NATIONAL INSTITUTE OF TECHNOLOGY KARNATAKA, SURATHKAL

POST-SRINIVASNAGAR, MANGALURU – 575 025 (D K)
CENTRAL COMPUTER CENTRE

Phone: (0824) 2474000.
E-mail:pic.ccc@nitk.edu.in

Fax:(0824) 2474033
Website: http://www.nitk.ac.in

TENDER DOCUMENT

Tender Notification No: NITK/CCC-FM/2024-25/DOC4R   Date: 25-02-2025

Name of Goods/Service	**Facility Management**
The estimated amount put to Tender	₹43,20,000/-(Including GST) (Refer Section 1B,37)
EMD Amount (2% of estimated amount)	₹86,400/—
Time for Takeover	**Immediately after the issue of Work Order pre-bid**
Date, Time & Venue of Pre-Bid Meeting	Not Applicable
Bid Document Download Start Date	**26-02-2025**
Clarification Start Date	**26-02-2025**
Clarification End Date	**04-03-2025**
Online Bid Submission Start Date	**26-02-2025**
Online Bid Submission End Date	**12-03-2025**
Address for Submission of Tender	https://eprocure.gov.in/
Date of opening technical bid	**13-03-2025**
Contact Details of Buyer	Professor-In-Charge, C.C.C., N.I.T.K. Surathkal Srinivasnagar-575 025. Ph: 0824-2473083
Purchase officer Name and Contact (Related to purchase inquiry)	Superintendent (purchase) Phone: +91-824-2473014,3114 Email: supdt-purchase@nitk.edu.in

Tender Notification No: NITK/CCC-FM/2024-25/DOC4R   Date: 25-02-2025

<u>NOTICE INVITING e-TENDER (e-NIT)</u>

The National Institute of Technology Karnataka, Surathkal (in short – NITK, Surathkal) is an Institute of National Importance under Ministry of Education, Govt of India imparting Technical Education and engaged in Research Activities.

Online Tenders (https://eprocure.gov.in/) are invited for the following items/services in **two cover systems** (i.e., Technical bid and financial bid) subject to the following terms and conditions, from the reputed bidders / manufacturers or its authorized dealers so as to reach this office on or before scheduled date and time**.** The tender (Technical bid) will be opened online on the due date as mentioned. Bidders can verify their bid status through the online portal https://eprocure.gov.in/. The financial bid of only such bidders whose technical bid is accepted shall be opened on the same day or later pre-informed date.

Name of Goods/Service	**Facility Management**
Estimated Cost	₹43,20,000/- (Including GST) (Refer Section 1B,37)
EMD Amount (2% of estimated amount)	₹86,400/-
Time to takeover (after Placing Purchase Order)	**Immediately after the issue of Work Order**
Date, Time & Venue of Pre-Bid Meeting	Not Applicable
Bid Document Download Start Date	**26-02-2025**
Clarification Start Date	**26-02-2025**
Clarification End Date	**04-03-2025**
Online Bid Submission Start Date	**26-02-2025**
Online Bid Submission End Date	**12-03-2025**
Address for Submission of Tender	https://eprocure.gov.in/
Date of opening technical bid	**13-03-2025**
Contact Details of Buyer	Professor-In-Charge, C.C.C., N.I.T.K. Surathkal Post Srinivasnagar-575 025. Ph: 0824-2473083

Sd/-
HOD
Seal & Signature

<p style="text-align: center;">**SECTION 1 A: Instructions for Online Bid Submission**</p>

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 submit their bids online on the CPP Portal.

More information useful for submitting online bids on the CPP Portal may be obtained at: https://eprocure.gov.in/eprocure/app.

REGISTRATION

1) Bidders are required to enroll on the e-Procurement module of the Central Public Procurement Portal (URL: https://eprocure.gov.in/eprocure/app) by clicking on the link "**Online bidder Enrollment**" on the CPP Portal which 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 addresses 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 / 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 DSC's 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 / e-Token.

SEARCHING FOR TENDER DOCUMENTS

1) There are various search options built-in 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 / email 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.

PREPARATION OF BIDS

1) Bidders 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 documents that need to be submitted. Any deviations from these may lead to the 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/JPG formats. Bid documents may be scanned with 100 dpi with the black and white option which helps in reducing the size of the scanned document.

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 the "My Space" or ''Other Important Documents'' 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 the bid submission process.

Note: My Documents space is only a repository given to the Bidders to ease the uploading process. If Bidder has uploaded his Documents in the My Documents space, this does not automatically ensure these Documents being part of the Technical Bid.

SUBMISSION OF BIDS
1. Bidders should log into the site well in advance for bid submission so that they can upload the bid in time i.e. on or before the bid submission time. Bidders 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 "online" to pay the tender fee / EMD as applicable and enter details of the instrument.

4. Bidders are requested to note that they should necessarily submit their financial bids in the format provided and no other format is acceptable. If the price bid has been given as a standard BoQ format with the tender document, then the same is to be downloaded and to be filled by all

the bidders. 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 the 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, the 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. Any bid document that is uploaded to the server is subjected to symmetric encryption using a system-generated symmetric key. Further, this key is subjected to asymmetric encryption using buyers/bid openers' public keys. Overall, the uploaded tender documents become readable only after the tender opening by the authorized bid openers.

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 (i.e. after Clicking "Freeze Bid Submission" in the portal), 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. The bid summary has to be printed and kept as an acknowledgment of the submission of the bid. This acknowledgment may be used as an entry pass for any bid opening meetings.

10. The off-line tender shall not be accepted and no request in this regard shall be entertained whatsoever.

11. All entries in the tender should be entered in online Technical & Commercial Formats without any ambiguity.

12. Any order resulting from this e-tender shall be governed by the terms and conditions mentioned therein.

13. No deviation from the technical and commercial terms & conditions are allowed.

14. The tender inviting authority has the right to cancel this e-tender or extend the due date of receipt of the bid(s).

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.

SECTION 1B: INSTRUCTION TO BIDDER (ITB)

1. **The bid should be submitted in two covers System-Technical Bid and Financial Bid** through https://eprocure.gov.in/

2. **Technical Bid: Documents related to the Technical Bid** should be submitted in PDF format through the E-Tendering portal https://eprocure.gov.in/.

3. **The Technical Bid should contain the following documents:**

   a) Compliance statement of specifications as per **Annexure - 'A'.**

   b) License certificate for manufacture /supply of the item & Factory license

   c) Agreements/Purchase Orders/Completion certificates if any, for similar items from other Universities, Institutes, and Government Department/Undertakings/Public sectors the details of such supplies for the preceding three years should be given together with the prices eventually or finally paid with contact details of persons as per **Annexure – 'B'.**

   d) List of Owner/partners of the firm and their contact numbers (Bidder Information)

   e) Declaration of abandoned or suspended any awarded service & Blacklist Certificate. **Annexure 'C'**

   f) Integrity Pact (for procurements above Rs1.0 Crore (Rs10.0 Million). **Annexure 'D'**

   g) Copy of GST certificate & PAN No.

   h) Undertaking that the successful BIDDER agrees to give a Performance Security amounting to 3% of the purchase order value in favor of "The Director, NITK Surathkal".

   i) Bidder has to be a profit making organization in each of the last 3 years. The bidder's sales turnover in terms of earning from Design, Supply, Integration, Operation & Maintenance or Consultancy in IT Systems, Networking Solutions & related Services within India should be at least Rs.1 Crore or above in each of the last three financial years. Extract of the audited balance sheet for the last three years is required to be submitted with the technical bid with the relevant information highlighted.

   j) Duly filled in the checklist should be submitted along with the Technical Bid.

k) The contract form given in Section 5 needs to be submitted.

l) EMD must be in the form of Bank Guarantee **Annexure-J** (Fixed Deposit Receipt/Insurance surety bonds/DD/e-Payment mode (through Credit/Debit cards / Net Banking). It will be valid for 180 days from the date of opening of the tender. In case of EMD payment made through E-Payment, UTR Number with details should be uploaded. The firm registered with MSME/NSIC as per MSME procurement policy order 2012 will be exempted from submission of EMD. Intended parties will have to give proof of registration along with their tender. EMD of the unsuccessful bidders shall be refunded without any interest at the earliest after finalization of the purchase of the concerned item.

i) The EMD will be returned to the BIDDERs(s) whose offer is not accepted by NITK within one
month from the date of the placing of the purchase order(s) on the selected BIDDER(s). In the case of the BIDDER(s) whose offer is accepted the EMD will be returned on submission of Performance Security in the form of Bank Guarantee (BG). However, if the return of EMD is delayed for any reason, no interest/penalty shall be payable to the Bidders.

ii) The successful BIDDER, on the award of contract/order, must send the contract/order acceptance in writing, within 15 days of award of contract/order failing which the EMD will be forfeited.

iii) The EMD shall be forfeited in case a successful BIDDER fails to furnish the Performance Security.

iv) Bidder should prepare the EMD as per the instructions specified in the tender document. The original EMD should be posted/couriered/given in person to the concerned official, latest by the last date of bid submission as specified in the tender documents. The details of the BG/DD/FD/any other accepted instrument, physically sent, should tally with the details available in the scanned copy and the data entered during bid submission time. Otherwise, the uploaded bid will be rejected.

m) The bidder needs to comply with restrictions under rule No 144 (xi) of GFR (General Financial Rules) 2017 and the clause pertaining to Public Procurement Division Order (Public Procurement no 1,2 & 3 vide ref. F.No.6/18/2019-PPD dated 23.07.2020 and 24.07.2020 of Dept of Expenditure (DOE), Ministry of Finance). In this Connection Bidder has to submit Self Certification (as per Annexure G or H), depending on the status of the bidder.

n) Unpriced copy of the financial bid with terms and conditions.

o) Declaration that all items specified in the bid for the Rate for Bill of Materials (RFBOM) and AMC are included and the specifications are matching. Please note that any violation to this will result in bid-rejection.

p) Declaration that the bidder agrees to the scope of service mentioned in this tender.

q) Proof that the bidder has 5 years experience

r) Proof that the bidder is certified ISO 9001

s) Proof for 3 works not less than Rs 15 lakhs within the last two years

t) Licence certificate for supplying the goods.

u) List of Owner/partners of the firm and their contact numbers

v) List of customers with contact details: Reference Letter /Phone Number / Contact address of three places or more where you have carried out similar work (Networking projects only).

