attached the signed Tender acceptance letter?		
15	Have you signed and attached the priced bid form?		
16	Have you attached the schedule of requirements duly priced i.e BoQ?		

Compliance Sheet of Essential Pre Bid Criteria

Minimum Qualification (Essential Pre-Bid Eligibility criteria for OEM and System Integrators) for Eligible Bidders

B. Essential Pre Bid Criteria for Eligible Bidder (System Integrator)

S.No.	Criteria	Compliance (Y / N)	Page No. in Tender doc.
1	This Invitation for Bids is open to all the authorized System Integrator to quote in response to this NIT. Currently valid Letter of Authorization from original equipment manufacturer (OEM) should be enclosed in case of authorized dealer participating in the Tender. The Letter of authorization shall remain valid during execution of supply and installation.		
2	The bidder should have minimum 5 years of experience for supply, installation, integration, commissioning and management of LAN Project in one of the IITs or equivalent educational institutions/ Universities/Govt. organization (Certified copies of Successful Work Completion Certificates on the letter head of concerned Institution clearly stating the nature of work to be submitted as proof.)		
3	Certified Financial Statement of Bidder from a CA such as Balance Sheet and Profit & Loss account of last three financial years clearly indicating the annual turnover regarding the supply and installation of similar type of items. The annual financial turnover of bidder must not be less than 4 crore during Last 3 financial years.		
4	The bidder should preferably be ISO 9001:2015 certified. (Certified copies of currently valid certificates to be submitted as proof)		
5	The bidder should have valid authorization certificate for this specific Tender from OEMs of both active and passive components of the LAN.		
6	The bidder must have executed a single order of 1000 nodes or two orders of 500 nodes of the quoted Active (& Passive, as necessary) product of OEM, in last five years in one of the IITs or equivalent Educational Institution/University/Govt. Organization (Certified copies of successful work execution certificate clearly stating the no. of nodes in a single order to be submitted as proof).		
7	All passive network components quoted by the bidder should be from a single OEM only. The OEM of passive components should provide UL/ETL certification for the full channel link. The Bidder should submit all the required standard reports and certificates of the passive materials failing which the bid will be disqualified. The OEM of passive component is required to ensure the supply of items, spares and parts for minimum 25 years from the date of commissioning the LAN. (Proper Certificate from OEM to be attached).		
8	A notarized affidavit by the bidder that it has never been black-listed must be uploaded along with the technical Bid under cover 1, failing which the Bid shall be rejected. The original shall be submitted before the award of bid by the lowest evaluated successful bidder.		

B. Essential Criteria for OEMs of Active Components

S.No.	Criteria	Compliance (Y / N)	Page No. in Tender doc.
1	The OEM for Active devices must be listed in Gartner Magic Quadrant / InfoTech Research / Forrester wave/ IDC Market Scape in respective latest reports. (Listing in any of the three is compulsory for being eligible)		
2	The OEM of the network product should have well established manufacturing plant/ Research & Development Lab in India.		
3	All active network devices (Wired, Wireless) on the extended network should be fully observable using suitable Network Management System (NMS) and / or by using WLAN Controller (in-premise/ cloud), on the live network		
4	The OEM should have registered office in India for minimum of 05 years..		
5	The OEM of active network devices to be quoted by the bidder should have local Technical Assistance Centre (TAC) support in India through a toll free number and Returned Materials Authorization (RMA) depot in India.		
6	The OEM of active network devices to be quoted by the bidder should be present in the country from at least past 05 years.		
7	The OEM whose active components are being quoted by the bidder should not have been acquired and should have posted profit in last three years.		
8	All products being quoted should be available as on date with the OEM and should be publicly referenceable.		
9	The OEM of passive network components to be quoted by the bidder should be present in the country from at least past 03 years. (The bidder should submit a certificate to this effect)		
10	All material to be procured by the bidder should be from an OEM, which has not been acquired/ or likely to be acquired by any other business entities during the period of last 5 years till the last date of bid submission. This is to ensure dependable and continuous support for the next 5 years as per warranty requirements and lifecycle of the network.		
11	An undertaking from the OEM is required stating that they would facilitate the bidder on a regular basis with technology/product updates and extend all support for the warranty in confirmation with this bid for the quoted items. In case the OEM withdraw its authorization from bidder, the above service will be provide by the OEM.		

Essential Pre-Bid Eligibility Criteria for Passive OEM:

S.No.	Criteria	Compliance (Y / N)	Page No. in Tender doc.
1	All passive network components quoted by the bidder should be from a single OEM only.		
2	The OEM of passive components should provide UL/ETL certification for the full copper channel link (UL/ETL 4 connector test report) with at least 5 dB NEXT headroom also the individual copper components and fiber cable should be UL/ETL listed.		
3	OEM of passive components should support copper channel for 6 connections with minimum 3dB NEXT headroom (UL/ETL report need to be submitted).		
4	All the fiber cable should be band insensitive and single mode fiber cable should be band insensitive with zero/ low water peak construction.		
5	All passive components should be RoHS complied. Declaration of ROHS compliant should clearly be mentioned on data sheets of each Passive Components.		
6	The Cat 6 Cable should be complied with IEC 60332-3-22 features for environment safety (UL/ETL/ABS report need to be submitted).		

SECTION 6

DECLARATION

(On the letter head of the firm submitting the bid)

1. I, ----- Son /Daughter of Shri-----
----- Proprietor/ Partner/ CEO /MD/ Director/
Authorized Signatory of M/s. ----- am competent to sign
this declaration and execute this tender document.
2. I have carefully read and understood all the terms and conditions of the tender and hereby convey my acceptance of the same.
3. The information/ documents furnished along with the above application are true and authentic to the best of my knowledge and belief.
4. I/ we/ am are well aware of the fact that furnishing of any false information/ fabricated document would lead to rejection of my tender at any stage besides liabilities towards prosecution under appropriate law.
5. Each page of the tender document and papers submitted by my Company is authenticated, sealed and signed, and I take full responsibility for the entire documents submitted.
6. This is certified that our organization has been authorized (Copy attached) by the OEM to participate in Tender. We further certified that our organization meets all the conditions of eligibility criteria laid down in this tender document. Moreover, OEM has agreed to support on regular basis with technology / product updates and extend support for the warranty.
7. The prices quoted in the price bids are subsidized due to academic discount given to IIT (BHU), Varanasi.
8. We, further specifically certify that our organization has not been Black Listed/De Listed or put to any Holiday by any Institutional Agency/Govt. Department/Public Sector Undertaking in the last three years.

Signature of the Authorized Person

Date: -----

Full Name -----

Place: -----

Company Address with Seal

SECTION 7

TENDER FORM

(Techno commercial un-priced Bid)

(On the letter head of the firm submitting the bid)

Tender No.

To

The _____

Dear Sir,

1. I/We have examined and have no reservations to the Bidding Documents, including Addenda issued in accordance with Instructions to Bidders;
2. I/We meet the eligibility requirements and have no conflict of interest ;
3. I/We have not been suspended nor declared ineligible in India;
4. I/We offer to supply in conformity with the Bidding Documents and in accordance with the Delivery Schedules specified in the Schedule of Requirements the following Goods: *[insert a brief description of the Goods and Related Services]*;
5. I/We offer to supply the items as listed in the schedule to this tender hereto/portion thereof as you may specify in the acceptance of Tender at the price given in the said Schedule and agree to hold this offer open for a period of 90 days from the date of opening of the tender.
6. I/we shall be bound by a communication of acceptance issued by you.
7. I/We have understood the Instruction to bidders and Conditions of Contract in the form as enclosed with the invitation to the tender and have thoroughly examined the specifications quoted in the Schedule hereto and am/are fully aware of the nature of the goods required and my/our offer is to supply the goods strictly in accordance with the specifications and requirements.
8. A proof of payment of Rs.....(Rupees.....only) as Earnest Money in the aforementioned account of Registrar, IIT (BHU).
9. The following have been added to form part of this tender.
 - (a) Schedule of requirements, quoting the make only duly signed and stamped.(without indicating price)
 - (b) Income Tax clearance certificate.
 - (c) Copy of last audited balance sheet.
 - (d) Copy of Valid GST registration certificate.
 - (e) Copy of similar relevant major purchase orders valuing more than Rs. 20 lakhs executed during last Five years in any IITs/NITs/Govt. Office/PSU/University/Autonomous Body.
 - (f) Proof of manufacturing Unit, dealership certificate/general order suppliers.
 - (g) Statement of deviations from financial terms & conditions, if any.
 - (h) Any other enclosure. (Please give details)
10. We undertake to execute all orders which have been placed to meet emergent requirements on priority basis.

11. Certified that the bidder is:

(a) A sole proprietorship firm and the person signing the bid document is the sole proprietor/constituted attorney of the sole proprietor,

Or

(b) A partnership firm, and the person signing the bid document is a partner of the firm and he has authority to refer to arbitration disputes concerning the business of the partnership by virtue of the partnership agreement/by virtue of general power of attorney.

Or

(c) A company and the person signing the document is the constituted attorney.

(NOTE: Delete whatever is not applicable. All corrections/deletions should invariable be duly attested by the person authorized to sign the bid document).

12. We do hereby undertake that, until a formal notification of award, this bid, together with your written acceptance thereof shall constitute a binding contract between us.

13. If our bid is accepted, we commit to obtain a performance security in accordance with the Bidding Documents;

14. We are not participating, as a Bidder or as a subcontractor, in more than one bid in this bidding process, other than alternative bids submitted;

15. We hereby certify that we have taken steps to ensure that no person acting for us or on our behalf will engage in any type of fraud and corruption

Name of the Bidder*

Name of the person duly authorized to sign the Bid on behalf of the Bidder**

Title of the person signing the Bid

Signature of the person named above

Date signed day of

* In the case of the Bid submitted by joint venture specify the name of the Joint Venture as Bidder

** Person signing the Bid shall have the power of attorney given by the Bidder to be attached with the Bid Schedules.

Yours faithfully,

(Signature of bidder)

Dated this day of _____

Address:

Telephone No. : _____

FAX _____

E-mail _____

Company seal

TENDER FORM

(Priced Bid)

(On the letter head of the firm submitting the bid document)

To,

The _____

Ref: Tender No.....Dated:

Sir,

Having examined the bidding documents and having submitted the techno commercial unpriced bid for the same, we, the undersigned, hereby submit the priced bid for supply of goods and services as per the schedule of requirements and in conformity with the said bidding documents.

1. We hereby offer to supply the Goods/Services at the prices and rates mentioned in the enclosed schedule of requirement.
2. We do hereby undertake that, in the event of acceptance of our bid, the supply of Goods/Services shall be made as stipulated in the schedule of requirement and that we shall perform all the incidental services.
3. The prices quoted are inclusive of all charges net F.O.R IIT(BHU) Varanasi. We enclose herewith the complete Price Bid as required by you. This includes:
 - a. Price Schedule (Bill of Quantity-BOQ) in .pdf format and .xls format
 - b. Statement of deviations from financial terms and conditions, if any.
4. We agree to abide by our offer for a period of 90 days from the date fixed for opening of the bid documents and that we shall remain bound by a communication of acceptance within that time.
5. We have carefully read and understood the terms and conditions of the bid document and we do hereby undertake to supply as per these terms and conditions. The Financial Deviations are only those mentioned in the statement of deviations from financial terms and conditions.
6. We have paid, or will pay the following commissions, gratuities, or fees with respect to the bidding process or execution of the Contract: **[insert complete name of each Recipient, its full address, the reason for which each commission or gratuity was paid and the amount and currency of each such commission or gratuity]**

Name of Recipient	Address	Reason	Amount

(If none has been paid or is to be paid, indicate “none.”)

7. We understand that this bid, together with your written acceptance thereof included in your notification of award, shall constitute a binding contract between us, until a formal contract is prepared and executed; and
8. We understand that you are not bound to accept the lowest evaluated bid or any other bid that you may receive.

Certified that the bidder is:

A sole proprietorship firm and the person signing the bid document is the sole proprietor/ constituted attorney of sole proprietor,

Or

A partnership firm, and the person signing the bid document is a partner of the firm and he has authority to refer to arbitration disputes concerning the business of the partnership by virtue of the partnership agreement/by virtue of general power of attorney,

Or

A company and the person signing the bid document is the constituted attorney.

(NOTE: Delete whatever is not applicable. All corrections/deletions should invariably be duly attested by the person authorized to sign the bid document.)

We do hereby undertake that, until a formal notification of award, this bid, together with your written acceptance thereof, shall constitute a binding contract between us.

Dated this day of _____

Signature of Bidder _____

Details of enclosures _____

Full Address: _____

Telephone No. _____

Mobile No. : _____

Fax No. : _____

E-mail: _____

Company Seal

BIDDER INFORMATION FORM

[The Bidder shall fill in this Form in accordance with the instructions indicated below. No alterations to its format shall be permitted and no substitutions shall be accepted.]

Date: *[insert date (as day, month and year) of Bid Submission]*

ADVT. No.: *[insert number of bidding process]*

Alternative No.: *[insert identification No if this is a Bid for an alternative]*

Page _____ of _____ pages

1. Bidder's Name <i>[insert Bidder's legal name]</i>
2. In case of JV, legal name of each member : <i>[insert legal name of each member in JV]</i>
3. Bidder's actual or intended country of registration: <i>[insert actual or intended country of registration]</i>
4. Bidder's year of registration: <i>[insert Bidder's year of registration]</i>
5. Bidder's Address in country of registration: <i>[insert Bidder's legal address in country of registration]</i>
6. Bidder's Authorized Representative Information Name: <i>[insert Authorized Representative's name]</i> Address: <i>[insert Authorized Representative's Address]</i> Telephone/Fax numbers: <i>[insert Authorized Representative's telephone/fax numbers]</i> Email Address: <i>[insert Authorized Representative's email address]</i>
7. Attached are copies of original documents of <i>[check the box(es) of the attached original documents]</i> <input type="checkbox"/> Articles of Incorporation (or equivalent documents of constitution or association), and/or documents of registration of the legal entity named above. <input type="checkbox"/> In case of JV, letter of intent to form JV or JV agreement. <input type="checkbox"/> In case of Government-owned enterprise or institution, documents establishing: <ul style="list-style-type: none">• Legal and financial autonomy• Operation under commercial law• Establishing that the Bidder is not dependent agency of the Purchaser
2. Included are the organizational chart, a list of Board of Directors, and the beneficial ownership.