4. **Financial bid:** The bidders should submit their financial bid as per the format given in Section 4 (A standard BoQ format has been provided with the tender document in the form of an Excel sheet) of the Notice Inviting Tender in the online bid through the e-Tendering portal https://eprocure.gov.in/.After evaluation of technical bid, the technically successful bidder shall be intimated to witness the opening of their financial bid along with the date, time and venue through email. The financial bid of only those bidders will be opened who are declared "Technically Successful or Technically Responsive".

5. **Bid Evaluation:**

On the due date, the Technical bids will be opened and referred to the Purchase Committee which is duly constituted by the Director, NITK. The committee will go through the technical aspects of the tender and recommend shortlisted firms. The recommendation of the committee is final and binding on all the parties. The committee may visit the manufacturing site to assess the capabilities to manufacture the tendered items as per the specifications. In case of any remarks/default noted, the Company will be debarred from competing for bids in our esteemed Institute for a period of one year from the date of occurrence of such breach.

6. **Quoting of Price(s**):

a. The Indian bidder should quote firm prices in the Indian rupee only unless otherwise specified elsewhere in this tender. Prices quoted in any other currency shall not be considered.

7. The Bid will be accepted only from the actual firm bidding. Bids not complying with these conditions are liable to be rejected and EMD forfeited.

8. **For any item liable to be supplied under the Rate for Bill of Materials (RFBOM), the Institute reserves the right to visit the factory before or after the issue of supply order to satisfy itself regarding the quality of production. In case of any remarks /default noted,** the Company will be debarred from competing for bids in our esteemed Institute for a period of one year from the date of occurrence of such breach.

9. **For any item liable to be supplied under the Rate for Bill of Materials (RFBOM), the item to be used must be strictly according to the specification and subject to test by the Institute/concerned authorities. It must be delivered and installed in good working condition.**

10. The incomplete or conditional tender will be rejected. A bidder must bid for all items specified in the schedule. Partial bidding will be treated as incomplete and will be rejected.

11. The Institute reserves the right to cancel at any time after acceptance of the tender with a notice. The Supplier shall have no claim to any payment of compensation or otherwise whatsoever, on account of any profit or advantage which might have derived from the execution of the supply.

12. **Performance Security:** The successful bidder shall deposit performance security of 3% of the quoted price in the form of Bank Guarantee (**ANNEXURE -F**) / Demand Draft / Fixed Deposit Receipt of any scheduled bank drawn in favour of **The Director, NITK Surathkal, Mangaluru** payable at Mangaluru. In case the bidder fails to deposit the said Performance Security within the stipulated period, including the extended period if any, the Earnest Money Deposited by the bidder shall be forfeited automatically without any notice. Please note the following points:

    a) **Successful bidder should submit performance Security as prescribed above to the purchase   Section,   NITK   Surathkal, on or before 30 days from the date of issue of order acknowledgment**.

    b) Performance Security shall be for the due and faithful performance of the contract and shall remain binding, notwithstanding such variations, alterations for extensions of time

as may be made, given, conceded, or agreed to between the successful bidder and the purchaser under the terms and conditions of acceptance to tender.

    c) The successful bidder is entirely responsible for the due performance of the contract in all respects according to the terms and conditions of the tender.

    d) The validity of the Performance Security must cover the tenure of the Service Level Agreement plus two months

13. **The validity of bids:** The rate quoted should be valid for the tenure of the Service Level Agreement. No claim for escalation of the rate will be considered after opening the Tender. The bid validity date will start from the last date of bid submission (Including date corrigendum)

14. **Warranty/Guarantee & On-site skill support:** For the items liable to be supplied under the Rate for Bill of Materials (RFBOM), on-site comprehensive warranty will be effective from the date of successful installation and commissioning. The OEMs/Authorized Distributors and Dealers must attach a certificate of sales and service facilities, escalation support for on-call service or station engineer, etc.

15. **Clarification of Tender Document:** Through email or the CPPP (eProcurement) portal.

16. **Amendment of Tender document:** At any time before the last date for receipt of bids, Institute may for any reason, whether at its initiative or in response to a clarification requested by a prospective bidder, modify the Tender document by an amendment. Further, the Institute may at its discretion extend the last date for the receipt of bids.

17. The bids shall be written in the English language and any information printed in another language shall be accompanied by an English translation, in which case for the purpose of the interpretation of the bid, the English translation shall govern.

18. The Institute reserves the right of accepting any bid other than the lowest or even rejecting all the bids. The decision of the Purchase Committee is final in all matters of tender and purchase.

19. **Cancellation of Tender:** Notwithstanding anything specified in this tender document, NITK Surathkal in its sole discretion, unconditionally and without having to assign any reasons, reserves the rights:

    a) To accept OR reject the lowest tender or any other tender or all the tenders.

    b) To accept any tender in full or in part.

    c) To reject the tender offer not conforming to the terms of the tender.

d) To give purchase preference to Public Sector undertakings when applicable as per Govt. Policy/ Guidelines.

20. **Terms of Payment:**

    a. The Facility Management Payment will be quarterly in arrears subject to good performance feedback.

    b. Payment shall be made by Cheque or such other mode/electronic fund transfer offered by the Bank. NITK, Surathkal will not pay advance payment to the party. Any request for Advance payment will be rejected summarily. In case it is necessary, the advance payment will be paid strictly against Bank Guarantee only.

    c. Payment will be made by Standard Payment terms and conditions of NITK, Surathkal as per tender document only. Any request for a change in payment terms and conditions will not be accepted.

    d. If the above conditions are not acceptable then tender will be rejected.

21. If there are varying or conflicting provisions made in any one document forming part of the contract, the Accepting Authority shall be the deciding authority with regard to the intention of the document and his decision shall be final and binding on the bidder.

22. The rate quoted by the bidder **shall be firm throughout the contract** period and there shall be no revision of the rates for any reasons whatsoever. It should be clearly understood that any claim for changes will not be entertained in any case once the bids are opened.

23. **One bid per bidder**: Each bidder shall submit only one bid either by himself or by representing a firm.

24. **Cost of bid**: The bidder shall bear all costs associated with the preparation and submission of his bid. The Institute in no case shall be responsible or liable for those costs.

25. The bidder shall not make or cause any alteration, erasure, or obliteration to the text of the tender document.

26. The Institute will declare a bidder ineligible, either indefinitely or for a specified period of time, at the sole discretion of the Institute, for the award of contract/ participating in any other tender, if at any time the Institute determines that he has furnished false information/ engaged in corrupt or fraudulent practices.

27. If any overpayment is detected as a result of the post-payment audit, it shall be recovered by the Institute from the Supplier out of his Performance Security.

28. **Determination of successful bidder**: The technically qualified bidder whose offer is evaluated as the **lowest total bid** shall be the successful bidder subject to its meeting the statutory requirements.

29. **Price variation:** The rate quoted by the bidder shall be firm throughout the contract period. No price variation clause applies to this contract.

30. <u>CANVASSING:</u>

    a) Canvassing in connection with tenders is strictly prohibited and the Tenders submitted by the Tenderers who resort to canvassing shall be liable to rejection.

    b) Subject to the provisions concerning clarification of Bids, no Bidder shall contact the purchase committee on any matter relating to its bid from the time of the bid opening up to the time that the contract is awarded.

    c) Any effort by the Bidder or Bidder's representative however described to influence the purchase committee in any way concerning scrutiny, consideration, evaluation of the Bid(s) or decision concerning award of contract shall entail rejection of Bid and action against the bidder as deemed fit.

    d) The purchase committee will deal with the Bidder on a Principal basis, without involvement in any manner in India or abroad of any agent or consultant or associate or another person howsoever described.

31. **Legal Matter:** All Domestic and International disputes are subject to Mangaluru Jurisdiction only.

32. **Pre-Bid Conference:** Not Applicable

33. Estimated price put up in the tender is inclusive of all.

34. **Abnormally quoted low bid will be liable for rejection as per the OM No.F.12/17/2019-PPD of Department of Expenditure, Ministry of Finance dated 6th February 2020.**

Disclaimer *Bidders are advised to exercise caution and not respond to any unknown calls, emails, or embedded links requesting payment for participating in the tender or for any other purpose. Please note that NITK Surathkal never asks for any tender fee for participation in tenders or bids.*

SECTION 1 C: eReverse (Forward) Auction Instructions for Bidders

1.0 Tender Cum Auction is a combination of Tender Followed by Auction (Reverse / Forward Auction). It is also called as eRA.

2.0 In eRA, Tendering process will be followed as per the instructions given in NIT/Tender Documents. Subsequently, Reverse (or Forward) Auction as the case may be, will be conducted amongst techno– commercially qualified / approved bidders after Opening of Financial/Price Bids' online. The Reverse (or Forward) Auction will be normally initiated after Opening of Price Bids. There will be no participation fees for the Auction.

3.0 Only such bidders - who have been found techno-commercially qualified as per requirements of the tender will be permitted to participate in the Reverse (Forward) Auction.

4.0 After opening of the price (financial) bids and System displays L1 (or H1) price based on either overall basis or item wise/lot basis automatically. Using this system provided price, which would be auction start price (can be changed, if required), the procuring entity will create Reverse (Forward) Auction and publish the same.

5.0 The Techno-commercially qualified bidders will receive Auction information through SMS & email. The participating bidders get an opportunity to revise their prices (reduce in case of Reverse Auction and increase in case of Forward Auction). It allows bidders multiple opportunities to offer a price.

6.0 Procedure in submission of bids by the bidders during Reverse/Forward auction online.

6.1 Bidders shall login using their login ID & Password and then using DSC.

6.2 Click on the My Auctions button given in the left side of page, to view Action details for which Techno- Commercially qualified.

6.3 For participating in Live Auction,

- Click on Live Auction Button.
- Click on the View button to participate in interested Auction.
- There is a List of qualified Lots in which Bidder can participate against selected Auction. Click on Hammer Icon to participate in the respective lot.
- On clicking Hammer Icon, system will show Start price, Decremental (or incremental) price and Current price against lot. Current Price is appears as Blank in case no bidder has offered price.
- Enter your Price in 'My Auction Price' in multiples of decremental (incremental) value up to above (below) Max Seal % value, and then sign it digitally by clicking on Sign Icon and Click on submit button.
- System will show your Latest Value / Price Quoted and system will also show Least Amount/ Rate which any Bidder would have quoted.

7.0 Terms and conditions for Reverse (Forward)Auction are as follows:

7.1 Reverse (Forward) Auction will be initiated after opening of price bids. The schedule of Reverse (Forward) Auction shall be intimated to the bidders by the system through their registered email and SMS to mobile number.

7.2 Only those bidders whose price bid has been opened by the Tender Inviting Authority shall be eligible to participate in Reverse (Forward) process. However, in case of in Reverse Auction process, the H1 bidder whose quote is highest during tender will not be allowed to participate

as per H1 elimination policy. Similarly, in case of in Forward Auction process, the L1 bidder whose quote is lowest during tender will not be allowed to participate as per elimination policy.

7.3 Bidders are advised to read the 'Reverse (Forward) Auction terms and conditions' details of Reverse (Forward) Auction event carefully, before auction event.

7.4 Reverse (Forward) Auction can be held in two ways as indicated in the tender either on the Total overall cost of items/works or on Item wise/ Lot wise.

7.5 The 'Starting price' i.e. Start price and bid decrement (increment) price for Reverse (Forward) Auction will be decided by the Tender Inviting Authority.

7.6 Bidders shall be able to view the following on their screen along with the necessary fields during Online Reverse Auction:

7.6.1 Current Bid Price in the Auction.

7.6.2 Start Price.

7.6.3 Decrement (or Increment) value.

7.7 The bidding direction in case of Reverse Auction is downward and for Forward Auction is upward.

7.8 In case of Reverse Auction, in order to displace a standing lowest bid and to become "L1", a bidder can offer a minimum bid decrement or in multiples of decremental value up to above Max Seal %. For ex: Current price:- Rs. 49,000 Decrement value:- Rs. 1000 System Defined Maximum Seal %:- 50, in this case a bidder can quote minimum decrement amount as Rs 49,000-1000= Rs. 48,000 and maximum decrement amount is 49000-24500- 1000=23500=24000* . In case of Forward Auction, in order to displace a standing highest bid and to become "H1", a bidder can offer a minimum bid increment or in multiples of incremental value up to or below Max Seal %. For ex: Current price:- Rs. 49,000 Incremental value:- Rs. 1000 System Defined Maximum Seal %:- 50, in this case a bidder can quote minimum increment amount as Rs 49,000+1000= Rs. 50,000 and maximum increment amount as 49000+24500+1000=74500=74000* . This continues as an iterative process.

7.9 The system will not disclose the name of the L1 (H1) bidder, number of bids and names of the bidders on the portal to anybody prior to the completion of Reverse/Forward auction process.

7.10 There shall be no communication between the Tender inviting Authority and bidders and among bidders.

7.11 Bidders only see the lowest (highest) bid during Reverse (Forward) auction. At no point of time will any bidder see the name of other bidders or the prices of bidders other than the lowest bid.

7.12 After the completion of the online reverse(forward) auction, all bidders who have participated in Reverse (Forward) will see the L1(H1) price in Auction and further processing will be done by Tender Inviting Authority.

7.13 In case of no participation by techno-commercially qualified bidders in Reverse (Forward) Auction, the Tender price bids received during tender will be processed.

7.14 In case of auction on total value of items/works, the successful bidder may be required to submit a letter for price confirmation and rates of individual items/works within stipulated number of days after completion of Reverse (Forward) Auction event, besides sending the same by registered post / courier to the tender inviting authority.

7.15 Any variation between the final bid value during RA and that in the confirmatory letter forwarded will be advised to re-work and submit.

7.16 Server time shall be the basis of Start Time and Closing time for bidding and shall be binding for all.

7.17 All electronic bids submitted during the reverse(forward) auction process shall be legally binding on the bidder.

7.18 The chronologically last bid submitted by the bidder till the end of the auction will be considered as the valid price bid offered by the bidder and acceptance of the same by Tender Inviting Authority will form a binding contract between Tender Inviting Authority and the bidder for entering into a contract.

7.19 The last successful bid price quoted by bidder will be considered as valid price at any point of time during Auction.

7.20 If a bidder does not submit bid in the Reverse/forward Auction, the price quoted by them in the price bid shall be considered as the valid price of that bidder. The status of the bidder (L1, L2 etc) shall be evaluated considering either the bid price submitted in Reverse/Forward Auction or the price quoted in the price bid, whichever is lower.

7.21 In case of disruption of service at the service provider's end while the Reverse (Forward)Auction is live due to any technical snag or otherwise attributable to the system failure at the server end, Tender Inviting Authority in consultation with Application Administrator may decide to extend auction if required as per system malfunction procedure displayed in the home page of the website. In this case, the status quo of Auction will be maintained prior to failure and process would continue from that point onwards.

8.0 Post auction procedure: The Tender Inviting Authority will proceed with the Lowest (Highest) Bid in the Reverse (Forward) Auction for further processing.

9.0 Schedule for Reverse Auction: The Reverse (Forward) Auction schedule will be intimated later on through e-mail and SMS after opening the price bid.

10.0 Auction extension time: If a bidder places a bid in the last {5} minutes of closing of the Reverse Auction and if that bid gets accepted, then the auction's duration shall get extended automatically for another {10} minutes, for the entire auction from the time that bid comes in. Please note that the auto-extension will take place only if a bid comes in those last {5} minutes and if that bid gets accepted as the lowest bid. If the bid does not get accepted as the lowest bid, the auto-extension will not take place even if that bid might have come in the last {5} minutes. In case, there is no bid in the last {5} minutes of closing of Reverse Auction, the auction shall get closed automatically without any extension. However, bidders are advised not to wait till the last minute or last few seconds to enter their bid during the auto-extension period to avoid complications related with internet connectivity, network problems, system crash down, power failure, etc. The above process will continue till 10 times extension is given during Reverse Auction. All bidders, regardless of the impervious position, can submit their bid during the extension period also.

11.0 Bidding currency and unit of measurement: Bidding will be conducted in Indian Rupees as indicated in the tender.

12.0 Validity of bids: Price shall be valid for a period of defined number of months from the date of reverse auction. These shall not be subjected to any change whatsoever.

13.0 Bidders' bid will be taken as an offer to execute the work (or to award supply of the item) as per enquiry no. {....................} dt. {...........}. Bids once made by the bidder, cannot be cancelled/ withdrawn and the bidder shall be bound to execute as mentioned above at the bidder's final

bid price. Should the bidder back out and not execute the contract as per the rates quoted, action shall be initiated as per the tender terms and conditions.

14.0 The Tender Inviting Authority decision on award of contract shall be final and binding on all the Bidders.

15.0 The Tender Inviting Authority reserves the right to extend, reschedule or cancel the Reverse Auction process at any time, before ordering, without assigning any reason, with intimation to bidders.

16.0 The Tender Inviting Authority reserves the right to suspend or pause the reverse auction, if required. In such cases, as per discretion of Tender Inviting Authority, auction may be reopened.

17.0 The Tender Inviting Authority shall not have any liability to bidders for any interruption or delay in access to the site irrespective of the cause. In such cases, the decision of Tender Inviting Authority shall be binding on the bidders.

18.0 Failure of power or loss of connectivity at the premises of bidders during the Reverse (Forward) auction cannot be the cause for not participating in the reverse (forward) auction. On account of this, the time for the auction cannot be extended and the organisation is not responsible for such eventualities.