TENDER ACCEPTANCE LETTER

(To be given on Company Letter Head)

Date:

Sub: Acceptance of Terms & Conditions of Tender.

Tender Reference No._____

Name of Tender/ Work: -

Dear Sir,

1. I/We have downloaded/ obtained the tender document(s) for the above mentioned 'Tender/Work' from the web site(s) namely:

as per your advertisement, given in the above mentioned website(s).

2. I/We hereby certify that I/We have read the entire terms and conditions of the tender documents from Page No. _____ to _____ (including all documents like section(s), schedules(s) etc.), which form part of the contract agreement and I/we shall abide hereby by the terms/conditions/ clauses contained therein.
3. The corrigendum(s) issued from time to time by your department/ organisation too have also been taken into consideration, while submitting this acceptance letter.
4. I/We hereby unconditionally accept the tender conditions of above mentioned tender document(s)/ corrigendum(s) in its totality/entirety.
5. In case any provisions of this tender are found violated, then your department/organisation shall without prejudice to any other right or remedy be at liberty to reject this tender/bid including the forfeiture of the full said earnest money deposit absolutely.

Yours faithfully,

(Signature of the Bidder, with Official Seal)

FORMAT OF BANK GUARANTEE FORM

1. This guarantee should be furnished by a Nationalized Bank / scheduled Bank, authorized by RBI to issue a Bank Guarantee.
2. This bank guarantee should be furnished on stamp paper of Rs. 100/-
3. The stamp paper should have been purchased in the Name of the Bank executing the Guarantee.
4. **In the case of foreign bidder the B.G may be furnished by an international reputed bank acceptable to the PURCHASER countersigned by any Nationalized / Scheduled Bank in India authorized by Reserve Bank of India.**

DATE:

BANK GUARANTEE NO:

Ref.: _____

To

Indian Institute of Technology

(Banaras Hindu University)

Varanasi-221005

Dear Sirs,

In accordance with your 'Invitation to Bid' under your Tender No: _____ M/s:

_____ herein after called the Contractor/supplier, with the following Directors on their Board of Directors / partners of the firm.

1. _____ 2. _____
3. _____ 4. _____

Agrees for the contract/supplies:

As an irrevocable **Bank** Guarantee for an amount of **Rs.** _____ (in words and figures) valid for _____ days from _____ is required to be submitted by the Contractor/Supplier which amount is liable to be forfeited by the purchaser in the event of 1) the withdrawal or revision of the offer by the Bidder as a condition within the validity period. (2) non-acceptance of the Letter of Intent / purchase order by the bidder when issued within the validity period. (3) failure to furnish the valid contract performance guarantee by the bidder within one month from the receipt of the purchase order and (4) on the happening of any contingencies mentioned in the bid documents such as _____.

We, the _____ Bank at _____ having our Head office at _____ (Local address) Guarantee and undertake to pay immediately on first demand by IIT (BHU) the amount of _____ (in figure and

words) without any reservation., protest, demur and recourse. Any such demand made by the Purchaser shall be conclusive and binding on the Bank irrespective of any dispute or difference raised by the purchaser.

The guarantee shall be irrevocable and shall remain valid up to _____ (This date should be 6 months after execution of the order). If any further extension of this guarantee is required the same shall be extended to such required period (not exceeding one year) on receiving instruction from M/s _____ on whose behalf this guarantee is issued.

In witness whereof the Bank, through its authorized officer has set its hand and stamp on this _____ day of _____ at _____ witness _____.

WITNESS

(Signature).....

Name in (Block letters)

Designation

(Staff Code No.)

(Bank's common Seal)

Official address:

Attorney as per power of Attorney No.

Date:

FORMAT FOR PERFORMANCE BANK GUARANTEE (PBG)/ PERFORMANCE SECURITY

(To be typed on Non-judicial stamp paper of the value of Indian Rupees of One Hundred)

(TO BE ESTABLISHED THROUGH ANY OF THE NATIONALISED COMMERCIAL BANKS (WHETHER SITUATED AT VARANASI OR OUTSTATION) WITH A CLAUSE TO ENFORCE THE SAME ON THEIR LOCAL BRANCH AT VARANASI)

To,

The Registrar,
Indian Institute of Technology (BHU),
Varanasi-221005

LETTER OF GUARANTEE

WHEREAS Indian Institute of Technology (BHU), Varanasi (Buyer) has invited tender vide Tender No..... dated..... for purchase of AND WHEREAS the said tender document requires that eligible successful bidder (seller)..... wishing to supply the equipment / machinery, etc. in response thereto shall establish an irrevocable Performance Bank Guarantee in favour of “ The Registrar, Indian Institute of Technology (BHU), Varanasi” in the form of Bank Guarantee for Rs (**% of the contract value**) and the Performance Bank Guarantee shall remain valid for a period of 60 (sixty) days beyond the date of completion of all contractual obligations of the seller, including warranty obligations from the date of issue of Performance Bank Guarantee and the eligible successful bidder (the seller) shall submit the same within 30 (Thirty) days from the date of Award of Contract.

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

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

We, (name of the Bank & branch) hereby further agree that the Guarantee herein contained shall not be affected by any change in the constitution of the bidder (Seller) and/ or Indian Institute of Technology (BHU), Varanasi (Buyer). **Notwithstanding anything contained herein:**

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

Yours truly,
Signature and seal of the guarantor:
Name of Bank:
Address:
Date:

SECTION 8

ANNEXURE - I

SCHEDULE OF REQUIREMENTS

1. Technical Specifications for LAN:
As per Annexure – A
2. Work Schedule
As per Annexure – B
3. Reference BoQ
As per Annexure – C

PRICE BID

(MUST be submitted in a separate SEALED envelope Super-scribed as PRICE BID)

4. Price Bid
As per Annexure – IV

TECHNICAL COMPLIANCE STATEMENT
(To be submitted by bidder duly filled)

S.No.	Specification	Whether the instrument complies with the required specification (Yes / No / Better)	If no or better specification, then provide your comment accordingly
1.	<i>Technical Specifications for LAN (Annexure – A)</i>		
2.	<i>Work Schedule (Annexure – B)</i>		
3.	<i>Reference BoQ (Annexure – C)</i>		

The above compliance statement form is only indicative and can be modified according to requirements of the bidder.

Date :

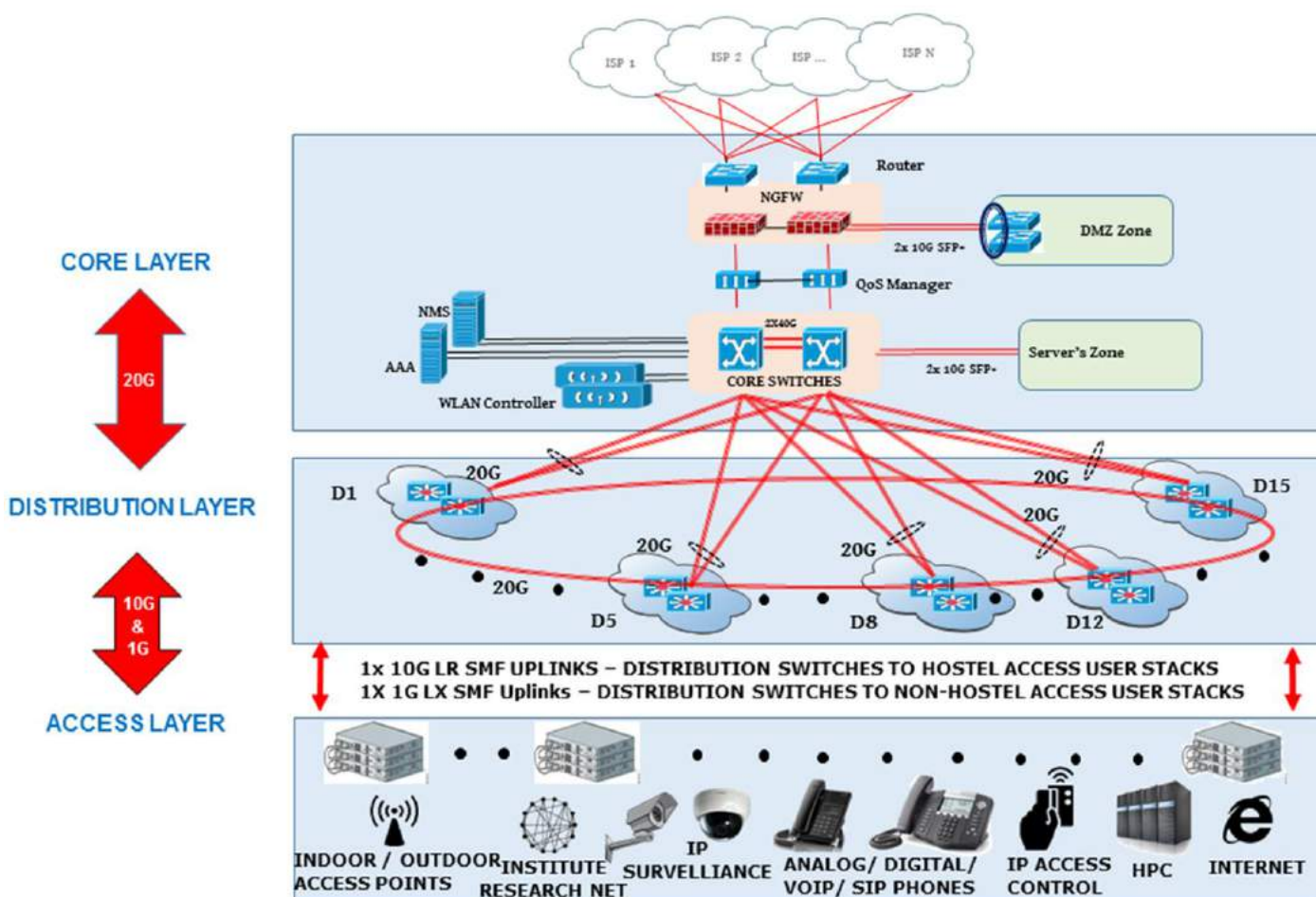
Signature of the Authorised Official with Seal

ARCHITECTURAL DETAILS OF EXISTING LAN IN THE INSTITUTE

This document consists of the architectural details of existing LAN in the Institute campus. **Through this tender, existing LAN has to be extended to new locations** within the institute campus, maintaining the same architecture and by complying same technical specifications & mandatory compliance standards, as have been desired as minimum, for the entire IIT (BHU) Local Area Network.

By all means and scope, this is binding on the bidders, to follow the design. Further, bidders may suggest optional components as add-on features along with quoting respective costs, as an additional offer, which, however shall not be the mandatory part of this tender.

Existing Network Schematic:



Mandatory General Compliance

Complete network including Active Devices MUST be able to run in full capacity under normal ambient temperature, humidity, restarts due to power failures and with non-artificial cooling, as may prevail within IIT (BHU) Campus. An explicit undertaking and statement MUST be incorporated in the proposed solution.

Broad Guidelines for Network Implementation (wherever applicable)

1. For Distribution to Access stacks, window cut OFC (with one tube, 06 core per access switch), along with 06 core unarmoured OFC up to the switch should to be used with industry grade joint enclosure.
2. There will be 01 physical LAN, implemented as per specifications under this project, exclusively dedicated for High Speed Internet Access on IIT (BHU) Campus LAN. By using remaining redundant fibre strands in respective tubes, additional passive work for creating physical LANs will be provisioned from day 1, between Core to all Access Switches for future use such as (i) Analog and IP Telephony (ii) Biometrics and Access Control (iii) Video/ IP Surveillance (iv) HPC (v) Institute Research Net (IoT/ Fog/ Mist etc.) etc.
3. Bidder MUST quote detailed bill of material along with **OEM part-codes** for each products in the technical bid.
4. Financial bid shall be opened only for successful bidders post technical bid evaluation.
5. The bidder MUST submit step-by-step schedule of work with complete details, in the technical bid.
6. During on-site implementation, the bidder MUST seek formal technical approval of the step-by-step implementation plan, from the Chairman, Institute Networking Committee, before actual execution of the work.
7. The bidder shall also provide progress report of the execution of work, as permitted under item # 9 (as above), with full details, through the designated Project Coordinator.
8. Preparation of the documentation and its informal, day-to-day verification by the official, as appointed for the said work, shall be a continuous process throughout the tenure of work implementation.
9. The solution should eventually deliver all specifications and features as desired, as and where deliverable, without any non-compliance
10. All quoted products must be available with the OEM, on the date of bidding with publicly referenceable links from their website.
11. Regarding the Wi-Fi deployment, the architecture, design & technical specifications of the offered Wi-Fi solution will be evaluated, before its acceptance by the Institute. The offered Wi-Fi System should provide at least -63dBm or better Received Signal Strength Indicator (RSSI) in one band and 70dbm or better RSSI in another band (2.4Ghz or 5Ghz) in Hostel Rooms and entire Public areas where students are expected to use Wi-Fi. There should be no Wi-Fi dark spots in the Hostel. Access Points must be capable to deliver Full HD video streams (minimum 15 Devices (with a/g/n/ac capability) should support video Streaming on single AP, simultaneously) to multiple Wi-Fi devices (20 or more devices simultaneously) without any jam/jerks in the streaming. A comprehensive technical report, in this context will be provided by the supplier, duly evaluated/ tested using various testing tools in terms of RSSI, throughput, download/upload streams etc. The system should allow for an uninterrupted user sessions in-case of controller failure and AP's should join back another WLC. The network should also allow self-registration page for guest access with secured password generation and network access.

Extension of the Existing LAN to New Locations (but not limited to)

The present proposal of the tender is to extend the existing LAN (wired and wireless, in physical and/or configuration wise, as the case may be) of IIT (BHU) to the following new locations:

1. New Teacher's flats of IIT (BHU)
2. New Girls' Hostel of IIT (BHU)
3. Any other location as the Institute may deem fit (with additional BoQ)

Bidders are strongly encouraged to do a detailed site survey for understanding the scope of work with absolute clarity. A 24 Core Fibre connectivity with the core, will be made available at the Location.