19.0 Other terms and conditions shall be as per tender.

20.0 Bidder shall not divulge Bids or any other exclusive details of the organisation to any other party. If the Bidder or any of its representatives are found to be involved in Price manipulation/ cartel formation of any kind, directly or indirectly by communicating with other bidders, action will be taken against such bidders as per banning procedure of the organisation.

21.0 Tender price bid (s) means the price bid (s) received during tendering for the items/work/services.

22.0 Auction closing price bid means the lowest (highest) online price bid received after the completion of Reverse (Forward) Auction.

23.0 All entries in the tender should be entered in online Technical & Commercial Formats without any ambiguity.

24.0 Any order resulting from this e-tender shall be governed by the terms and conditions mentioned therein.

25.0 No deviation to the technical and commercial terms & conditions are allowed.

26.0 The tender inviting authority has the right to cancel this e-tender or extend the due date of receipt of the bid(s)

SECTION 2: CONDITIONS OF CONTRACT.

1. The supplier should quote the rate for Door Delivery (FOR).

2. The Rate should be quoted in INR only.

3. Rate for Bill of Materials (RFBOM) items should be landed at NITK Surathkal at supplier/bidder's cost, and this responsibility is with the bidder.

4. No custom duty exemption certificate will be provided from the institute.

5. With regard to items to be purchased on Rate for Bill of Materials (RFBOM), the rate quoted should be on a per-unit basis. Taxes and other charges should be quoted separately, considering exemptions, if any.

6. The rate quoted should be inclusive of Testing, Commissioning and Installation of Equipment and Training. (for items covered under Rate for Bill of Materials (RFBOM))

7. **Payment:** No advance payment will be made. The Facility Management Payment will be made quarterly in arrears subject to good performance feedback.

8. Guarantee and Warranty periods should be specified for complete period conforming to Section 3 of this tender document.

9. The period required for the supply and installation of Equipment should be specified conforming to Section 3 of this tender document.

10. In case of dispute, the matter will be subject to Mangalore Jurisdiction only.

Bidder Eligibility Criteria

To be eligible, a bidder has to meet the following criteria.

1. The bidder shall have experience of at least 5 years in the field of Information Technology. This shall include specific experience in any or all of Design, Engineering, Integration, Operations, Maintenance & Consultancy in IT Networking independently, or as part of a large IT Infrastructure Project.

2. The bidder shall have adopted appropriate quality systems (ISO 9001) and adhere to standards and best practices. The bidder / employees of the bidder should have appropriate expertise in design, engineering, integration, operations and management of IT Information Systems / Networking Infrastructure

3. The bidder shall have executed at least 3 similar works, each costing not less than Rs.30 lakhs each, during the last 2 years, in the Maintenance of Campus Wide-Area-Networks and Network Operating Centers as part of a IT Infrastructure Project belonging to Government or large Public Sector/Private Sector Organizations. In addition to these, the bidder's experience in executing similar works costing about 30 lakhs may be given as a list with details.

4. Bidder has to be a profit making organization in each of the last 3 years. The bidder's sales turn over in terms of earning from Design, Supply, Integration, Operation & Maintenance or

Consultancy in IT Systems, Networking Solutions & related Services within India should be at least Rs.1 Crore or above in each of the last three financial years. Extract of the audited balance sheet for the last three years is required to submitted with the technical bid with the relevant information highlighted.

5. The bidder should be capable of executing projects involving Networking, Network troubleshooting and Network expansion.

6. A certificate is to be submitted by the bidder that they have not been black listed by any Govt./Semi Govt. organization or department.

Certificate

(*To be provided by the bidder in the business letter head and/or with business seal*)

This is to certify that we are not blacklisted by any of the Central Government Department and any State Department / PSU / Banks & Financial institutions on account of corrupt or fraudulent practices. Further, we understand that such blacklisting if any discovered in the future shall be a disqualification and shall result in the tender being rejected irrespective of the processing status of the tenders.

Signature of the Bidder:
Name and Designation:
Business Address:
Seal of the Bidder's Firm
Place:
Date :

7. The bidder will have to submit GST details along with the technical bid.

8. For the items being supplied in the Rate for Bill of Materials (RFBOM) and AMC replacements (if any) the bidder should be an authorized partner of the manufacturer of networking products and should have adequate facilities, manpower and staff for installation, testing, commissioning and after sales service.

9. The bidder will have to arrange for all the testing equipment & tools required for installation, testing & maintenance etc.

10. The bidder should supply a list of customers where they have carried out networking projects of this nature. Documentary proof in this regard should be submitted

General Conditions:

1. The Tenderer shall upload the valid certificate copies of documents as mentioned in Annexure "A" failing which the tender will be rejected. If necessary, the bidder shall produce all the original documents for verification.

2. Blacklisted contractors in State / Central Govt. Departments, Central / State PSUs, Autonomous Organizations/ Boards etc., are not eligible to quote, if found such tenders will be rejected.

3. The successful Bidder shall execute an SLA within 15 days from the date of Receipt of intimation. The Tender Document and SLA will form part and parcel of the agreement, failing which the tender will deem to be get cancelled.

4. The rates quoted should be as per the financial bid only. The NITK reserves the right to accept / reject any or all the tenders without assigning any reasons.
5. Conditional tenders will not be accepted and are liable for rejection.
6. Bidders who meet the specified minimum qualifying criteria shall be eligible.
7. Even though the Bidders meet the above criteria, they are subject to be disqualified if they have:
   a. Made misleading or false representations in the forms, statements and attachments submitted in proof of the qualification requirements; and/or
   b. Record of poor performance such as abandoning the works, not properly completed the contract, inordinate delays in completion, litigation history, or financial failures etc.
8. The Tender document can be downloaded from Institute web site: https://www.nitk.ac.in/ or e-procurement website: https://eprocure.gov.in/. It may be noted that all subsequent notifications, changes and amendments/corrigendums on the project/document would be posted only on the same website.
9. The bidders should go through the Tender Document and submit online response through e-procurement portal only.
10. Tenders shall remain valid for a period not less than 180 days after the deadline date for tender submission.
11. The successful Bidder, after placement of order, is required to enter into a Service Level Agreement with NITK
12. The decision of NITK regarding evaluation of technical bids and the evaluation of financial bids will be final and binding. Any representation from bidders in this regard will not be entertained.
13. Bids of each bidder should comply with all terms and conditions, all documents called for in technical bid should be furnished with the quote. In case of any shortfall in documents the bids will be rejected without any further correspondence in that regard.
14. A copy of this tender document must be attached with the technical bid confirming that all the contents and terms & conditions of this tender document are acceptable to the bidder. In the absence of uploading a duly signed copy of the tender document, the technical bid will be treated as non responsive and liable for rejection
15. Any kind of amendment to this tender will be part of this tender. Amendments, if any, will be published on the website of NITK (www.nitk.ac.in) only
16. Jurisdiction: All matters pertaining to this shall be subject to the jurisdiction of the courts in Mangalore only

4. Schedule of Requirements, Specifications and Allied Details

Item(s) Name to be Procured	Facility Management
Type	Service
Brief Specifications of the Item(s)	Please see the details listed below
Quantity	As specified in the details listed below
Any other details/requirement	As specified in the details listed below
Period required	Yearwise One year with extension upto five years subject to good performance and / or changes in the inventory of the significant items in the Rate for Bill of Materials (RFBOM)
Delivery Schedule expected after release of Purchase/Work order (in Weeks)	Immediately after the issue of work order
EMD (in Rupees)	2% *of Estimated cost* (Rs 86,400/ −)
Performance Security to be given by Successful Bidder after release of Purchase Order (in Rupees)	3% of the Total contract value in the Purchase Order

1.1 Terms of service

The company has to enter into a Service Level Agreement (SLA) with NITK on a stamp paper (for value as decided by the Institute) for the maintenance of NITK Campus Network. This will be at the yearly charges, inclusive of taxes and governmental levies applicable or becomes applicable later due to or under any law.

1.2 Scope of Service – SLA

 Service Level Agreement Format
(Subject to approval of competent authorities)

Preamble: The company has to enter into a Service Level Agreement (SLA) with NITK on a stamp paper (for value as decided by the Institute) for the maintenance of NITK Campus Network. This will be on the yearly charges, inclusive of taxes and governmental levies applicable or becomes applicable later due to or under any law.

Header Service Level Agreement of IT Infrastructural Facilities Management between National Institute of Technology Karnataka, Surathkal (Srinivasnagar PO, Mangalore, Karnataka, 575025) and M/s XYZ for the period [DATE] to [DATE]
References:
Purchase Order No:

Financial Bid No:

Amount : Rs   (including GST) based on the annexed list of equipments and scope mentioned elsewhere.

Additions / deletions into / from FM list can change the total amount as agreed. Signed on this DD day of MM, YYYY

Authorised Signatory National Institute of Technology Karnataka, Surathkal (Professor-in-charge, Central Computer Centre)	Authorised Signatory of M/s XYZ

Agreement This agreement is made between National Institute of Technology Karnataka, Surathkal (P. O. Srinivasnagar, Mangalore, Karnataka, 575025) (hereinafter referred to as the Customer) and M/s XYZ (hereinafter referred to as the Facility Manager)

Whereas the customer is desirous of entering into a Facility Management agreement for its infrastructural facility and services described elsewhere in this document, with the Facility Manager.

The Facility Manager is desirous of entering into this Service Level Agreement providing such services under the terms and conditions as per this agreement.