The existing network at IIT (BHU) is installed with the following Active switches, APs, Router, WLC, AAA Server (ISE), Prime (NMS Server) etc. of Cisco make and Firewall of Fortigate make, are given with their used quantities as below:

Device Name	Description	Part No.	Model No.	Quantity
Cisco Router	Cisco ASR 1001-X Router	C1-ASR1001-X/K9	Cisco ASR 1001-X Router	2
Cisco Core Switch	NEXUS-9K-PRI-CORE	C1-N9k-C9504	N9K-C9504	2
Cisco Distribution Switch	CiscoCatalyst38xx stack-able ethernet switch	C1-WS3850-12XS-S	WS-C3850-12XS-E	27
Cisco Access Switch	Cisco Catalyst WS-C2960X-48LPD-L	C1-C2960X-48LPD-L	WS-C2960X-48LPD-L	251
Cisco Access Switch	Cisco Catalyst WS-C2960X-24PD-L	C1-C2960X-24PD-L	WS-C2960X-24PD-L	95
Cisco AP Indoor	AIR-AP1852I-D-K9	AIR-AP1852I-D-K9	AIR-AP1852I-D-K9	992
Cisco AP Outdoor	AIR-AP1562I-D-K9	AIR-AP1562I-D-K9	AIR-AP1562I-D-K9	57
Cisco WLC	Cisco 8540 Wireless Controller	C1-AIR-CT8540-K9	AIR-CT8540-K9	2
Cisco ISE (AAA Server)	Identity Services Engine 2.2.0	SNS-3595-K9	SNS-3595-K9	2
Cisco Prime(NMS)	Prime Infrastructure 3.4.0	PI-UCS-APL-K9	PI-UCS-APL-K9	2
Fortigate Firewall	FortiGate 3000D	FG-3000D-USG	FortiGate 3000D	2
FortAnalyzer	FortiAnalyzer-1000E	FAZ-1000E	FortiAnalyzer-1000E	1
Dell Server	Dell PowerEdge R530	Dell PowerEdge R530	R530	2

Note: The extension of LAN to the new locations should be done using the core connectivity of the existing LAN. The LAN, so extended, to the new locations should match with the existing CAIT and basic management Policies for the Institute LAN.

TENDER SPECIFICATIONS

DISTRIBUTION SWITCH (24 Port)

S. N.	TECHNICAL SPECIFICATION
1	Should have minimum 24 x 1G SFP Ports with additional 4x10G SFP+ ports for dual uplink to Core in HA and Distribution Ring.
2	Switch should have stacking with dedicated stacking ports and 40 Gbps of stacking bandwidth additional to above mentioned data and uplink ports from Day 1.
3	Switch should have Operating Temperature of 0-40 Degree Centigrade
4	Switch access ports should be fully populated with 1G Single Mode transceiver and uplinks with 2x10G Single Mode Transceivers
5	The proposed interfaces must have non-blocking and wire-speed performance for all packet sizes for IPv4 & IPv6 traffic and should have distributed forwarding architecture.
6	Should have redundant internal Power Supply and Fans.
7	Switch should have IPv4 & IPv6 static routes, OSPF, OSPFv3, PBR and PIM-SM / DM, BGP+.
8	Should support Layer 2 protocols 802.1d, 802.1s, 802.1w and 802.3ad.
9	Switch should support minimum 8 hardware queues per port for applying various traffic prioritization through QoS.
10	Switch should support SP Queuing, minimum 2K ACL's, 4K Multicast and WRED/WTD. Network OS, 8K Unicast Routes, IPv4 and IPv6 compliant.
11	Should support Port Security and RADIUS / TACACS integration.
12	Switch should support port security, DHCP snooping, Dynamic ARP inspection, IP Source guard, BPDU Guard, Spanning tree root guard, Ipv6 RA guard.
13	Should have NetFlow/sflow to support 32K entries functionality for traffic monitoring.
14	The proposed switch should be IPv6 ready from day 1 without any additional hardware or software.
15	Should have direct OEM 24x7x365 TAC support and hardware replacement warranty for 3 Years.

48 PORTS LAYER 2 ACCESS SWITCH

S. N.	TECHNICAL SPECIFICATION
1	Should have minimum 48x 10/100/1000 BaseT RJ45 Ports plus 4x 1G BaseX SFP Ports populated with 2x1G SFP. Switch would use 1G uplinks on day 1.
3	Switch should have Operating Temperature of 0 - 40+ Degree Centigrade
6	The proposed interfaces must have non-blocking and wire-speed performance for all packet sizes for IPv4 & IPv6 traffic and should have distributed forwarding architecture.
7	Should support Layer 2 protocols IEEE 802.1D, 802.1s, 802.1w, 802.1x, 802.3ad, 802.3x, 802.1p, 802.1Q, 802.3, 802.3u, 802.3ab, 802.3z, 802.3az, 802.3af, 802.3at. should also have 802.3af, 802.3at for POE switches.
8	Switch should have IPv4 & IPv6 static routes , RIP, RIPng ,OSPF and OSPFv3 from day 1
9	Switch should have minimum 1K ACL's and 1K IPv4 and IPv6 multicast groups.
10	Switch should support minimum 8 hardware queues per port for applying various traffic prioritization through QoS. Switch should support SP Queuing and WRED/WTD
11	Should support 802.1x authentication, Port Security and RADIUS / TACACS integration.
12	Should have NetFlow / sFlow functionality for traffic monitoring.
13	Switch should support port security, DHCP snooping, Dynamic ARP inspection, IP Source guard, BPDU Guard, Spanning tree root guard and IPv6 First Hop Security.
14	The proposed switch should be IPv6 ready from Day 1 without any additional software and hardware changes.
15	Should have direct OEM 24x7x365 TAC support with software update and NBD Advanced hardware replacement warranty for 3 Years.

24 PORTS LAYER 2 ACCESS SWITCH

S. N.	TECHNICAL SPECIFICATION
1	Should have minimum 24 x 10/100/1000 BaseTPoE/PoE+ RJ45 Ports (minimum 370W) plus 4x 1G BaseX SFP+ Ports populated with 2x1G SFP. Switch would use 1G uplinks on day 1.
2	The switch should have 40 Gbps of stacking bandwidth (excluding uplink ports) proposed with stacking cable. Stacking should support upto 4 stacking members.
3	Switch should have Operating Temperature of 0 - 40+ Degree Centigrade
4	The proposed interfaces must have non-blocking and wire-speed performance for all packet sizes for IPv4 & IPv6 traffic and should have distributed forwarding architecture.
5	Should support Layer 2 protocols IEEE 802.1D, 802.1s, 802.1w, 802.1x, 802.3ad, 802.3x, 802.1p, 802.1Q, 802.3, 802.3u, 802.3ab, 802.3z, 802.3az, 802.3af, 802.3at. should also have 802.3af, 802.3at for POE switches.
6	Switch should have IPv4 & IPv6 static routes , RIP, RIPng ,OSPF and OSPFv3 from day 1
7	Switch should have minimum 1K ACL's and 1K IPv4 and IPv6 multicast groups.
8	Switch should support minimum 8 hardware queues per port for applying various traffic prioritization through QoS. Switch should support SP Queuing and WRED/WTD.
9	Should support 802.1x authentication, Port Security and RADIUS / TACACS integration.
10	Should have NetFlow / sFlow functionality for traffic monitoring.
11	Switch should support port security, DHCP snooping, Dynamic ARP inspection, IP Source guard, BPDU Guard, Spanning tree root guard.
12	The proposed switch should be IPv6 ready from Day 1 without any additional software and hardware changes.
13	The switch should have 1GB RAM and 1GB Internal Flash memory.
14	Should have direct OEM 24x7x365 TAC support with software update and NBD Advanced hardware replacement warranty for 3 Years.

INDOOR ACCESS POINTS

S.N.	TECHNICAL SPECIFICATION
1	Wall/Ceiling mounted Wi-Fi access-point suitable for indoor use with at least 1 10/100/1000Mbps Ethernet ports with one port supporting standard 802.3af/at POE+.
2	802.11ac Wave 2 AP should operate in 2.4 GHz (300 Mbps or more) and 5 GHz simultaneously and capable of minimum 1 Gbps on 5 GHz for 802.11ac clients supporting minimum 4x4 MIMO with 4 spatial streams. It must support minimum 3 concurrent MU-MIMO users.
3	Should support minimum 16x BSSID per AP. Should have Operating Temperature of 0 – 40+ Deg Centigrade
4	The access point should be capable of performing security scanning and serving clients on the same radio. It should be also capable of performing RF analysis and security scanning using same radio.
5	Must support minimum 24dbm of transmit power in both 2.4Ghz and 5Ghz radios and minimum 4dB antenna gain. AP should support 20MHz, 40MHz and 80MHz channel size.
6	AP should support band steering and load balance across bands.
7	Security mechanisms should be in place to protect the communication between the Access Point controller and the Access Points.
8	The access point should support WPA2 , WPA 3 enterprise authentication and AES/CCMP encryption.
9	AP should support 802.11k for Radios Resource management and 802.11r for fast roaming and inbuilt/external Built-in Bluetooth Low-Energy (BLE) radio to Enables location based services.
10	Implement Wi-Fi alliance standards WMM, 802.11d, 802.11h and 802.11e and should support VoWLAN
11	AP must support spectrum analysis functions
12	AP should support Minimum -90dB Receiving sensitivity. AP should support Receiver sensitivity Threshold to reduce noise reception in the AP to increase SNR and performance
13	802.11 a/b/g/n/ac wave 2 functionality certified by the Wi-Fi alliance, Should be plenum rated (UL2043), and RF transmission power should be approved by WPC.
14	Should have direct OEM 24x7x365 TAC support with software update and NBD Advanced hardware replacement warranty for 3 Years.

OUTDOOR ACCESS POINTS

S. N.	TECHNICAL SPECIFICATION
1	Wall/Ceiling/Poll mounted Wi-fi access-point suitable for outdoor use with at least 1 10/100/1000Mbps Ethernet ports supporting standard 802.3af/at POE+. Should have additional SFP port for direct fiber termination if required.
2	802.11ac AP should operate in 2.4 GHz (300 Mbps or more) and 5 GHz simultaneously and capable of minimum 1Gbps on 5 Ghz for 802.11ac clients supporting minimum 4x4 MIMO with 4 spatial streams. It must support minimum 3 concurrent MU-MIMO users.
3	Should support minimum 16x BSSID per AP. Should have Operating Temperature of -10 to +55 Deg Centigrade
4	The access point should be capable of performing security scanning and serving clients on the same radio. It should be also capable of performing RF analysis and security scanning using same radio.
5	Must support minimum 24dBm of transmit power in 2.4GHz and 28dBm transmit power in 5GHz radios and minimum 4dB antenna gain. AP should support 20MHz, 40MHz and 80MHz channel size.
6	AP should support band steering and load balance across bands.
7	Security mechanisms should be in place to protect the communication between the Access Point controller and the Access Points.
8	The access point should support WPA2 , WPA 3 enterprise authentication and AES/CCMP encryption.
9	AP should support 802.11k for Radios Resource management and 802.11r for fast roaming and inbuilt/external Built-in Bluetooth Low-Energy (BLE) radio to Enables location based services.
10	Implement Wi-Fi alliance standards WMM, 802.11d, 802.11h and 802.11e and should support VoWLAN
11	AP must support spectrum analysis functions
12	AP should support Minimum -90dB Receiving sensitivity. AP should support Receiver sensitivity Threshold to reduce noise reception in the AP to increase SNR and performance
13	802.11 a/b/g/n/ac wave 2 functionality certified by the Wi-Fi alliance, Should be IP67 rated and RF transmission power should be approved by WPC.
14	AP should support up to 100-mph sustained winds and up to 165-mph wind gusts
15	Should have direct OEM 24x7x365 TAC support with software update and NBD Advanced hardware replacement warranty for 3 Years.

WIRELESS LAN CONTROLLER (WLC)

S.No.	TECHNICAL SPECIFICATION
1	Wi-Fi coverage should be -65dBm or better in one band and at least -70dBm in another band inside Rooms and all coverage area.
2	Proposed WLC should be On-Prem/ cloud based. Cloud WLC should be hosted in India.
3	WLC should support IPv4 and IPv6 including IEEE 802.11a, 802.11b, 802.11g, 802.11d, WMM/802.11e, 802.11n, 802.11ac standards.
4	if On Premise WLC, should have minimum 2 x 10G SFP+ of uplink interfaces.
5	proposed WLC should support up to 300 Access points and up to 300 Devices in each server. It should be scalable to 500 AP's through single server or through cluster with single interface management of all WLC's. It should also support AP license migration from one WLC to another, in case of future upgradation.
6	On Premise WLC Must provide 1+1 or N+1 redundancy and The controllers shall be implemented in HA mode. Cloud based WLC should provide HA with no point of failure.
7	Wi-Fi system Must have feature for recovery without re-authentication of the client in the event of LAN and WLAN infrastructure disruption to deliver a non-stop client session
8	WLC should provide air-time fairness between these different speed clients – slower clients should not be starved by the faster clients and faster clients should not adversely affected by slower clients.
9	WLC Must support an ability to dynamically adjust channel, power settings and airtime, based on the RF environment.
11	WLC should support L2/L3 discovery for AP's.
12	Should support adhere to the strictest level of security standards, including 802.11i Wi-Fi Protected Access 2 (WPA2)/WPA, 802.1X with multiple Extensible Authentication Protocol (EAP) and 802.1x Authentication.
13	Controller should support WIDS/WIPS includes rogue AP detection and DOS attacks Detection.
14	WLC should support L2/L3/L4 Access Control and L2 Client Isolation so User cannot access each other's devices. Isolation should have option to apply on AP or SSID's
15	Controller/System should support Access Control based on Identity/Role/ Device/Time or Application.
16	Must support client roaming in L2/L3 networks and also across controllers.
17	Controller should support integrated or External AAA servers including Microsoft AD and Linux based open source AAA.

18	The Controller/System should support L7 Application/OS/Device finger printing and device type based policies.
19	The controller/System should be able to raise critical alarms by sending an email and/ or SMS.
20	Per SSID or dynamic Per user bandwidth Rate Limiting
21	Support advanced multicast features and WMM support to provide best performance on Video applications and should have
22	Controller/ System should have BYOD features and should support integrated/ and external captive portal integration.
23	System should provide Social Login's (Facebook, Google etc) and a web-based application that allows non-technical staff to create Guest accounts with validity for fixed duration like hours or days and restricted to number of devices. Password to guest should be shared over Email or SMS (Indian SMS gateway services shall be supported provided by Campus).
24	It should also provide Guest access policy based on time, bandwidth and quota (bandwidth consumption).
25	WLC should be Wi-Fi alliance certified with passpoint compliance
26	Should have direct OEM 24x7 TAC support with Software upgrade warranty for 3 Years.