The Facility Manager agrees to maintain the infrastructural facility listed herein as comprehensive on-site maintenance and perform such other services related to the facility management in accordance with the provisions laid out herein.

This will be on the yearly charges plus the taxes and the governmental levies applicable or becomes applicable later due to or under any law.

The maintenance charges are payable quarterly in arrears by the customer upon submission of all the related documents and the bill by the Facility Manager.

Additions or deletions of infrastructural facilities are to be made on a pro-rata basis, based on the individual costs annexed and provisions mentioned. This shall include the vendor management for Warranty period maintenance for newly acquired devices (L1–L7) as well.

SCOPE OF WORK / TERMS OF SERVICE

Terms of Service The Facility Manager must provide the following services and enter into a Service Level Agreement with the Customer under the following terms and conditions.

1. Ensure the smooth operation of the Campus Network on a 24x7 basis by acting as the single technical point of contact.

2. Accept the Layer1–Layer7 devices of our network (as per the enclosed list) under AMC and provide technical and configuration support wherever necessary.

3. Test the network periodically so that non–functional areas, if any, are detected and functioning is restored without any inordinate delay.

4. Coordinate troubleshooting of the wired network, wireless network, Fiber to the Home (FTTH) connections to the Campus and the Internet connections of Customer's Campus Network with National Knowledge Network and any other service providers.

5. The Facility Manager must liaise with the following personnel:

    a) Student network coordinators of each hostel

    b) UPS maintainers for the UPS systems

    c) Switch/network device maintainers for any switches/network devices that are under warranty or AMC already.

    d) Central Computer Centre for any access related problems, IP allocations and Network Management and alterations, if any, and all other technical concerns.

6. Coordinate the warranty period maintenance (vendor management services for the active devices, passive network (copper and fiber) wherever these are under warranty.

    Please note that for the devices under warranty, the first level of service is to be provided by the Facility Manager along with the intimation to the appropriate vendor / warranty maintaining agency. Subsequently, the calls may be routed to the appropriate vendor / warranty maintaining agency. This data must be collected and periodically updated by the Facility Manager while taking over the Facility Management.

7. The devices that are coming out of warranty are to be automatically taken into AMC unless overruled by the Customer. Hence the Facility Manager is bound by the rate of AMC for such devices as well, with appropriate back–to–back arrangement with the vendor. At the time of taking over the infrastructural facilities for Facility Management, the updated list of equipments for vendor management and comprehensive on-site maintenance shall be prepared by the Facility Manager and this shall be used as the basis of Facility Management after proper approval by the Customer's Facility Management Coordinator.

8. The Facility Manager must have an appropriate maintenance arrangement with the

respective service providers or vendors of the equipments under AMC.

9. The Facility Manager must also do the following.

   a) Take care of the operation and maintenance of the entire campus network, including places where there are no individual administrative in-charges (such as food court, etc). The competent authority will be the decision maker for the installations of new devices and cables.

   b) For any repairs related to the devices and cables within the campus network, including the supply of active devices and passive materials (copper and fiber) and providing labour thereof, the Rate for Bill of Materials (RFBOM) as per the purchase order shall apply. Further, for the items not in the RFBOM, if any, shall be coordinated for procurement by the Customer, as per the procedure in practice by the Customer. **The suggestion to carry out these activities applies to bills where the total amount does not exceed a limit. This limit will be set or adjusted by the Competent Authority of the Customer.** Network expansions and repairs, if necessary, can also be covered under this Rate for Bill of Materials (RFBOM) subject to the above conditions.

10. If any equipment becomes unserviceable or unavailable in the market, the Facility Manager should coordinate with the service provider, if any, to obtain the information about the equivalent equipment from the original manufacturer with due certification and rates applicable for the new product must be competitive in comparison with other similar products. The Professor-in-charge, CCC shall take the final decision based on the verification of the new rates prepared by the service provider.

11. The Facility Manager will be provided with a room space in CCC as their Office–in–Campus during the tenure of their contract.

12. The Facility Manager must give comprehensive on-site maintenance for the active devices and passive network (copper and fiber) wherever these are not under warranty. **Sufficient spares are to be kept by the Facility Manager for this purpose**. At least 5 nos of 48 port switches, 5 nos of 24 port switches, 4 nos of 24 port PoE switches and 2 nos. of 48 port PoE switches must be available as spares / standby at all times. These must be available for inspection by the Customer any time.

13. The Facility Manager must constitute a Help Desk to act as a nodal point to receive Telephone Calls / Emails / SMS /electronic logging from the users and coordinate all activities of the Facility Management. There should be at least three active mobile numbers, which will be published in the Customer's website for the service calls.

14. The Facility Manager must create an electronic complaint logging service and follow up. This should be a web site to log the call by anyone in NITK (intranet only). The logged call will have a severity level which should be assigned by CCC personnel (in

consultation with the logger and FM). Depending upon the severity (in the range 1-10, 10 being most severe), there will be a deadline by which the problem has to be fixed, failing which will attract a penalty as decided by the Customer.

15. Preventive maintenance shall be done on **at least** monthly basis or as often as needed.

16. One Telephone will be provided at CCC; but telephone charges for calls outside of the campus shall be at the Facility Manager's expense.

17. Unscheduled, on-demand corrective / remedial maintenance shall include parts replacement wherever necessary and applicable. Replaced parts shall be of equal or better quality and specifications and to the department/section's satisfaction. Repair / replacement shall be recommended by the Facility Manager and must be approved by competent authority when replaced, the removed parts shall remain the property of the Customer. Such incidents shall be duly recorded in triplicate (H-O-D/H-O-S, CCC and The Facility Manager) and the due action for disposing off such parts shall be the responsibility of the respective H-O-D/H-O-S.

18. Providing Site facilities, proper electrical connections (stabilized sources wherever necessary) and other environmental conditions is the responsibility of the Customer.

19. NITK Surathkal shall provide adequate working space and storage facilities for the test equipments and spares at NITK Surathkal's premises; but they will be kept at the Facility Manager's risk. These are to be in compliance with the requirements mentioned in their quote and such other agreements arrived upon while finalizing the contract by the Purchase Finalization Committee. Equipments not belonging to NITK should not be kept in NITK premises.

20. Hardware and Configuration alterations shall be duly intimated by NITK Surathkal to the Facility Manager.

21. Security of the infrastructural facility and the installed hardware components against theft or pilferage is the NITK Surathkal's responsibility. However, the Facility Manager must take adequate precautions as deemed fit to prevent pilferages. These shall be done under intimation to and approval of the Department or Section Head and the FM Coordinator. Facility Manager shall place identification tags on systems under maintenance.

22. Facility Manager shall ensure the uptime of 99%, failing which will attract a penalty to the Facility Manager. This is enforced at the discretion of NITK Surathkal and shall be equivalent to the maintenance amount for the number of days for which the unit remained not repaired or an amount as decided by NITK Surathkal depending on the inconvenience caused.

23. The Facility Manager cannot do any upward revision of the agreed rates at any time

during the period of the agreement.

24. The team must be provided with sufficient troubleshooting tools including laptops. At least two laptops must be available with the team kept in the premises of NITK Surathkal.

25. The contract period is for ONE Year, coming into force from the first date indicated in the Service Level Agreement. Continuation into the following year shall be subject to good performance in the previous year in the continuous evaluation by the constituent departments and sections and approval of the Competent Authorities of the Institute. Such continuation is, however, limited to a **maximum of FIVE years**. NITK Surathkal shall decide on when to call fresh tender, depending on the significant changes in the overall inventory of the RFBOM (Rate for Bill of Materials) items.

26. The contract may be terminated with a minimum period of notice of three months by either party. Any violation by the firm results in a penalty of forfeiture of balance amount due with 12% interest thereupon chargeable on per month basis.

27. Payment will be made quarterly in arrears by NITK Surathkal. Advance payments are not possible as per NITK Surathkal's accounting norms. Payment will be subject to the positive reports from the network users. Pending issues without satisfactory reason can result in payment being withheld.

28. The Facility Manager must provide sufficient service engineers (including Help Desk coordinators) for NITK Surathkal who are to be stationed at the premises of NITK Surathkal to cover the services on 24x7 basis throughout the year of contract. At least two highly skilled engineers and one skilled engineer must be available in each shift. Sufficient personnel are to be deployed to cover the peak demands.

29. All service engineers shall possess appropriate networking certificates. Their qualification details shall be made available to NITK Surathkal at the time of taking over and whenever such personnel are changed.

30. The service engineers must have the knowledge of troubleshooting of the network and configuration of the devices. Configuration of devices shall be done based on the best practices which will be provided by NITK at the time of taking over the network for maintenance. Kindly note that best practices may change from time to time and the devices may have to be reconfigured accordingly. They are to be stationed at the premises of NITK Surathkal. Accommodation for them if requested, will be at the expense of the Facility Manager and subject to availability and discretion of NITK Surathkal.

31. **The responsibility of handling the provisions of the Labour Act lies with the Facility Manager identified through this bidding process**. The Facility Manager must give an undertaking to NITK Surathkal that the provisions of the Labour & Employment Act

and Minimum Wages Act of Government of India are taken care of. Further, The Facility Manager shall submit a copy of the wages paid to the personnel on monthly basis during the period of contract.

32. The Facility Manager shall station only highly skilled service engineers and skilled help desk coordinators who have proper identity cards in NITK Surathkal's premises. Names, qualifications and changes, if any, of service engineers shall be duly intimated to NITK Surathkal by the Facility Manager.