Broad Guidelines* for OFC Laying in Outdoor

(* - as and where applicable, included for sake of completeness and as a part of mandatory compliance. Please DO NOT quote in the main price bid)

All Optical Fibre etc. in Outdoor and Indoor must be freshly laid, in PLB HDPE (50mm outer diameter) pipes at a minimum depth of 250 cm, leaving 30 meter coil in Core, every distribution point and aggregation point, for Optical Fibre Cable using Horizontal Directional Drilling (HDD - also called as the trench less technology or micro-tunnelling) and laying of Optical Fibre Cable using the cable blowing method. No previous cabling work should be utilized. In case of road crossing, the Optical fibre cable shall be laid at a depth of 1.5 m through HDPE pipe encased in RCC pipes which shall extend three meters on either side of the end road to take care of any future expansion. Route and Joint indicators should be used to indicate underground OFC using a small brass/steel plate (15 X 15 cm) with all the offset/route details embedded on it. In the rodent prone areas Optical Fibre cable joint closures should be applied with BHC 10% dust (Benzene Hydro chloride 10%) to prevent rodent & termite damage. The method suggested is "BHC" 10% dust of 1 kg is to be mixed in an approximate 2 kg of sand and applied around the optical fibre cable joint enclosures.

In case of further details on the laying, digging etc., it should be done as per latest BSNL National Tender Standards.

Passive OEM Compliance

S. N.	TECHNICAL SPECIFICATION
1	ANSI/TIA/EIA 568-B Commercial Building Telecommunications Cabling Standard – March 2001
2	ANSI/EIA/TIA-569-A Commercial Building Standard for Telecommunications Pathways and Spaces - February, 1998
3	ANSI/EIA/TIA-606 Administration Standard for the Telecommunications Infrastructure of Commercial Buildings - February, 1993
4	ANSI/TIA/EIA-607 Commercial Building Grounding and Bonding Requirements for Telecommunications - August, 1994
5	25 Years assurance of supply of items, spares and parts
6	Service Labor Cost to be included in warranty Certificate (Warranty Certificate sample copy to be attached)
7	All Passive Copper & Fibre cable with Components should be from same OEM only
8	Passive OEM should present in India for more than 5 Years
9	Need to Attach all Passive Item Datasheets for ensuring 100% Compliance
10	Need to submit Single Passive OEM MAF only

PASSIVE COMPONENTS - Technical Specification

Cat 6 4 Pair Cable		
1	Type	Unshielded twisted pair cabling system, TIA / EIA 568-C.2 Category 6 Cabling system
2	Network support	Supports ultrahigh speed data networks such as Gigabit Ethernet (1000 Base-T and 1000 Base-TX) and beyond.
3	TIA / EIA 568-B.1	ETL Verified, UL Listed and UL channel verified- All three Certificates are mandatory
4	IEEE 802.3ab	Zero-bit Error, ETL verified
5	Warranty	25-year systems warranty; Warranty to cover Bandwidth of the specified and installed cabling system, and the installation costs. Site certificate must be issued by OEM
6	Performance characteristics to be provided along with bid	Attenuation, Pair-to-pair and PS NEXT, ELFEXT and PSELFEXT, Return Loss, ACR and PS ACR for 4-connector channel
7	Manufacturer	All passive cabling must be from same OEM (UTP and Fiber)
8	Conductors	23 AWG solid bare copper
9	Insulation	Polyethylene
10	Approvals	UL Listed and UL Channel verified ETL verified to TIA / EIA Cat 6
11	Frequency tested up to	600 MHz minimum
12	Packing	Box of 305 meters
13	Impedance	100 Ohms + / - 15 ohms
14	Performance characteristics to be provided along with bid	Attenuation, Pair-to-pair and PS NEXT, ELFEXT and PSELFEXT, Return Loss, ACR and PS ACR
15	Delay Skew:	45ns Max
16	Impedance:	100 ± 15 Ohms
17	Current Rating:	1.5 A Max
18	Conductor DC Resistance:	66.5Ω/km
19	Voltage:	150VAC
20	Propagation delay:	535ns/100m @250MHz
21	Mutual Capacitance:	5.6nF/100m Nominal
22	Insulation Resistance:	500 MΩ Minimum
23	Dielectric Strength:	1000 V RMS
24	Contact Resistance:	10 mΩ Max

Cat 6 Connector Jack		
1	Features and Benefits	
		Features pointed IDC towers to speed termination and enhance cable retention
		Dual color-coding allows for 568 A/B wiring configuration
		Can be terminated using industry standard punch-down tools
		RJ-11 compatible
		Moulded category identification on jack face as well as optional port identification icons
		USOC Wiring Sequences Available
2	Dust Proof	RJ45 Jack should be avoid Dust
3	RJ45 I/O Compatibility	2a. Individual Compatible RJ45 Jack
		2b. Pointed IDC Tower on RJ45 Jack for easy termination
4	Mechanical Characteristics	
	Plastic Housing:	Thermoplastic UL94V-0 rated or equivalent
	Operating Life:	Minimum 750 insertion cycles
	Contact Material:	Copper Alloy
	Contact Plating:	50μ” Gold/100μ” Nickel
	Contact Force:	100g minimum
	Plug Retention Force:	11 lbf minimum
5	IDC Connector	
	Plastic Housing:	Thermoplastic UL94V-0 rated or equivalent
	Operating Life:	Minimum 20 re-terminations
	Contact Material:	Copper Alloy
	IDC Contact Plating:	Tin/Lead Plate
	Wire Accommodation:	22-24 AWG solid
6	Electrical Characteristics	
	Interface Resistance:	20 milliohms
	Initial Contact Resistance:	2.5 milliohms
	Insulation Resistance:	>100 Megaohms
7	Parts List:	<input type="checkbox"/> Connector Plus Jack with Stuffer Cap

Wall plates / Face Plates		
1	Features and Benefits	The stylish unloaded Synergy Wallplates were designed specifically to accept the UTP Connector Connector. The unloaded Synergy Wallplates are available in 1, 2 and 4 port variants, in five colours, to co-ordinate with any decor and any installation size.
2	Accommodates	Accommodates UTP, STP Connector jacks Accommodates single bezel Fibre modules Accommodates media configurable modules
3	Material	VE10 ABS

24 Port loaded Patch/ Jack Panel 1U Height		
	Features and benefits	
1		Available in 1U 24 Port and 2U 48 Port density
		Each port features the patented spring-loaded shutter:
		– prevents incomplete mating
		– protects from dust and contaminants
		IDC V-shaped contacts
		Dual colour-coding allows for 568 A/B wiring configuration
		Front and rear port labelling (port sequence 1–480) as well as panel identification label
		4 x 6 ganged jack configuration
		Individually removable patch panel ports
		Removable cable management shelf(s) ensure bend radius compliance
		Available with either ANSI and metric hardware kit
		Can be terminated using industry standard punch-down tools
		RJ45 port which is RJ-11 compatible
		Moulded category identification on each port face as well as optional port identification icons
2	Rear Cable Manager	Flat type metal with Perforated Rear Cable Manager to hold CAT6 UTP Cable with Velcro cable ties
3	Dust Proof	RJ45 Jack should be supplied with Cap or Shutter to avoid Dust
4	RJ45 I/O Compatibility	2a. Individual Compatible RJ45 Jack
		2b. Pointed IDC Tower on RJ45 Jack for easy termination
		2c. Half Plugged Patch Cord should be spitted out if not properly plugged in
5	Mechanical Characteristics	
	Material:	CRS (cold rolled steel)
	Thickness:	.060” (1.52mm)

	Coating:	Grey / Option for Black
6	Jack Connector	
	Plastic Housing:	Thermoplastic UL94V-0 rated or equivalent
	Operating Life:	Minimum 750 insertion cycles
	Contact Material:	Phosphor Bronze
	Contact Plating:	50μ” Gold/100μ” Nickel
	Contact Force:	100g minimum
	Plug Retention Force:	11 lbf minimum
7	IDC Connector	
	Plastic Housing:	Thermoplastic UL94V-0 rated or equivalent
	Operating Life:	Minimum 20 re-terminations
	Contact Material:	Phosphor Bronze
	IDC Contact Plating:	Solder Plate (60% tin/40% lead)
	Wire Accommodation:	22-24 AWG solid
8	Electrical Characteristics	
	Interface Resistance:	20 milliohms
	Initial Contact Resistance:	2.5 milliohms
	Insulation Resistance:	>100 Megaohms
9	Standards	ETL Verified to ANSI/TIA-568-C.2, ISO/IEC 11801 Category 6

Cat 6 Patch cord		
1	Type	Cat 6 U/UTP End-to-End Solution and are designed to support data networks for 10/100BASE-T and 1000BASE-T applications.
2	Conductor size:	24 AWG stranded copper wire
3	Nom. O.D.:	5.9mm
4	Sheath:	LS0H
5	Bend radius:	4X O.D.
6	Boots	Transparent Plug with anti-snap slip on boots
7	RJ45 Plug Standard	ISO/IEC 60606-7-4 and FCC 47 Part 68
8	Sheath Standards	Fire Propagation compliant with CSA FTI, IEC 60332-1, IEC 61034
9	Operating temperature range:	-20°C to 60°C
10	MIN operating life	: 750 insertion cycles
11	RJ45 plug and boot material:	Clear polycarbonate
12	Contact material:	0.35mm thick copper alloy
13	Contact plating:	Selective gold
14	RJ45 plug dimensions	ISO/IEC 60603-7-4 and FCC 47 Part 68

	compliant with:	
15	Commercial Standards	ISO/IEC 11801:2002/Amd 2:2010 Cat 6-, TIA-568-C.2 Cat 6
16		ETL Verified
17	Fire Propagation Tests:	LSOH Sheath: CSA FT1, IEC 60332-1, IEC 61034
18	Standard length available	0.5mt to 10 mts

Optical Fiber Cable Armored Single-Mode OS2		
1	Cable Type	optical fibres in water blocked loose tube, taped, corrugated steel tape armoured (STA) polyethylene (HDPE) outer sheathed embedded with two steel wires on the periphery. The cables are with UV Stabilized PE Jacket and protected from Rodent attacks. complying to ISO/IEC 11801, EN50173, ANSI/TIA 568-C.3, Telcordia GR-20; suitable for use in indoor / outdoor ducts, direct burial and backbone cabling
2	Fiber Type	Single Mode, 9/125 micron primary coated buffers, OS2 (IEC 60793-2-50, B1.3 and ITU T G652.d). Shall be manufactured using Vapor Axial Deposition technology.
3	Construction type	
	Tube:	Polybutylene, Terephthalate(PBT)
	Tube colour:	White
	Tube diameter	3.0/2.0 mm nominal OD/ID
	No of fibres:	4/6/8/12/24
	Fibre colour sequence	Blue, Orange, Green, Brown, Slate (Grey), White, Red, Black, Yellow, Violet, Pink, Aqua
	Water Blocking	Thixotropic Gel (Tube) Petroleum Jelly (Interstices)
	Core Wrapping	Polyethylene Terephthalate
	Armouring:	Corrugated Steel Tape Armour (ECCS Tape) Thickness > 0.125mm
	Peripheral Strength Member	Two Steel wires (0.9 mm dia)
	Ripcord:	Polyester based yarns below armoured tape for easy ripping
	Outer Sheath	UV Stabilised Polyethylene (HDPE)
	Sheath thickness	2.0 mm nominal
	Sheath colour	Black
4	Standards	

		complying to ISO/IEC 11801 2nd Edition, type OS1/OS2; AS/ACIF S008; AS/NZS 3080 ; TIA/EIA 568.C.3; IEC-60793-1, 60793-2 EN50173, ANSI/TIA 568-C.3, Telcordia GR-20; suitable for use in indoor / outdoor ducts, direct burial and backbone cabling
5	Mechanical characteristics	
	Dimensions and Mass Overall Cable (Nominal):	9.0 MM
	Mass (Nominal)	80 kg/km
	Cable length	2 km \pm 10%
	Max. Bending Radius (during installation)	20 X Overall diameter
	Max. Bending Radius (during full load):	10 X Overall diameter
	Max. Tensile Strength-Short Term	1500N
	Max. Crush Resistance-Short Term:	2000N/10 cm
	Operating Temperature range	-40°C \pm 70°C
6	Optical characteristics	
	Core Diameter @ 1310nm	9 + 0.6 μ m
	Cladding Diameter	125 + 1.0 μ m
	Cladding Non circularity	< 1.0 %
	Core Non circularity	< 6.0 %
	Core-Cladding Concentricity error	< 0.6 μ m
	Primary Coating Diameter-uncoloured	245 + 10 μ m
	Primary Coating Diameter-coloured	250 + 15 μ m
	Primary Coating Non Circularity	< 6.0 %
	Primary Coating Cladding Concentricity error	< 12.5 μ m
	Proof Stress Level	> 0.7 (~ 1%) GPa
	Strip Force (Peak):	1.0 < F peak. strip < 8.9
	Zero dispersion wavelength	1310-8/+12 nm
	Zero dispersion slope	> 0.091 ps/(nm ² .km)
	Fibre curl:	> 4 m-radius of curvature
	Cut-off wavelength	< 1260 nm

	Mode field diameter at 1310	9.3 ± 0.5 μm
	Mode field diameter at 1550	10.4 ± 0.8 μm
	Macro-bending loss @ 1550 nm, 100 turns on a 60mm mandrel	<0.5 db
	Max (chromatic)dispersion:	
	@1270-1340nm	<5.3ps/nm-km
	@1285-1330nm	<3.5ps/nm-km
	Polarisation mode dispersion (PMD)	
	coefficient, cabled	< 0.5 ps/sq km)
	PMD Link Design Value	< 0.2 ps/sq km) RoHS Complaint
7	Electrical/Optical Characteristics	
	Attenuation	Characteristics - Optical Performance Max. Attenuation (Cable with fibres) At 1310 nm: 0.35 dB/km At 1550 nm: 0.22 dB/km Max. Average Attenuation; At 1310 nm: 0.33 dB/km At 1550 nm: 0.21 dB/km

Single Mode Pigtail		
1	Type of connectors	SC / LC LSOH Jacket - Reduces toxic / corrosive
2	Length	1.5 Mtrs
3	Polishing	100% Factory polished, tested and Guaranteed Performance
4	Standards	ROHS Compliant

24 Port Rack Mount Fiber Panel		
1	Rack Mount	Lockable 19" rack mounted with 1U height, Sliding Drawer Type with 4 Cable entry/exit points (covered with rubber grommets)
2	Material	Powder coated mild steel
3	Accommodation and Supports	Accommodation of single mode cable multimode fibers Capable of supporting SC and LC interface - For 24 Port with SC Coupler Configurable. Fits up to four 6 pack plates/Angled 6 pack plates Management rings within system to accommodate excess fibre bend radius.