33. The Facility Manager will work in coordination with the Warranty/AMC Maintainer of Computers, if any, and/or the concerned Department/Section to resolve computer or network issues in a convincing way to the users, avoiding user level inconveniences to the maximum possible extent. Communications with the users of NITK from Facility Manager shall be succinct, professional and polite always.

34. NITK Surathkal shall make the infrastructural facility available to the Facility Manager on a 24x7 basis in the Customer's premises. Whereabouts of the networks and any interdepartmental transfers (temporary or permanent) of devices will always be intimated to the Facility Manager.

35. Transportation (through vehicles/fuel allowance) within the Customer's premises for their service engineers shall be the responsibility of the Facility Manager. The service engineers have to cover the entire campus network spanning across the academic and residential buildings of the campus.

36. Additions and deletions of devices to / from the list of items under AMC are to be made on a pro-rata basis and are to be intimated to the Facility Manager and FM Coordinator, with justifications.

37. NITK Surathkal campus uses eduroam WiFi actively. Hence, the Facility Manager must ensure that any network device being proposed as a part of this tender seamlessly supports the technical features required to work with eduroam, primarily support for 802.1x authentication and dynamic VLANs. If any devices are found to be non-compliant or partially-compliant, NITK reserves the right to remove such devices from the Rate for Bill of Materials (RFBOM) contract. Besides, the Facility Manager must ensure that they have sufficient technical manpower to maintain eduroam WiFi in the NITK campus network.

Limitations of Liability: The following are not covered under this agreement

1. Any service or circumstance posing as a safety or health hazard.

2. Force Majeure applies to this SLA. However, proving the Force Majeure must be done to the satisfaction of NITK.

3. If the ownership of the infrastructural facility listed for Facility Management changes from the NITK, the obligation of the Facility Manager towards maintenance shall cease. Such infrastructural facilities shall be removed on a pro-rata basis under due intimation to H-O-D/H-O-S, CCC and the Facility Manager.

Format for Technical Bid
(The bidder must submit the bid in the general format shown below)

a) The cost must include the associated charges by considering the following:

   i) For the services of service engineers and the helpdesk coordinators.

   ii) Rate for Bill of Materials (RFBOM) devices as listed below with warranty period as specified therein.

   iii) AMC charges for the devices listed below (*Please indicate the rate individually for the AMC and RFBOM. Please note that pro–rata additions / deletions and RFBOM based purchases are expected.*)

b) GST and Other Charges (*These must be shown explicitly in percentages and/or lump sum in figures*)

c) Period for Facility Management Contract: Year wise One year with extension up to maximum of five years subject to good performance and / or changes in the inventory of the significant items in the RFBOM.

DETAILED SPECIFICATIONS

1. Items under Facility Management

Providing Service Engineers and Help Desk Coordinators in conforming with the terms and conditions mentioned elsewhere in the tender document and the bidders are expected to quote price bids for this part accordingly.

2. Devices to be covered under Rate for Bill of Materials (RFBOM)

Please give the **rate, total and tax** for all of the devices listed below in the price bid.

Table 2T

Sl.No.	Item	Qty	UoM
	List of networking products for Rate for Bill of Materials (RFBOM)		
1	CAT6A U/FTP 23 AWG solid, LSZH Sheath, 305 Mtr/Roll : Cat6 A UTP Cable 305Mtr (4 Pairs Individually Foiled Twisted Pair (U/FTP) Cable 23 AWG solid copper conductors with a frequency of 500 MHz)	1	Box

2	CAT6 UTP cable, Roll of 305m : Cat6 UTP Cable 305 Mtr (4 Pairs Unshielded Twisted Pair (UTP) Cable Conductor Metal: Solid Bare Copper. 23 AWG copper wires).	1	Box
3	CAT6 UTP RJ 45 Jack box (100 no in a box)	1	Box
4	24-port CAT6 Patch Panel, loaded, 1U	1	No.
5	24-port CAT6 Patch Panel, Unloaded, 1U	1	No.
6	24-port CAT6A Patch panel – Unloaded	1	No.
7	CAT6 I/O	1	No.
8	CAT6A I/O	1	No.
9	Face Plate – Single	1	No.
10	Face Plate – Dual	1	No.
11	Back Box For Single / Dual Face plate	1	No.
12	CAT6 UTP Patch Cord : 1 M	1	No.
13	CAT6 UTP Patch Cord : 2 M	1	No.
14	CAT6 UTP Patch Cord : 5 M	1	No.
15	CAT6A Patch Cord : 1 M	1	No.
16	CAT6A Patch Cord : 2 M	1	No.
17	CAT6A Patch Cord : 10 M	1	No.
18	Layer 3 Stackable 10GbE Switch 24 x 10GbE SFP+ Ports 2 x 100/40GbE QSFP28 Ports Dual AC PSUs loaded	1	No.
19	8 x 100/1000/2.5GBASE-T PoE ports 2 x 10G SFP+ ports L2 Managed Switch	1	No.
20	24 x 100M/1G/2.5G/5G/10GBASE-T ports 4 x 10/25G SFP28 ports Stackable Managed Switch	1	No.
21	24 x 10GBASE-T Ports, 4 x 10G/25G SFP28 L2 Managed Switch	1	No.
22	24 Port 10/100/1000 Mbps PoE + 4 x 10G Ports Managed switch	1	No.
23	24 Port 10/100/1000 Mbps + 4 x 10G Ports Managed switch	1	No.
24	48 Port 10/100/1000 Mbps PoE + 4 x 10G Ports Managed switch	1	No.
25	48 Port 10/100/1000 Mbps + 4 x 10G Ports Managed switch	1	No.
26	24 Port 10/100/1000 Mbps PoE + 4 x 10G Ports Stackable Managed switch	1	No.
27	24 Port 10/100/1000 Mbps + 4 x 10G Ports Stackable Managed switch	1	No.

28	48 Port 10/100/1000 Mbps PoE + 4 x 10G Ports Stackable Managed switch	1	No.
29	48 Port 10/100/1000 Mbps + 4 x 10G Ports Stackable Managed switch	1	No.
30	Dual-band 802.11abgn/ac/ax Wireless Access Points, 2x2:2 streams (2.4GHz/5GHz) OFDMA, MU-MIMO, support for efficient beamforming, 802.3af PoE support. Does not include power adapter or PoE injector. Must be compatible with the existing WiFi controller at NITK and with other controllers (if changed in future). OpenWiFi certified devices are preferred.	1	No.
31	Dual-band 802.11abgn/ac/ax Wireless Access Point with Multi-Gigabit Ethernet backhaul and onboard BLE/ZIgbee, 2x2:2 streams (2.4GHz/5GHz) OFDMA, MU-MIMO, support for efficient beamforming, dual ports, 802.3at PoE support. Does not include power adapter or PoE injector. Must be compatible with the existing WiFi controller at NITK and with other controllers (if changed in future). OpenWiFi certified devices are preferred.	1	No.
32	Dual-band 802.11abgn/ac/ax Wireless Access Point with Multi-Gigabit Ethernet backhaul, 4x4:4 + 2x2:2 streams, OFDMA, MU-MIMO, support for efficient beamforming, dual ports, PoH/uPoE/802.3at PoE support. Does not include power adapter or PoE injector. Must be compatible with the existing WiFi controller at NITK and with other controllers (if changed in future). OpenWiFi certified devices are preferred.	1	No.
33	Omni, outdoor access point, 802.11ax 2x2:2 streams, support for efficient beamforming, dual band concurrent. One Ethernet port, PoE input. -20ºC to 65ºC Operating Temperature. Includes mounting brackets. Does not include PoE injector. Must be compatible with the existing WiFi controller at NITK and with other controllers (if changed in future). OpenWiFi certified devices are preferred.	1	No.
34	Advance Replacement for outdoor AP, 1 Yr	1	No.
35	Associate Partner Support for AP Management License	1	No.
36	End user support	1	No.
37	Multipurpose Secure mounting bracket for Indoor Wireless Access Point. (Supports mounting to hard wall, ceiling, pole or truss, without pad-lock support)	1	No.

38	Multipurpose Secure mounting bracket for Outdoor Wireless Access Point. (Supports mounting to hard wall, ceiling, pole or truss, without pad-lock support)	1	No.
39	Virtual wireless controller license.	1	No.
40	Virtual wireless controller Support license, 1 Yr.	1	No.
41	AP management license for 1 wireless AP access point.	1	No.
42	AP management support license, 1 Yr.	1	No.
43	GPON OLT with 4 PON SFP Ports, fully loaded with modules	1	No.
44	GPON OLT with 8 PON SFP Ports, 4 GIGA Ethernet Ports, 2 GIGA SFP Ports and 2 GIGA SFP+ Ports, Fully loaded with modules	1	No.
45	GPON OLT with 16 PON SFP Ports, fully loaded with modules	1	No.
46	XPON ONU Router with 1 PON and 1 Giga Port	1	No.
47	XPON ONU Router with 1 PON and 1 Giga Port and 1 FXS port	1	No.
48	GPON/GPON ONU 300Mbps WiFi Router with 1PON, 1GE & 1FE, 1FXS Port	1	No.
49	GPON/GPON ONU 1200 Mbps WiFi Router with 1PON, 1GE & 1FE	1	No.
50	6U Wall mount Rack with standard internal size & external size with minimum of width:21" & depth : 23" with accessories (2 fan tray, cable managers-3 nos, 6 socket power strip, front glass with lock, hardware packet)	1	No.
51	9U Wall mount Rack with standard internal size & external size with minimum of width: 21" & depth : 23" with accessories (2 fan tray, cable managers-3 nos, 6 socket power strip, front glass with lock, hardware packet)	1	No.
52	12U Wall mount Rack with standard internal size & external size with minimum of width: 21" & depth : 23" with accessories (2 fan tray, cable managers-3 nos, 6 socket power strip, front glass with lock, hardware packet)	1	No.
53	15U Wall mount Rack with standard internal size & external size with minimum of width:21" & depth : 23" with accessories (2 fan tray, cable managers-3 nos, 6 socket power strip, front glass with lock, hardware packet)	1	No.

54	17U Floor mount rack : 17U Network Enclosure Frame, 600X800 -STEEL, Casters Set of 4, Adjustable Levellers set of 4, Glass Door-600-17U, Metal Door- 600-17U-Vented - Rear, Quantity Side Panels-800-17U-Vented, Horizontal Power Distribution Unit with 6 x 5/15A sockets Round Pin, 230 Volts AC, 32 Amp with Plug, Horz. Cable Manager-1U-Loop, Mounting Hardware-(Pack of 20), Fan-90CFM.	1	No.
55	22U Floor mount rack : 22U Network Enclosure Frame, 600X800 -STEEL, Casters Set of 4, Adjustable Levellers set of 4, Glass Door-600-22U, Metal Door-600-22U-Vented, Side Panels-800-22U-Vented, Mounting Hardware- (Pack of 20), FHU with 2 FAN 180CFM, Horizontal Power Distribution Unit with 6 x 5/15A sockets Round Pin, 230 Volts AC, 32 Amp with Plug.	1	No.
56	42U Floor Mount Rack: Front Glass and Steel Perforated Door Options, Rear Steel Doors With Perforation, Side Panels With Key Locks and Slam Latch, Heavy Duty Caster Wheels With Front Break Options, Keyboard Tray Sliding and Rotary, 4 Cooling Fan For Heat dissipation, 100mm vertical cable management in all Corner.	1	No.
57	6 Socket PDU, 5 Amps	1	No.
58	Horz. Cable Organiser	1	No.
59	Rack mount 19" 1U 12 Fiber LC type LIU with loaded adapter panel with plates	1	No.
60	Rack mount 19" 1U 12 Fiber SC type LIU with loaded adapter panel with plates	1	No.
61	Rack mount 19" 1U 24 Fiber LC type LIU with loaded adapter panel with plates	1	No.
62	1" Pvc Conduit Pipe & coupler & clamp (for open conducting)	1	Mtr.
63	1.5 "Pvc Conduit pipe & coupler & clamp (for open conducting)	1	Mtr.
64	2 " Pvc Conduit Pipe & coupler & clamp (for open conducting)	1	Mtr.
65	0.5" Pvc Casing - Box type	1	Mtr.
66	1" Pvc Casing – Box type	1	Mtr.
67	1.5" Pvc Casing – Box type	1	Mtr.
68	2" Pvc Casing -Box type	1	Mtr.
69	1" Pvc Flexible Pipe	1	Mtr.

70	1.5" Pvc Flexible Pipe	1	Mtr.
71	2" Pvc Flexible Pipe	1	Mtr.
72	Grey Channel 3" -75/75	1	Mtr.
73	Grey Channel 4" -100/100	1	Mtr.
74	G I PIPE 2"	1	Mtr.
75	Stay Wire (G I WIRE)	1	roll
76	SC-SC Style Singlemode Duplex patch cord, 3 Mtr.	1	No.
77	SC-LC Style Singlemode Duplex patch cord, 3 Mtr.	1	No.
78	LC-LC Style Singlemode Duplex patch cord, 3 Mtr.	1	No.
79	1Gbps SFP module, LC Connector, SM	1	No.
80	10Gbps SFP+ module, LC Connector, SM	1	No.
81	1Gbps SFP module, RJ-45	1	No.
82	10Gbps SFP+ module, RJ-45	1	No.
83	25GBASE-LR SM SFP+ Transceiver, 10KM	1	No.
84	2 core outdoor armoured OFC, SM	1	Mtr.
85	6 core outdoor armoured OFC, SM	1	Mtr.
86	12 core outdoor armoured OFC, SM	1	Mtr.
87	24 core outdoor armoured OFC, SM	1	Mtr.
88	SC pigtails, SM, Simplex, 1 Mtr.	1	No.
89	SC pigtails, SM, Simplex, 1.5 Mtr.	1	No.
90	LC pigtails, SM, Simplex, 1.5 Mtr.	1	No.
91	SC connectors, SM	1	No.
92	1:2 Splitter	1	No.
93	1:4 Splitter	1	No.
94	1:8 Splitter	1	No.
95	1:16 Splitter	1	No.
96	1:32 Splitter	1	No.
97	Fiber Distribution Box - small	1	No.
98	Fiber Distribution Box - medium	1	No.
99	Fiber Distribution Box - large	1	No.
100	Fiber termination box	1	No.
101	32mm HDPE pipe (High grade)	1	Mtr.
102	Outdoor OFC Joint Kit: support min of 24 core fiber, 2 cable entry ports, each with multi cable capability, vertical type of fiber optic splice clousures.Fiber optic splice closure kit usually includes: end plate, splice tray organiser, fiber splice tray, cover, cable grommets, grommet retainer, mounting bracket, closure mounting & misc.hardware.	1	No.
103	Supply of outdoor OFC Joint kit (rectangular)	1	No.
104	Supply of OFC cable route marker	1	No.
105	Cable dressing both end for marking for UTP cable inividual point wise	1	No.

106	6U - Rack dressing	1	No.
107	9U - Rack dressing	1	No.
108	12U - Rack dressing	1	No.
109	15U - Rack dressing	1	No.
110	17U - Rack dressing	1	No.
111	22U - Rack dressing	1	No.
112	42U - Rack dressing	1	No.
113	42U – Open Rack dressing	1	No.
114	45U - Rack dressing	1	No.
115	6U - Rack Re-dressing	1	No.
116	9U - Rack Re-dressing	1	No.
117	12U - Rack Re-dressing	1	No.
118	15U - Rack Re-dressing	1	No.
119	17U - Rack Re-dressing	1	No.
120	22U - Rack Re-dressing	1	No.
121	42U - Rack Re-dressing	1	No.
122	42U – Open Rack Re-dressing	1	No.
123	45U - Rack Re-dressing	1	No.
124	OFC Cable removing	1	Mtr.
125	Switch removing	1	No.
126	Network rack removing	1	No.
127	Jack / Patch panel removing	1	No.
128	Laying of 4-Pair, CAT6 / CAT6A UTP Cable, roll of 305 Mtr.	1	Box
129	Termination of CAT6 UTP I/O	1	No.
130	Termination of CAT6A UTP I/O	1	No.
131	Fixing of Face Plate & Back Box	1	Set
132	Termination of CAT6 24-port loaded, Jack / Patch Panel, 1U	1	Panel
133	Termination of CAT6A 24-port loaded, Jack / Patch Panel, 1U	1	Panel
134	Fixing of Ethernet switch	1	No.
135	Configuration of Ethernet switch	1	No.
136	Fixing & configuration of OLT	1	No.
137	Fixing & configuration of ONU	1	No.
138	Fixing & Configuration of Dome camera	1	No.
139	Fixing & Configuration of Bullet camera	1	No.
140	Fixing & Configuration of NVR	1	No.
141	Fixing of indoor wireless access point	1	No.
142	Configuration of indoor wireless access point	1	No.
143	Fixing of outdoor wireless access point	1	No.
144	Configuration of outdoor wireless access point	1	No.
145	Crimping of RJ45 Connector	1	Connector

146	Removing of existing CAT6 cable	1	Mtr.
147	Removing of existing PVC Pipe/Cassing	1	Mtr.
148	Fixing of 6U Rack with Accessories	1	Rack
149	Fixing of 9U Rack with Accessories	1	Rack
150	Fixing of 12U Rack with Accessories	1	Rack
151	Fixing of 15U Rack with Accessories	1	Rack
152	Fixing of 17U Rack with Accessories	1	Rack
153	Fixing of 19U Rack with Accessories	1	Rack
154	Fixing of 22U Rack with Accessories	1	Rack
155	Fixing of 42U Rack with Accessories	1	Rack
156	Label & Test of UTP cable, individual point wise	1	No.
157	Laying of OFC	1	Mtr.
158	Laying of fiber cables in cable trays, Trenches, plant structures & building walls irrespective of the height. Optical fibre cable with cores up to 48 cores. Supply of cable is not included	1	Mtr.
159	Laying of HDPE pipe	1	Mtr.
160	Fixing & Mounting of LIU including fixing of adapter panel, dressing, marking	1	LIU
161	Laying of Conduit Pipe / Casing / Flexible Pipe on trench / false ceiling / tray / wall	1	Mtr.
162	Fixing of distribution box - small	1	No.
163	Fixing of distribution box - Medium	1	No.
164	Fixing of distribution box - Large	1	No.
165	Excavation of soft soil for laying of OFC cable	1	Mtr.
166	Excavation of hard soil for laying of OFC cable	1	Mtr.
167	Excavation of road for laying G I pipe to pass OFC cable (Road cutting for laying of G I Pipe)	1	Mtr.
168	Termination / Splicing of OFC cable per core	1	Core
169	Installation of OFC cable route marker	1	No.
170	OTDR Testing & soft documentation reports of OFC per core	1	Core
171	Laying of 40 mm GI pipe, backfilling & finishing after laying (supply of pipe is not included)	1	Mtr.
172	Laying of G I Wire with necessary accessories	1	Mtr.
173	Marker Tie (Nylon) 20 cm (packet of 100)	1	Packet
174	Marker Tie (Nylon) 10 cm (packet of 100)	1	Packet
175	Cable Tie (Nylon) 15 cm (packet of 100)	1	Packet
176	Ferrules	1	Packet