4	Compatiabiliy	Labelling for port identification, Fiber Management rings to accommodate excess fiber cordage behind the trough adapters and maintain fiber bend radius

Optical Fibre Adapter Plates		
1	Features and Benefits	
		From 6 Fibre to 24 Fibre Density – Allows you to reuse your existing enclosure and increase your fibre count to meet demand
		Greater Asset Utilisation – Easily Expandible – allows multiple generational uses of the enclosure for the same rack area. Our blank plates and a small profile plate ensures you only pay for the adapters you need.
		Snap Rivets – allows for easy installation and removal
		100% Factory Tested – Guaranteed performance
2	Commercial Standards	ISO/IC 11801, ANSI/TIA/EIA 568.B.3-2000, ANSI/TIA/EIA-492, TELECORDIA GR-409, ICEA-596
3	Mechanical Characteristics	Dimensions: 86 x 33mm
		Plate Material: Black Electroplate or Thermoplastic

SC-LC Single Mode OFC Patch Cords 9/125 Micron		
1	Type of connectors	SC or LC LSOH Jacket - Reduces toxic / corrosive
2	Length	Minimum 1 meters
3	Polishing	100% Factory polished and tested
4	Insertion Loss	Less than 0.35dB per connector
5	Attenuation	0.4dB/km over 1310nm to 1625nm
6	Standards	ROHS Compliant
7	Jacket colour	Industry Standard Colour - OS1-Yellow, OM3-Aqua, OM2-Grey, OM1-Orange
8	Make and Type	SC to LC Duplex Fiber Optic Patch Cord 9/125 Micron
9	Cable Sheath	LSZH
10	Cable Diameter	1.6 mm
11	Ferrule	Ceramic
12	Buffer	Tight buffered
13	Temperature Range	.-40 Degree C to +85 Degree C
14	Buffer Diameter:	900µm
15	Primary Coating :	245µm
16	Strength Member:	Aramid Yarn
17	Jacket Material:	LSOH IEC 61034-1 & 2, IEC-60332-1, IEC-60754- 1 & 2

12U Racks

S. N.	TECHNICAL SPECIFICATION
1	Dimension: The maximum dimension of the rack should be 600W X 9U X 700 (mm)
2	Frame: 12U Rack Enclosures in sturdy sheet steel construction consisting of a 1.5mm sheet steel frame folded from one piece and welded, with All-round protective channel on the door aperture, rear side open panel with countersunk holes for wall mounting brackets. With 1 pair of 19” Mounting angles mounted in the front, which can be recess able for Extra cable management. Both sides of wall mount have vents at the Top & bottom for natural thermal management with a provision of fixing a fan expansion kit. Enclosure base with sheet steel cable gland Plates.
3	Doors: Sheet steel, surface mounted, with foamed-in PU seal, Perforated vertical mounting rails on both sides, screw fixed hinges Which can be changed for left-hand or right-hand door hanging (for Single door enclosures), 130° opening angle which can be retrofitted For 180° in accordance with VDI, cam lock with double-bit insert in Accordance with DIN 43668.
4	Surface finish: Sheets cleaned, degreased, phosphate, electro- Dip coat primed and electro statically powder coated with textured Polyester paint RAL 7035..
5	Supply Include: Wall Mount Rack, wall mounting bracket, PDU 6 Point, 5A Universal, 1 Cantilever tray, 2 cooling fan with Thermostat and 2 Nos of 1U open MS Cable manager with PVC Loops.
6	<p>Approvals: The product should be approved by the following approved organizations:</p> <ul style="list-style-type: none"> - UL 2416, Underwriters Laboratories /USA - ISO 9001, 14001 and 18001.

WORK SCHEDULE

S.N.	Scope of Work (Campus wide LAN)	Time Line* (Week wise)
1.	Supply, Installation, Integration and Commissioning of Extension of IIT (BHU) Local Area Network (Wired and Wi-Fi) in Additional Locations and Testing of LAN	0 – 3rd Weeks
2.	Formal Go-live of LAN	3rd - 4th Week
3.	Acceptance of LAN implementation	End of 4th Week

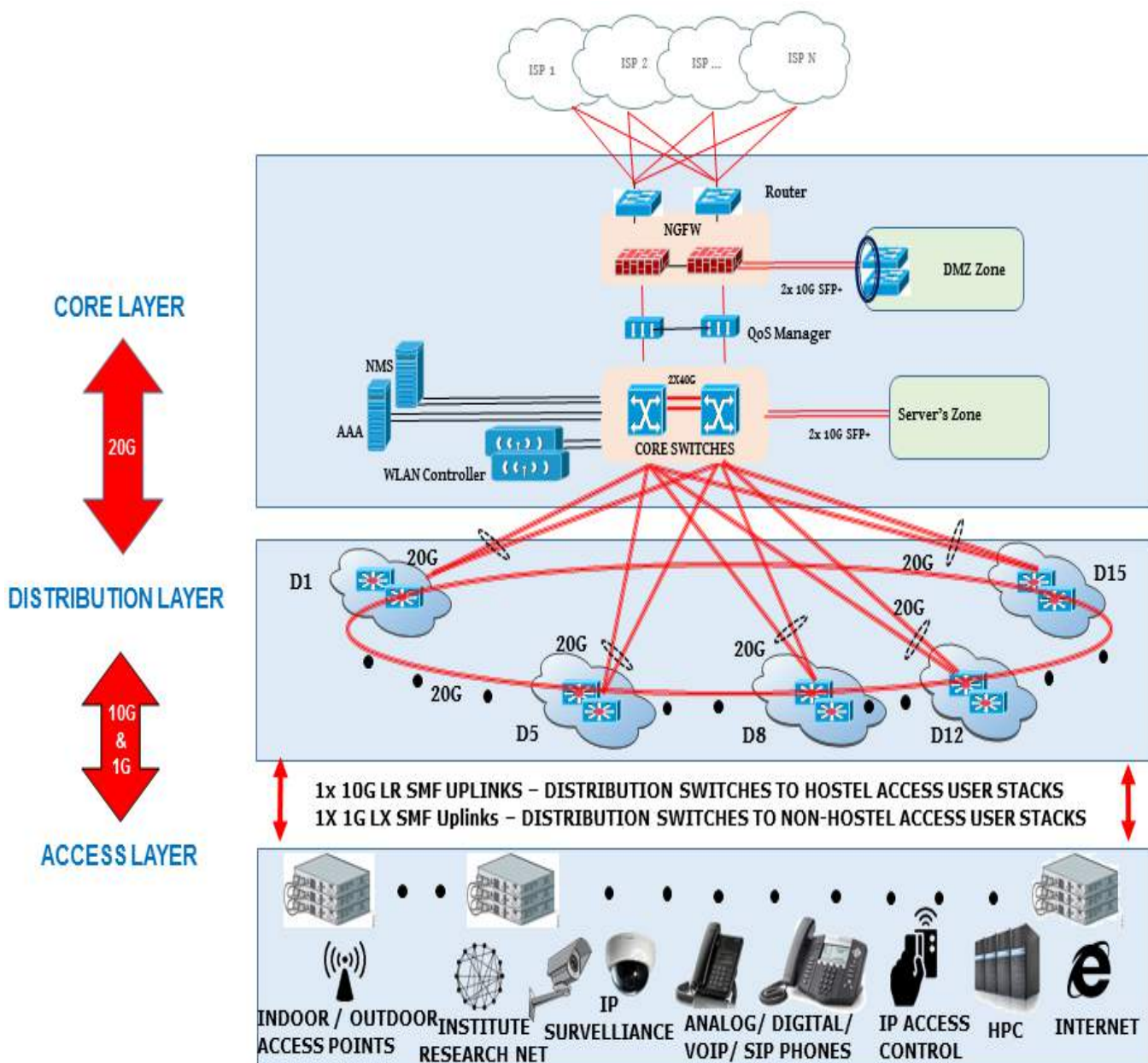
* w.e.f. the date of placing the order.

REFERENCE BILL OF QUANTITY (BOQ)

This document consists of the Bill of Quantity, as a reference for the Project Work under. The network schematic is also shown below. Further, the scope of the work will be from the Distribution Switch to the user end access of the network, both on wired and Wi-Fi, at the work site, to ensure the completeness of the project. All items should comply Annexure – A.

Further, any item if sought necessary by an individual bidder, SHOULD BE proposed as Additional Items under Miscellaneous Category, along with its Price Quote. This ‘Additional Items’, however, shall not be a part of the Price Bid Evaluation.

Network Schematic:



BoQ for the active components, passive components etc.

Active Components (Essential)

S N	Item Specifications	Make Model	UO M	Actual Requirement	Buffered added for	Total Requirement
				QTY	QTY	QTY
1	Distribution Switch 24 Port (Hardware)		No.	02	00	02
	Distribution Switch 24 Port (Software)		No.	02	00	02
	Distribution Switch 24 Port (Warranty)		No.	02	00	02
3	L2 Access Switch 48 Port (Hardware)		No.	18	02	20
	L2 Access Switch 48 Port (Software)		No.	18	02	20
	L2 Access Switch 48 Port (Warranty)		No.	18	02	20
4	L2 Access Switch 24 Port (Hardware)		No.	15	02	17
	L2 Access Switch 24 Port (Software)		No.	15	02	17
	L2 Access Switch 24 Port (Warranty)		No.	15	02	17
5	Indoor Access Point (Hardware)		No.	160	05	165
	Indoor Access Point (Software)		No.	160	05	165
	Indoor Access Point (Warranty)		No.	160	05	165
6	Outdoor Access Point (Hardware)		No.	08	02	10
	Outdoor Access Point (Software)		No.	08	02	10
	Outdoor Access Point (Warranty)		No.	08	02	10

Note: For all the other items (which might not have been listed) and they are essentially needed for proper system integration, the bidders MUST include such items in the BoQ (as and under – *Optional Items on e-Portal*) additional item and quote their specifications and quantities as needed. Institute may or may not consider and accept the proposition, though it may be helpful, if such items are fully proposed by the Bidder.

Optional Equipment (The following item will not be considered for deciding the L1 Bidder)

S N	Item Specifications	Make Model	UO M	Actual Requirement	Buffered added for	Total Requirement
				QTY	QTY	QTY
7	Wireless LAN Controller (Hardware)		No.	01	01	02
	Wireless LAN Controller (Software)		No.	01	01	02
	Wireless LAN Controller (Warranty)		No.	01	01	02

PASSIVE COMPONENTS (ESSENTIAL)

S N	Item Specifications		UO M	Actual Require ment	Buffere d added for	Total Requireme nt
				QTY	QTY	QTY
8	Cat 6 4 Pair Cable	As per specification	Mtrs.	9000	1000	10000
9	Cat 6 Connector Jack	As per specification	No.	200	50	250
10	Wall plates / Face Plates	As per specification	No.	150	50	200
11	24 Port loaded Patch/ Jack Panel 1U Height	As per specification	No.	18	02	20
12	Cat 6 Patch cord	As per specification	No.	1300	200	1500
13	12 Core Optical Fiber Cable Armored Single-Mode OS2	As per specification	Mtrs.	1500	300	1800
14	24 Core Optical Fiber Cable Armored Single-Mode OS2	As per specification	Mtrs.	250	50	300
15	Single Mode Pigtail	As per specification	No.	250	50	300
16	24 Port Rack Mount Fiber Panel	As per specification	No.	20	05	25
17	Optical Fibre Adapter Plates	As per specification	Mtrs.	20	05	25
18	SC-LC Single Mode OFC Patch Cords 9/125 Micron	As per specification	Mtrs.	50	20	70
19	12 U Racks	As per specification	No.	20	02	22
20	Any other item required (give suitable justification and enclose the details in a separate sheet, in the same format)					
	Total					

Note: For all the other items (which might not have been listed) and they are essentially needed for proper system integration, the bidders MUST include such items in the BoQ (as and under – *Optional Items on e-Portal*) additional item and quote their specifications and quantities as needed. Institute may or may not consider and accept the proposition, though it may be helpful, if such items are fully proposed by the Bidder.

Service Components (as and where applicable/ required)

S.No.	Name of the item	UOM	Qty
01	Laying of Indoor UTP Cable with PVC Conduit/Casing/Capping/Cable Tray	Mtrs	3000
02	Fixing and Termination of Jack Panel	Nos.	1000
03	I/O Termination and Face Plate fitting, Ferrulling, Pantascan Testing & Labelling at both end	Nos.	1000
04	Installation of 9/12/15/27/42U Rack including cable dressing	Nos.	30
05	Laying of 25 mm PVC Conduit/ Casing Capping for UTP/OFC	Mtrs.	5000
06	Laying of 12/24 Core OFC through HDPE/PVC Conduit/Casing/capping/cable Tray	Mtrs.	5000
07	HDPE Pipe Laying	Mtrs.	2000
08	Manual Digging, in soft/Hard Soil/& Refilling	Mtrs.	200
09	Supply, Installation, Configurations (and reconfigurations, updates and modifications), integration, commissioning and operations starting from go live and till the end of contract period (Complete Network)		
10	Any other item required (give suitable justification and enclose the details in a separate sheet, in the same format)		

Note: For all the other items (which might not have been listed) and they are essentially needed for proper system integration, the bidders MUST include such items in the BoQ (as and under – *Optional Items on e-Portal*) additional item and quote their specifications and quantities as needed. Institute may or may not consider and accept the proposition, though it may be helpful, if such items are fully proposed by the Bidder.

Facility Management Service Components

48	Project Implementation and Coordination Team	Nos.	

Note: For all the other items (which might not have been listed) and they are essentially needed for proper system integration, the bidders MUST include such items in the BoQ (as and under – *Optional Items on e-Portal*) additional item and quote their specifications and quantities as needed. Institute may or may not consider and accept the proposition, though it may be helpful, if such items are fully proposed by the Bidder.

TECHNICAL COMPLIANCE STATEMENT

I. TECHNICAL SPECIFICATIONS FOR ACTIVE

DISTRIBUTION SWITCH (24 Port)

S. N.	TECHNICAL SPECIFICATION	Compliance (Y / N)	Page No. in price bid
1	Should have minimum 24 x 1G SFP Ports with additional 4x10G SFP+ ports for dual uplink to Core in HA and Distribution Ring.		
2	Switch should have stacking with dedicated stacking ports and 40 Gbps of stacking bandwidth additional to above mentioned data and uplink ports from Day 1.		
3	Switch should have Operating Temperature of 0-40 Degree Centigrade		
4	Switch access ports should be fully populated with 1G Single Mode transceiver and uplinks with 2x10G Single Mode Transceivers		
5	The proposed interfaces must have non-blocking and wire-speed performance for all packet sizes for IPv4 & IPv6 traffic and should have distributed forwarding architecture.		
6	Should have redundant internal Power Supply and Fans.		
7	Switch should have IPv4 & IPv6 static routes, OSPF, OSPFv3, PBR and PIM-SM / DM, BGP+.		
8	Should support Layer 2 protocols 802.1d, 802.1s, 802.1w and 802.3ad.		
9	Switch should support minimum 8 hardware queues per port for applying various traffic prioritization through QoS.		
10	Switch should support SP Queuing, minimum 2K ACL's, 4K Multicast and WRED/WTD. Network OS, 8K Unicast Routes, IPv4 and IPv6 compliant.		
11	Should support Port Security and RADIUS / TACACS integration.		
12	Switch should support port security, DHCP snooping, Dynamic ARP inspection, IP Source guard, BPDU Guard, Spanning tree root guard, Ipv6 RA guard.		
13	Should have NetFlow/sflow to support 32K entries functionality for traffic monitoring.		
14	The proposed switch should be IPv6 ready from day 1 without any additional hardware or software.		
15	Should have direct OEM 24x7x365 TAC support and hardware replacement warranty for 3 Years.		

48 PORTS LAYER 2 ACCESS SWITCH

S. N.	TECHNICAL SPECIFICATION	Compliance (Y / N)	Page No. in price bid
1	Should have minimum 48x 10/100/1000 BaseT RJ45 Ports plus 4x 1G BaseX SFP Ports populated with 2x1G SFP. Switch would use 1G uplinks on day 1.		
3	Switch should have Operating Temperature of 0 - 40+ Degree Centigrade		
6	The proposed interfaces must have non-blocking and wire-speed performance for all packet sizes for IPv4 & IPv6 traffic and should have distributed forwarding architecture.		
7	Should support Layer 2 protocols IEEE 802.1D, 802.1s, 802.1w, 802.1x, 802.3ad, 802.3x, 802.1p, 802.1Q, 802.3, 802.3u, 802.3ab, 802.3z, 802.3az, 802.3af, 802.3at. should also have 802.3af, 802.3at for POE switches.		
8	Switch should have IPv4 & IPv6 static routes , RIP, RIPng ,OSPF and OSPFv3 from day 1		
9	Switch should have minimum 1K ACL's and 1K IPv4 and IPv6 multicast groups.		
10	Switch should support minimum 8 hardware queues per port for applying various traffic prioritization through QoS. Switch should support SP Queuing and WRED/WTD		
11	Should support 802.1x authentication, Port Security and RADIUS / TACACS integration.		
12	Should have NetFlow / sFlow functionality for traffic monitoring.		
13	Switch should support port security, DHCP snooping, Dynamic ARP inspection, IP Source guard, BPDU Guard, Spanning tree root guard and IPv6 First Hop Security.		
14	The proposed switch should be IPv6 ready from Day 1 without any additional software and hardware changes.		
15	Should have direct OEM 24x7x365 TAC support with software update and NBD Advanced hardware replacement warranty for 3 Years.		

24 PORTS LAYER 2 ACCESS SWITCH

S. N.	TECHNICAL SPECIFICATION	Compliance (Y / N)	Page No. in price bid
1	Should have minimum 24 x 10/100/1000 BaseTPoE/PoE+ RJ45 Ports (minimum 370W) plus 4x 1G BaseX SFP+ Ports populated with 2x1G SFP. Switch would use 1G uplinks on day 1.		
2	The switch should have 40 Gbps of stacking bandwidth (excluding uplink ports) proposed with stacking cable. Stacking should support upto 4 stacking members.		
3	Switch should have Operating Temperature of 0-45 Degree Centigrade		
4	The proposed interfaces must have non-blocking and wire-speed performance for all packet sizes for IPv4 & IPv6 traffic and should have distributed forwarding architecture.		
5	Should support Layer 2 protocols IEEE 802.1D, 802.1s, 802.1w, 802.1x, 802.3ad, 802.3x, 802.1p, 802.1Q, 802.3, 802.3u, 802.3ab, 802.3z, 802.3az, 802.3af, 802.3at. should also have 802.3af, 802.3at for POE switches.		
6	Switch should have IPv4 & IPv6 static routes , RIP, RIPng ,OSPF and OSPFv3 from day 1		
7	Switch should have minimum 1K ACL's and 1K IPv4 and IPv6 multicast groups.		
8	Switch should support minimum 8 hardware queues per port for applying various traffic prioritization through QoS. Switch should support SP Queuing and WRED/WTD.		
9	Should support 802.1x authentication, Port Security and RADIUS / TACACS integration.		
10	Should have NetFlow / sFlow functionality for traffic monitoring.		
11	Switch should support port security, DHCP snooping, Dynamic ARP inspection, IP Source guard, BPDU Guard, Spanning tree root guard.		
12	The proposed switch should be IPv6 ready from Day 1 without any additional software and hardware changes.		
13	The switch should have 1GB RAM and 1GB Internal Flash memory.		
14	Should have direct OEM 24x7x365 TAC support with software update and NBD Advanced hardware replacement warranty for 3 Years.		

INDOOR ACCESS POINTS

S.N.	TECHNICAL SPECIFICATION	Compliance (Y / N)	Page No. in price bid
1	Wall/Ceiling mounted Wi-Fi access-point suitable for indoor use with at least 1 10/100/1000Mbps Ethernet ports with one port supporting standard 802.3af/at POE+.		
2	802.11ac AP should operate in 2.4 GHz (300 Mbps or more) and 5 GHz simultaneously and capable of minimum 1 Gbps on 5 GHz for 802.11ac clients supporting minimum 4x4 MIMO with 4 spatial streams. It must support minimum 3 concurrent MU-MIMO users.		
3	Should support minimum 16x BSSID per AP. Should have Operating Temperature of 0-50 Deg Centigrade		
4	The access point should be capable of performing security scanning and serving clients on the same radio. It should be also capable of performing RF analysis and security scanning using same radio.		
5	Must support minimum 24dbm of transmit power in both 2.4Ghz and 5Ghz radios and minimum 4dB antenna gain. AP should support 20MHz, 40MHz and 80MHz channel size.		
6	AP should support band steering and load balance across bands.		
7	Security mechanisms should be in place to protect the communication between the Access Point controller and the Access Points.		
8	The access point should support WPA2 , WPA 3 enterprise authentication and AES/CCMP encryption.		
9	AP should support 802.11k for Radios Resource management and 802.11r for fast roaming and inbuilt/external Built-in Bluetooth Low-Energy (BLE) radio to Enables location based services.		
10	Implement Wi-Fi alliance standards WMM, 802.11d, 802.11h and 802.11e and should support VoWLAN		
11	AP must support spectrum analysis functions		
12	AP should support Minimum -90dB Receiving sensitivity. AP should support Receiver sensitivity Threshold to reduce noise reception in the AP to increase SNR and performance		
13	802.11 a/b/g/n/ac wave 2 functionality certified by the Wi-Fi alliance, Should be plenum rated (UL2043), and RF transmission power should be approved by WPC.		
14	Should have direct OEM 24x7x365 TAC support with software update and NBD Advanced hardware replacement warranty for 3 Years.		

OUTDOOR ACCESS POINTS

S. N.	TECHNICAL SPECIFICATION	Compliance (Y / N)	Page No. in price bid
1	Wall/Ceiling/Poll mounted Wi-fi access-point suitable for outdoor use with at least 1 10/100/1000Mbps Ethernet ports supporting standard 802.3af/at POE+. Should have additional SFP port for direct fiber termination if required.		
2	802.11ac AP should operate in 2.4 GHz (300 Mbps or more) and 5 GHz simultaneously and capable of minimum 1Gbps on 5 Ghz for 802.11ac clients supporting minimum 4x4 MIMO with 4 spatial streams. It must support minimum 3 concurrent MU-MIMO users.		
3	Should support minimum 16x BSSID per AP. Should have Operating Temperature of -10 to +55 Deg Centigrade		
4	The access point should be capable of performing security scanning and serving clients on the same radio. It should be also capable of performing RF analysis and security scanning using same radio.		
5	Must support minimum 24dBm of transmit power in 2.4GHz and 28dBm transmit power in 5GHz radios and minimum 4dB antenna gain. AP should support 20MHz, 40MHz and 80MHz channel size.		
6	AP should support band steering and load balance across bands.		
7	Security mechanisms should be in place to protect the communication between the Access Point controller and the Access Points.		
8	The access point should support WPA2 , WPA 3 enterprise authentication and AES/CCMP encryption.		
9	AP should support 802.11k for Radios Resource management and 802.11r for fast roaming and inbuilt/external Built-in Bluetooth Low-Energy (BLE) radio to Enables location based services.		
10	Implement Wi-Fi alliance standards WMM, 802.11d, 802.11h and 802.11e and should support VoWLAN		
11	AP must support spectrum analysis functions		
12	AP should support Minimum -90dB Receiving sensitivity. AP should support Receiver sensitivity Threshold to reduce noise reception in the AP to increase SNR and performance		
13	802.11 a/b/g/n/ac wave 2 functionality certified by the Wi-Fi alliance, Should be IP67 rated and RF transmission power should be approved by WPC.		
14	AP should support up to 100-mph sustained winds and up to 165-mph wind gusts		
15	Should have direct OEM 24x7x365 TAC support with software update and NBD Advanced hardware replacement warranty for 3 years.		

WIRELESS LAN CONTROLLER (WLC)

S.No.	TECHNICAL SPECIFICATION	Compliance (Y / N)	Page No. in price bid
1	Wi-Fi coverage should be -65dBm or better in one band and at least -70dBm in another band inside Rooms and all coverage area.		
2	Proposed WLC should be On-Prem/ cloud based. Cloud WLC should be hosted in India.		
3	WLC should support IPv4 and IPv6 including IEEE 802.11a, 802.11b, 802.11g, 802.11d, WMM/802.11e, 802.11n, 802.11ac standards.		
4	if On Premise WLC, should have minimum 2 x 10G SFP+ of uplink interfaces.		
5	proposed WLC should support up to 300 Access points and up to 300 Devices in each server. It should be scalable to 500 AP's through single server or through cluster with single interface management of all WLC's. It should also support AP license migration from one WLC to another, in case of future upgradation.		
6	On Premise WLC Must provide 1+1 or N+1 redundancy and The controllers shall be implemented in HA mode. Cloud based WLC should provide HA with no point of failure.		
7	Wi-Fi system Must have feature for recovery without re-authentication of the client in the event of LAN and WLAN infrastructure disruption to deliver a non-stop client session		
8	WLC should provide air-time fairness between these different speed clients – slower clients should not be starved by the faster clients and faster clients should not adversely affected by slower clients.		
9	WLC Must support an ability to dynamically adjust channel, power settings and airtime, based on the RF environment.		
11	WLC should support L2/L3 discovery for AP's.		
12	Should support adhere to the strictest level of security standards, including 802.11i Wi-Fi Protected Access 2 (WPA2)/WPA, 802.1X with multiple Extensible Authentication Protocol (EAP) and 802.1x Authentication.		
13	Controller should support WIDS/WIPS includes rogue AP detection and DOS attacks Detection.		
14	WLC should support L2/L3/L4 Access Control and L2 Client Isolation so User cannot access each other's devices. Isolation should have option to apply on AP or SSID's		
15	Controller/System should support Access Control based on Identity/Role/ Device/Time or Application.		

16	Must support client roaming in L2/L3 networks and also across controllers.		
17	Controller should support integrated or External AAA servers including Microsoft AD and Linux based open source AAA.		
18	The Controller/System should support L7 Application/OS/Device finger printing and device type based policies.		
19	The controller/System should be able to raise critical alarms by sending an email and/ or SMS.		
20	Per SSID or dynamic Per user bandwidth Rate Limiting		
21	Support advanced multicast features and WMM support to provide best performance on Video applications and should have		
22	Controller/ System should have BYOD features and should support integrated/ and external captive portal integration.		
23	System should provide Social Login's (Facebook, Google etc) and a web-based application that allows non-technical staff to create Guest accounts with validity for fixed duration like hours or days and restricted to number of devices. Password to guest should be shared over Email or SMS (Indian SMS gateway services shall be supported provided by Campus).		
24	It should also provide Guest access policy based on time, bandwidth and quota (bandwidth consumption).		
25	WLC should be Wi-Fi alliance certified with passpoint compliance		
26	Should have direct OEM 24x7 TAC support with Software upgrade warranty for 3 Years.		

Broad Guidelines* for OFC Laying in Outdoor

(* - as and where applicable, included for sake of completeness and as a part of mandatory compliance)

All Optical Fibre etc. in Outdoor and Indoor must be freshly laid, in PLB HDPE (50mm outer diameter) pipes at a minimum depth of 250 cm, leaving 30 meter coil in Core, every distribution point and aggregation point, for Optical Fibre Cable using Horizontal Directional Drilling (HDD - also called as the trench less technology or micro-tunnelling) and laying of Optical Fibre Cable using the cable blowing method. No previous cabling work should be utilized. In case of road crossing, the Optical fibre cable shall be laid at a depth of 1.5 m through HDPE pipe encased in RCC pipes which shall extend three meters on either side of the end road to take care of any future expansion. Route and Joint indicators should be used to indicate underground OFC using a small brass/steel plate (15 X 15 cm) with all the offset/route details embedded on it. In the rodent prone areas Optical Fibre cable joint closures should be applied with BHC 10% dust (Benzene Hydro chloride 10%) to prevent rodent & termite damage. The method suggested is "BHC" 10% dust of 1 kg is to be mixed in an approximate 2 kg of sand and applied around the optical fibre cable joint enclosures.

In case of further details on the laying, digging etc., it should be done as per latest BSNL National Tender Standards.

Passive OEM Compliance

S. N.	TECHNICAL SPECIFICATION	Compliance (Y / N)	Page No. in price bid
1	ANSI/TIA/EIA 568-B Commercial Building Telecommunications Cabling Standard – March 2001		
2	ANSI/EIA/TIA-569-A Commercial Building Standard for Telecommunications Pathways and Spaces - February, 1998		
3	ANSI/EIA/TIA-606 Administration Standard for the Telecommunications Infrastructure of Commercial Buildings - February, 1993		
4	ANSI/TIA/EIA-607 Commercial Building Grounding and Bonding Requirements for Telecommunications - August, 1994		
5	25 Years assurance of supply of items, spares and parts		
6	Service Labor Cost to be included in warranty Certificate (Warranty Certificate sample copy to be attached)		
7	All Passive Copper & Fibre cable with Components should be from same OEM only		
8	Passive OEM should present in India for more than 5 Years		
9	Need to Attach all Passive Item Datasheets for ensuring 100% Compliance		
10	Need to submit Single Passive OEM MAF only		

PASSIVE COMPONENTS - Technical Specification

Cat 6 4 Pair Cable			Compliance (Y / N)	Page No. in price bid
1	Type	Unshielded twisted pair cabling system, TIA / EIA 568-C.2 Category 6 Cabling system		
2	Network support	Supports ultrahigh speed data networks such as Gigabit Ethernet (1000 Base-T and 1000 Base-TX) and beyond.		
3	TIA / EIA 568-B.1	ETL Verified, UL Listed and UL channel verified- All three Certificates are mandatory		
4	IEEE 802.3ab	Zero-bit Error, ETL verified		
5	Warranty	25-year systems warranty; Warranty to cover Bandwidth of the specified and installed cabling system, and the installation costs. Site certificate must be issued by OEM		
6	Performance characteristics to be provided along with bid	Attenuation, Pair-to-pair and PS NEXT, ELFEXT and PSELFEXT, Return Loss, ACR and PS ACR for 4-connector channel		
7	Manufacturer	All passive cabling must be from same OEM (UTP and Fiber)		
8	Conductors	23 AWG solid bare copper		
9	Insulation	Polyethylene		
10	Approvals	UL Listed and UL Channel verified		
		ETL verified to TIA / EIA Cat 6		
11	Frequency tested up to	600 MHz minimum		
12	Packing	Box of 305 meters		
13	Impedance	100 Ohms + / - 15 ohms		
14	Performance characteristics to be provided along with bid	Attenuation, Pair-to-pair and PS NEXT, ELFEXT and PSELFEXT, Return Loss, ACR and PS ACR		
15	Delay Skew:	45ns Max		
16	Impedance:	100 ± 15 Ohms		
17	Current Rating:	1.5 A Max		
18	Conductor DC Resistance:	66.5Ω/km		
19	Voltage:	150VAC		
20	Propagation delay:	535ns/100m @250MHz		
21	Mutual Capacitance:	5.6nF/100m Nominal		
22	Insulation Resistance:	500 MΩ Minimum		
23	Dielectric Strength:	1000 V RMS		
24	Contact Resistance:	10 mΩ Max		

Cat 6 Connector Jack				
			Compliance (Y / N)	Page No. in price bid
1	Features and Benefits			
		Features pointed IDC towers to speed termination and enhance cable retention		
		Dual color-coding allows for 568 A/B wiring configuration		
		Can be terminated using industry standard punch-down tools		
		RJ-11 compatible		
		Molded category identification on jack face as well as optional port identification icons		
		USOC Wiring Sequences Available		
2	Dust Proof	RJ45 Jack should be avoid Dust		
3	RJ45 I/O Compatibility	2a. Individual Compatible RJ45 Jack		
		2b. Pointed IDC Tower on RJ45 Jack for easy termination		
4	Mechanical Characteristics			
	Plastic Housing:	Thermoplastic UL94V-0 rated or equivalent		
	Operating Life:	Minimum 750 insertion cycles		
	Contact Material:	Copper Alloy		
	Contact Plating:	50μ” Gold/100μ” Nickel		
	Contact Force:	100g minimum		
	Plug Retention Force:	11 lbf minimum		
5	IDC Connector			
	Plastic Housing:	Thermoplastic UL94V-0 rated or equivalent		
	Operating Life:	Minimum 20 re-terminations		
	Contact Material:	Copper Alloy		
	IDC Contact Plating:	Tin/Lead Plate		
	Wire Accommodation:	22-24 AWG solid		
6	Electrical Characteristics			
	Interface Resistance:	20 milliohms		
	Initial Contact Resistance:	2.5 milliohms		
	Insulation Resistance:	>100 Megaohms		
7	Parts List:	<input type="checkbox"/> Connector Plus Jack with Stuffer Cap		

Wall plates / Face Plates			Compliance (Y / N)	Page No. in price bid
1	Features and Benefits	The stylish unloaded Synergy Wallplates were designed specifically to accept the UTP Connector Connector. The unloaded Synergy Wallplates are available in 1, 2 and 4 port variants, in five colours, to co-ordinate with any decor and any installation size.		
2	Accommodates	Accommodates UTP, STP Connector jacks Accommodates single bezel Fibre modules Accommodates media configurable modules		
3	Material	VE10 ABS		

24 Port loaded Patch/ Jack Panel 1U Height				
			Compliance (Y / N)	Page No. in price bid
	Features and benefits			
1		Available in 1U 24 Port and 2U 48 Port density		
		Each port features the patented spring-loaded shutter:		
		– prevents incomplete mating		
		– protects from dust and contaminants		
		IDC V-shaped contacts		
		Dual colour-coding allows for 568 A/B wiring configuration		
		Front and rear port labelling (port sequence 1–480) as well as panel identification label		
		4 x 6 ganged jack configuration		
		Individually removable patch panel ports		
		Removable cable management shelf(s) ensure bend radius compliance		
		Available with either ANSI and metric hardware kit		
		Can be terminated using industry standard punch-down tools		
		RJ45 port which is RJ-11 compatible		
		Molded category identification on each port face as well as optional port identification icons		
2	Rear Cable Manager	Flat type metal with Perforated Rear Cable Manager to hold CAT6 UTP Cable with velcro cable ties		
3	Dust Proof	RJ45 Jack should be supplied with Cap or Shutter to avoid Dust		
4	RJ45 I/O Compatibility	2a. Individual Compatible RJ45 Jack		
		2b. Pointed IDC Tower on RJ45 Jack for easy termination		
		2c. Half Plugged Patch Cord should be spitted out if not properly plugged in		

5	Mechanical Characteristics			
	Material:	CRS (cold rolled steel)		
	Thickness:	.060" (1.52mm)		
	Coating:	Grey / Option for Black		
6	Jack Connector			
	Plastic Housing:	Thermoplastic UL94V-0 rated or equivalent		
	Operating Life:	Minimum 750 insertion cycles		
	Contact Material:	Phosphor Bronze		
	Contact Plating:	50μ" Gold/100μ" Nickel		
	Contact Force:	100g minimum		
	Plug Retention Force:	11 lbf minimum		
7	IDC Connector			
	Plastic Housing:	Thermoplastic UL94V-0 rated or equivalent		
	Operating Life:	Minimum 20 reterminations		
	Contact Material:	Phosphor Bronze		
	IDC Contact Plating:	Solder Plate (60% tin/40% lead)		
	Wire Accommodation:	22-24 AWG solid		
8	Electrical Characteristics			
	Interface Resistance:	20 milliohms		
	Initial Contact Resistance:	2.5 milliohms		
	Insulation Resistance:	>100 Megaohms		
9	Standards	ETL Verified to ANSI/TIA-568-C.2, ISO/IEC 11801 Category 6		

Cat 6 Patch cord				
			Compliance (Y / N)	Page No. in price bid
1	Type	Cat 6 U/UTP End-to-End Solution and are designed to support data networks for 10/100BASE-T and 1000BASE-T applications.		
2	Conductor size:	24 AWG stranded copper wire		
3	Nom. O.D.:	5.9mm		
4	Sheath:	LS0H		
5	Bend radius:	4X O.D.		
6	Boots	Transparent Plug with anti-snag slip on boots		
7	RJ45 Plug Standard	ISO/IEC 60606-7-4 and FCC 47 Part 68		
8	Sheath Standards	Fire Propagation compliant with CSA FTI, IEC 60332-1, IEC 61034		
9	Operating temperature range:	-20°C to 60°C		
10	MIN operating life	: 750 insertion cycles		

11	RJ45 plug and boot material:	Clear polycarbonate		
12	Contact material:	0.35mm thick copper alloy		
13	Contact plating:	Selective gold		
14	RJ45 plug dimensions compliant with:	ISO/IEC 60603-7-4 and FCC 47 Part 68		
15	Commercial Standards	ISO/IEC 11801:2002/Amd 2:2010 Cat 6-, TIA-568-C.2 Cat 6		
16		ETL Verified		
17	Fire Propagation Tests:	LS0H Sheath: CSA FT1, IEC 60332-1, IEC 61034		
18	Standard length available	0.5mt to 10 mts		

Optical Fiber Cable Armored Single-Mode OS2				
			Compliance (Y / N)	Page No. in price bid
1	Cable Type	optical fibres in water blocked loose tube, taped, corrugated steel tape armoured (STA) polyethylene (HDPE) outer sheathed embedded with two steel wires on the periphery. The cables are with UV Stabilized PE Jacket and protected from Rodent attacks. complying to ISO/IEC 11801, EN50173, ANSI/TIA 568-C.3, Telcordia GR-20; suitable for use in indoor / outdoor ducts, direct burial and backbone cabling		
2	Fiber Type	Single Mode, 9/125 micron primary coated buffers, OS2 (IEC 60793-2-50, B1.3 and ITU T G652.d). Shall be manufactured using Vapor Axial Deposition technology.		
3	Construction type			
	Tube:	Polybutylene, Terephthalate(PBT)		
	Tube colour:	White		
	Tube diameter	3.0/2.0 mm nominal OD/ID		
	No of fibres:	4/6/8/12		
	Fibre colour sequence	Blue, Orange, Green, Brown, Slate (Grey), White, Red, Black, Yellow, Violet, Pink, Aqua		
	Water Blocking	Thixotropic Gel (Tube) Petroleum Jelly (Interstices)		
	Core Wrapping	Polyethylene Terephthalate		
	Armouring:	Corrugated Steel Tape Armour (ECCS Tape) Thickness > 0.125mm		
	Peripheral Strength Member	Two Steel wires (0.9 mm dia)		
	Ripcord:	Ployester based yarns below armoured tape for easy ripping		
	Outer Sheath	UV Stabilised Polyethylene (HDPE)		
	Sheath thickness	2.0 mm nominal		

	Sheath colour	Black		
4	Standards			
		complying to ISO/IEC 11801 2nd Edition, type OS1/OS2; AS/ACIF S008; AS/NZS 3080 ; TIA/EIA 568.C.3; IEC-60793-1, 60793-2 EN50173, ANSI/TIA 568-C.3, Telcordia GR-20; suitable for use in indoor / outdoor ducts, direct burial and backbone cabling		
5	Mechanical characteristics			
	Dimensions and Mass Overall Cable (Nominal):	9.0 MM		
	Mass (Nominal)	80 kg/km		
	Cable length	2 km ± 10%		
	Max. Bending Radius (during installation)	20 X Overall diameter		
	Max. Bending Radius (during full load):	10 X Overall diameter		
	Max. Tensile Strength- Short Term	1500N		
	Max. Crush Resistance- Short Term:	2000N/10 cm		
	Operating Temperature range	-40°C ±70°C		
6	Optical characteristics			
	Core Diameter @ 1310nm	9 + 0.6 µm		
	Cladding Diameter	125 + 1.0 µm		
	Cladding Non circularity	< 1.0 %		
	Core Non circularity	< 6.0 %		
	Core-Cladding Concentricity error	< 0.6 µm		
	Primary Coating Diameter-uncoloured	245 + 10 µm		
	Primary Coating Diameter-coloured	250 + 15 µm		
	Primary Coating Non Circularity	< 6.0 %		
	Primary Coating Cladding Concentricity error	< 12.5 µm		
	Proof Stress Level	> 0.7 (~ 1%) GPa		
	Strip Force (Peak):	1.0 < F peak.strip < 8.9		
	Zero dispersion wavelength	1310-8/+12 nm		
	Zero dispersion slope	> 0.091 ps/(nm ² .km)		
	Fibre curl:	> 4 m-radius of curvatuer		
	Cut-off wavelength	< 1260 nm		
	Mode field diameter at 1310	9.3 ± 0.5 µm		
	Mode field diameter at	10.4 ± 0.8 µm		

	1550			
	Macrobending loss @ 1550 nm, 100 turns on a 60mm mandrel	<0.5 db		
	Max (chromatic)dispersion:			
	@1270-1340nm	<5.3ps/nm-km		
	@1285-1330nm	<3.5ps/nm-km		
	Polarisation mode dispersion (PMD)			
	coefficient, cabled	< 0.5 ps/sq km)		
	PMD Link Design Value	< 0.2 ps/sq km) RoHS Compliant		
7	Electrical/Optical Characteristics			
	Attenuation	Characteristics - Optical Performance Max. Attenuation (Cable with fibres) At 1310 nm: 0.35 dB/km At 1550 nm: 0.22 dB/km Max. Average Attenuation; At 1310 nm: 0.33 dB/km At 1550 nm: 0.21 dB/km		

Single Mode Pigtail				
			Compliance (Y / N)	Page No. in price bid
1	Type of connectors	SC / LC LSOH Jacket - Reduces toxic / corrosive		
2	Length	1.5 Mtrs		
3	Polishing	100% Factory polished, tested and Guaranteed Performance		
4	Standartds	ROHS Compliant		

24 Port Rack Mount Fiber Panel				
			Compliance (Y / N)	Page No. in price bid
1	Rack Mount	Lockable 19" rack mounted with 1U height, Sliding Drawer Type with 4 Cable entry/exit points (covered with rubber grommets)		
2	Material	Powder coated mild steel		
3	Accommodation and Supports	Accommodation of single mode cable multimode fibers Capable of supporting SC and LC interface - For 24 Port with SC Coupler Configurable. Fits up to four 6 pack plates/Angled 6 pack plates Management rings within system to accommodate excess fibre bend		

		radius.		
4	Compatiabiliy	Labelling for port identification, Fiber Management rings to accommodate excess fiber cordage behind the trough adapters and maintain fiber bend radius		

Optical Fibre Adapter Plates				
			Compliance (Y / N)	Page No. in price bid
1	Features and Benefits			
		From 6 Fibre to 24 Fibre Density – Allows you to reuse your existing enclosure and increase your fibre count to meet demand		
		Greater Asset Utilisation – Easily Expandable – allows multiple generational uses of the enclosure for the same rack area. Our blank plates and a small profile plate ensures you only pay for the adapters you need.		
		Snap Rivets – allows for easy installation and removal		
		100% Factory Tested – Guaranteed performance		
2	Commercial Standards	ISO/IC 11801, ANSI/TIA/EIA 568.B.3-2000, ANSI/TIA/EIA-492, TELECORDIA GR-409, ICEA-596		
3	Mechanical Characteristics	Dimensions: 86 x 33mm		
		Plate Material: Black Electroplate or Thermoplastic		

SC-LC Single Mode OFC Patch Cords 9/125 Micron				
			Compliance (Y / N)	Page No. in price bid
1	Type of connectors	SC or LC LSOH Jacket - Reduces toxic / corrosive		
2	Length	Minimum 1 meters		
3	Polishing	100% Factory polished and tested		
4	Insertion Loss	Less than 0.35dB per connector		
5	Attenuation	0.4dB/km over 1310nm to 1625nm		
6	Standards	ROHS Compliant		
7	Jacket colour	Industry Standard Colour - OS1-Yellow, OM3-Aqua, OM2-Grey, OM1-Orange		
8	Make and Type	SC to LC Duplex Fiber Optic Patch Cord 9/125 Micron		

9	Cable Sheath	LSZH		
10	Cable Diameter	1.6 mm		
11	Ferrule	Ceramic		
12	Buffer	Tight buffered		
13	Temperature Range	.-40 Degree C to +85 Degree C		
14	Buffer Diameter:	900µm		
15	Primary Coating :	245µm		
16	Strength Member:	Aramid Yarn		
17	Jacket Material:	LS0H IEC 61034-1 & 2, IEC-60332-1, IEC-60754-1 & 2		

12U Racks

S. N.	TECHNICAL SPECIFICATION	Compliance (Y / N)	Page No. in price bid
1	Dimension: The maximum dimension of the rack should be 600W X 9U X 700 (mm)		
2	Frame: 12U Rack Enclosures in sturdy sheet steel construction consisting of a 1.5mm sheet steel frame folded from one piece and welded, with All-round protective channel on the door aperture, rear side open panel with countersunk holes for wall mounting brackets. With 1 pair of 19” Mounting angles mounted in the front, which can be recess able for Extra cable management. Both sides of wall mount have vents at the Top & bottom for natural thermal management with a provision of fixing a fan expansion kit. Enclosure base with sheet steel cable gland Plates.		
3	Doors: Sheet steel, surface mounted, with foamed-in PU seal, Perforated vertical mounting rails on both sides, screw fixed hinges Which can be changed for left-hand or right-hand door hanging (for Single door enclosures), 130ø opening angle which can be retrofitted For 180ø in accordance with VDI, cam lock with double-bit insert in Accordance with DIN 43668.		
4	Surface finish: Sheets cleaned, degreased, phosphate, electro- Dip coat primed and electro statically powder coated with textured Polyester paint RAL 7035..		
5	Supply Include: Wall Mount Rack, wall mounting bracket, PDU 6 Point, 5A Universal, 1 Cantilever tray, 2 cooling fan with Thermostat and 2 Nos of 1U open MS Cable manager with PVC Loops.		
6	Approvals: The product should be approved by the following approved organizations: <ul style="list-style-type: none"> - UL 2416, Underwriters Laboratories /USA - ISO 9001, 14001 and 18001. 		

*Note : The bidder should provide the relevant supporting document in compliance of above.

SECTION 9

ANNEXURE III

PREVIOUS SIMILAR ORDER EXECUTED

Please quote best minimum prices applicable for a premier Educational and Research Institution. The party must give details of purchase orders identical or similar equipment supplied to any IITs/NITs/Govt. Office/PSU/University/Autonomous Body as per below Format in last Five years (to be enclosed in Price Bid / Commercial Bid) along with the final price paid and details are mandatory.

Name of the Firm _____

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

(Kindly enclose the scan copy of aforementioned purchase orders)

Details of Technical Expert

Name of application specialist / Service Engineer who have the technical competency to handle and support the quoted product during the warranty period.		
Name of the organization	Name of Contact Person	Contact No.

Signature and Seal of the Manufacturer / Bidder _____

Place : _____

Date : _____

BID SUBMISSION

Online Bid Submission:

The Online bids (complete in all respect) must be uploaded online in **two** Envelops as explained below:

Envelope – 1			
(Following documents to be provided as .pdf file)			
Sl. No.	Document	Content	File Types
1.	Technical Bid	Technical Compliance Sheet, Bidder information form	.PDF
2.		Organization Declaration Sheet, Compliance sheets for Essential Pre Bid Criteria and Checklist given in Section 5.	.PDF
3.		Checklist, Tender Acceptance, Tender Form, etc.	
4.		List of organizations/ clients where the same products have been supplied (in last two years) along with their contact number(s). (Annexure-III)	.PDF
5.		Technical supporting documents in support of all claims made at Annexure-I	.PDF
6.		EMD and Tender fee submission proof	.PDF
7.		Brochure of quoted product and other documents, if any	.PDF
Envelope – 2			
Sl. No.	Document	Content	
1	Price Bid	Duly filled and signed Tender form (Price Bid)	.PDF
2.		Duly signed BoQ in .pdf format (Annexure IV)	.PDF
3		Duly signed BoQ in .XLS format (Annexure IV)	.XLS

PRICE BID (BoQ) FORMAT

(Bidders are required to submit their rate in the enclosed BoQ in .pdf & .xls Format)

PRICE SCHEDULE

(This BOQ template must not be modified/replaced by the bidder and the same should be uploaded after filling the relevant columns, else the bidder is liable to be rejected for this tender. Bidders are allowed to enter the Bidder Name and Values only)

NUMBER #	TEXT #	TEXT #	NUMBER #	TEXT #	TEXT #	NUMBER #	NUMBER	NUMBER	NUMBER	NUMBER	TEXT	NUMBER #	NUMBER #	TEXT #
Sl. No.	Item Description	Item Code / Make (Bidder need to furnish the details)	Quantity	Currency Conversion against each Item	Quoted Currency in INR / Other Currency	BASIC RATE In Figures To be entered by the Bidder in Rs. P	GST Rate in Percentage, if Any	GST Amount Rs. P	Freight Charges (Unloading & Stacking) in Rs. P	Any Other Taxes/Duties/Levi es in Rs. P	Basic Custom Duty If applicable (Only in the case of Imported Items) in Rs. P	TOTAL AMOUNT, It will be converted	TOTAL TAXES It will be converted only If you choose Full Conversion, Until it will be treated as INR	TOTAL AMOUNT In Words
1	2	3	4	11	12	7	8	9	10	11	12	15	16	17
1	Active Components													
1.01	Distribution Switch 24 Port (Hardware)	Item1	2	Full Conversion	INR							0.00	0.00	INR Zero Only
2.01	Distribution Switch 24 Port (Software)	Item2	2	Full Conversion	INR							0.00	0.00	INR Zero Only
3.01	Distribution Switch 24 Port (Warranty)	Item3	2	Full Conversion	INR							0.00	0.00	INR Zero Only
4.01	L2 Access Switch 48 Port (Hardware)	Item4	20	Full Conversion	INR							0.00	0.00	INR Zero Only
5.01	L2 Access Switch 48 Port (Software)	Item5	20	Full Conversion	INR							0.00	0.00	INR Zero Only
6.01	L2 Access Switch 48 Port (Warranty)	Item6	20	Full Conversion	INR							0.00	0.00	INR Zero Only
7.01	L2 Access Switch 24 Port (Hardware)	Item7	17	Full Conversion	INR							0.00	0.00	INR Zero Only
8.01	L2 Access Switch 24 Port (Software)	Item8	17	Full Conversion	INR							0.00	0.00	INR Zero Only
9.01	L2 Access Switch 24 Port (Warranty)	Item9	17	Full Conversion	INR							0.00	0.00	INR Zero Only
10.01	Indoor Access Point	Item10	165	Full	INR							0.00	0.00	INR Zero Only

	(Hardware)			Conversion										
11.01	Indoor Access Point (Software)	Item11	165	Full Conversion	INR							0.00	0.00	INR Zero Only
12.01	Indoor Access Point (Warranty)	Item12	165	Full Conversion	INR							0.00	0.00	INR Zero Only
13.01	Outdoor Access Point (Hardware)	Item13	10	Full Conversion	INR							0.00	0.00	INR Zero Only
14.01	Outdoor Access Point (Software)	Item14	10	Full Conversion	INR							0.00	0.00	INR Zero Only
15.01	Outdoor Access Point (Warranty)	Item15	10	Full Conversion	INR							0.00	0.00	INR Zero Only
2	Passive Components													
16.01	Cat 6 4 Pair Cable	Item16	10000	Full Conversion	INR							0.00	0.00	INR Zero Only
17.01	Cat 6 Connector Jack	Item17	250	Full Conversion	INR							0.00	0.00	INR Zero Only
18.01	Wall plates / Face Plates	Item18	200	Full Conversion	INR							0.00	0.00	INR Zero Only
19.01	24 Port loaded Patch/ Jack Panel 1U Height	Item19	20	Full Conversion	INR							0.00	0.00	INR Zero Only
20.01	Cat 6 Patch cord	Item20	1500	Full Conversion	INR							0.00	0.00	INR Zero Only
21.01	12 Core Optical Fiber Cable Armored Single-Mode OS2	Item21	1800	Full Conversion	INR							0.00	0.00	INR Zero Only
22.01	24 Core Optical Fiber Cable Armored Single-Mode OS2	Item22	300	Full Conversion	INR							0.00	0.00	INR Zero Only
23.01	Single Mode Pigtail	Item23	300	Full Conversion	INR							0.00	0.00	INR Zero Only
24.01	24 Port Rack Mount Fiber Panel	Item24	25	Full Conversion	INR							0.00	0.00	INR Zero Only
25.01	Optical Fibre Adapter Plates	Item25	25	Full Conversion	INR							0.00	0.00	INR Zero Only
26.01	SC-LC Single Mode OFC Patch Cords 9/125 Micron	Item26	70	Full Conversion	INR							0.00	0.00	INR Zero Only
27.01	12 U Racks	Item27	22	Full Conversion	INR							0.00	0.00	INR Zero Only
28.01	Any other item required (give suitable justification and enclose the details in a separate sheet, in the same format)	Item28	1	Full Conversion	INR							0.00	0.00	INR Zero Only
3	Service													
29.01	Laying of Indoor UTP Cable with PVC Conduit/Casing/Capping/Cable Tray	Item29	3000	Full Conversion	INR							0.00	0.00	INR Zero Only

30.01	Fixing and Termination of Jack Panel	Item30	1000	Full Conversion	INR							0.00	0.00	INR Zero Only
31.01	I/O Termination and Face Plate fitting, Ferrulling, Pantascan Testing & Labelling at both end	Item31	1000	Full Conversion	INR							0.00	0.00	INR Zero Only
32.01	Installation of 9/12/15/27/42U Rack including cable dressing	Item32	30	Full Conversion	INR							0.00	0.00	INR Zero Only
33.01	Laying of 25 mm PVC Conduit/ Casing Capping for UTP/OFC	Item33	5000	Full Conversion	INR							0.00	0.00	INR Zero Only
34.01	Laying of 12/24 Core OFC through HDPE/PVC Conduit/Casing/capping/cable Tray	Item34	5000	Full Conversion	INR							0.00	0.00	INR Zero Only
35.01	HDPE Pipe Laying	Item35	2000	Full Conversion	INR							0.00	0.00	INR Zero Only
36.01	Manual Digging, in soft/Hard Soil/& Refilling	Item36	200	Full Conversion	INR							0.00	0.00	INR Zero Only
37.01	Supply, Installation, Configurations (and reconfigurations, updates and modifications), integration, commissioning and operations starting from go live and till the end of contract period (Complete Network)	Item37	1	Full Conversion	INR							0.00	0.00	INR Zero Only
38.01	Any other item required (give suitable justification and enclose the details in a separate sheet, in the same format)	Item38	1	Full Conversion	INR							0.00	0.00	INR Zero Only
4	FMS													
39.01	Project Implementation and Coordination Team	Item 39	1	Full Conversion	INR							0.00	0.00	INR Zero Only
5	Optional (It will not be considered for determining the L1 bidder.)													
40.01	Wireless LAN Controller (Hardware)	Item40	1	Full Conversion	INR							0.00	0.00	INR Zero Only

40.02	Wireless LAN Controller (Software)	Item41	1	Full Conversion	INR						0.00	0.00	INR Zero Only
40.03	Wireless LAN Controller (Warranty)	Item42	1	Full Conversion	INR						0.00	0.00	INR Zero Only
Total in Figures											0.00	0.00	INR,USD,JPY, EUR Zero Only
Quoted Rate in Words		INR,USD,JPY,EUR Zero Only											

(To be opened only after Essential Pre-Bid Criteria evaluation and Technical Bid Evaluation)

1. Bidder needs to provision necessary Spares for each category.
2. Bidder needs to provision minimum Campus LAN Installation and Operations Staff in the Campus for managing day to day call activities / troubleshooting.
3. All active devices and hardware items MUST be quoted with 3 Years comprehensive warranty and direct OEM 24x7 Technical Assistance Call (TAC) support (NBD).
4. All the building switches (Distribution and Access) MUST have redundant fibre connectivity to provide high availability.
5. Minimum fibre uplink back bone should be as follows (implement, as and where required):
 - Distribution to Access Switches Uplinks - 2 x 1G SFP

NOTE : The decision of the Director, IIT (BHU) will be final and binding to all bidders.

===== END OF DOCUMENT =====