177	TAG 250 MM	1	Packet
178	Electrical Gum Tape	1	roll
179	Roll Plug 6 mm	1	Packet
180	Screw 1.5"	1	Packet
181	Anchor Bolt 8 mm	1	No.
182	Coupler 1"	1	No.
183	Coupler 1.5"	1	No.
184	Coupler 2"	1	No.
185	Bend 1"	1	No.
186	Bend 1.5"	1	No.
187	Bend 2"	1	No.
188	Saddle 1"	1	Box
189	Saddle 1.5"	1	Box
190	Saddle 2"	1	Box
191	T 1"	1	No.
192	T 1.5"	1	No.
193	T 2"	1	No.
194	Elbow 1"	1	No.
195	Elbow 1.5"	1	No.
196	Elbow 2" Coach Bolt	1	No.
197	Numbering of OFC cables Dressing of OFC cables	1	No.
198	1" Velcro for dressing	1	No.

2.1 Detailed/Essential specifications of some of the items in the aforementioned list.

6 Core Single Mode Armoured Fibre Cable:

S/N	Specifications
Brand & Model Number to be mentioned	
1	6 fiber Single Mode, Armored, Unitube, Gel filled cable complying to ISO/IEC 11801, ITU-T G 652.D, Telcordia GR-20
2	Electro Chromium Coated Corrugated Steel Tape (ECCS)
3	Core/Mode-Field Diameter@1310 nm(μm) - 9.2+/- 0.4 um
4	Cladding Diameter - 125 + - 1 um
5	Coating Diameter - 245 + - 10 um
6	Attenuation: 1310 nm: ≤ 0.38 dB/Km, 1550 nm: ≤ 0.25 dB/Km
7	Chromatics Dispersion: Maximum at 1285-1330nm ≤ 3.5 ps/nm.Km Maximum at 1270-1340nm ≤ 5.3 ps/nm.Km Maximum at 1550 nm ≤ 18 ps/nm.Km
8	Cable cut-off wavelength - ≤ 1260 nm
9	Cladding non circularity - ≤ 1.0 %

S/N	Specifications
10	Core/ clad concentricity error - ≤ 0.8 μm
11	Loose tube material - PBTP Loose tube filled
12	Jacket – HDPE Black
13	Tensile Strength – Min 1000N or Better
14	Crush Resistance - 2000N/100 mm or Better
15	Nominal Cable Diameter - 12mm nominal
16	Bending Radius - 20 X Overall diameters
17	Operating Temperature - -20 Degree C to +70 Degree C
18	Storage Temperature -20 Degree C to +70 Degree C
19	Documentation – Technical Compliance Sheet, Datasheet & MAF from OEM
20	Structured cabling products should be of reputed make & field proven Structured Cabling Solution (Copper & Fiber) should be from one single OEM/Brand to achieve optimum performance. OEM should be a member of the International Structured Cabling Standards related Organization. Certificates need to be submitted The quoted Brand & OEM should have direct presence in Indian Market for at least 10+ Years OEM should have ISO 9001:2015, ISO 14001:2015

12 Core Single Mode Armoured Fibre Cable:

S/N	Specifications
Brand & Model Number to be mentioned	
1	12 fiber Single Mode, Armored, Unitube, Gel filled cable complying to ISO/IEC 11801, ITU-T G 652.D, Telcordia GR-20
2	Electro Chromium Coated Corrugated Steel Tape (ECCS)
3	Core/Mode-Field Diameter@1310 nm(μm) - 9.2+/- 0.4 um
4	Cladding Diameter - 125 + - 1 um
5	Coating Diameter - 245 + - 10 um
6	Attenuation: 1310 nm: ≤ 0.38 dB/Km, 1550 nm: ≤ 0.25 dB/Km
7	Chromatics Dispersion: Maximum at 1285-1330nm ≤ 3.5 ps/nm.Km Maximum at 1270-1340nm ≤ 5.3 ps/nm.Km Maximum at 1550 nm ≤ 18 ps/nm.Km
8	Cable cut-off wavelength - ≤ 1260 nm
9	Cladding non circularity - ≤ 1.0 %
10	Core/ clad concentricity error - ≤ 0.8 μm
11	Loose tube material - PBTP Loose tube filled
12	Jacket – HDPE Black
13	Tensile Strength – Min 1000N or Better
14	Crush Resistance - 2000N/100 mm or Better
15	Nominal Cable Diameter - 12mm nominal

S/N	Specifications
16	Bending Radius - 20 X Overall diameters
17	Operating Temperature - -20 Degree C to +70 Degree C
18	Storage Temperature -20 Degree C to +70 Degree C
19	Documentation – Technical Compliance Sheet, Datasheet & MAF from OEM

24 Core Single Mode Armoured Fibre Cable:

S/N	Specifications
Brand & Model Number to be mentioned	
1	24 fiber Single Mode, Armored, Unitube, Gel filled cable complying to ISO/IEC 11801, ITU-T G 652.D, Telcordia GR-20
2	Electro Chromium Coated Corrugated Steel Tape (ECCS)
3	Core/Mode-Field Diameter@1310 nm(μm) - 9.2+/- 0.4 um
4	Cladding Diameter - 125 + - 1 um
5	Coating Diameter - 245 + - 10 um
6	Attenuation: 1310 nm: ≤ 0.38 dB/Km, 1550 nm: ≤ 0.25 dB/Km
7	Chromatics Dispersion: Maximum at 1285-1330nm ≤ 3.5 ps/nm.Km Maximum at 1270-1340nm ≤ 5.3 ps/nm.Km Maximum at 1550 nm ≤ 18 ps/nm.Km
8	Cable cut-off wavelength - ≤ 1260 nm
9	Cladding non circularity - ≤ 1.0 %
10	Core/ clad concentricity error - ≤ 0.8 μm
11	Loose tube material - PBTP Loose tube filled
12	Jacket – HDPE Black
13	Tensile Strength – Min 1000N or Better
14	Crush Resistance - 2000N/100 mm or Better
15	Nominal Cable Diameter - 12mm nominal
16	Bending Radius - 20 X Overall diameters
17	Operating Temperature - -20 Degree C to +70 Degree C
18	Storage Temperature -20 Degree C to +70 Degree C
19	Documentation – Technical Compliance Sheet, Datasheet & MAF from OEM

24 Ports LIU:

S/N	Specifications
Brand & Model Number to be mentioned	
1	Standard 19" Rack mountable
2	LIU should be constructed of 16-gauge steel, powder-coated loaded with 12 LC SM Duplex Ports (24P)
3	Should have at least 2 fiber spools
4	Removable front and top covers for better access
5	Mounting & termination accessories to be supplied
6	Documentation – Technical Compliance Sheet, Datasheet & MAF from OEM

12 Ports LIU:

S/N	Specifications
Brand & Model Number to be mentioned	
1	Standard 19" Rack mountable
2	LIU should be constructed of 16-gauge steel, powder-coated loaded with 06 LC SM Duplex Ports (12P)
3	Should have at least 2 fiber spools
4	Removable front and top covers for better access
5	Mounting & termination accessories to be supplied
6	Documentation – Technical Compliance Sheet, Datasheet & MAF from OEM

06 Ports LIU:

S/N	Specifications
Brand & Model Number to be mentioned	
1	Standard 19" Rack mountable
2	LIU should be constructed of 16-gauge steel, powder-coated loaded with 03 LC SM Duplex Ports (06P)
3	Should have at least 2 fiber spools
4	Removable front and top covers for better access
5	Mounting & termination accessories to be supplied
6	Documentation – Technical Compliance Sheet, Datasheet & MAF from OEM

Pigtail:

S/N	Specifications
Brand & Model Number to be mentioned	
1	Single-Mode Fiber pigtail with LC connectors
2	Should meet all applicable standards
3	Compliant with TIA/EIA-568- C, IEC standards
4	Insertion Loss – Max 0.3dB
5	Return Loss - ≥50 dB
6	Length: 1m
7	Documentation – Technical Compliance Sheet, Datasheet & MAF from OEM

Fiber Patch Cord:

S/N	Specifications
Brand & Model Number to be mentioned	
1	Single-Mode Fiber Patch cord with LC-to-LC connectors
2	Should meet all applicable standards
3	Compliant with TIA/EIA-568- C, IEC standards
4	Insertion Loss – Max 0.3dB
5	Return Loss - ≥50 dB
6	Length: 3m
7	Documentation – Technical Compliance Sheet, Datasheet & MAF from OEM

Category 6 UTP Cable:

S/N	Specifications
Brand & Model Number to be mentioned	
1	Category 6 Unshielded Twisted Pair 4 pair 305 meters' cable
2	23 AWG Solid Bare Copper Wire UTP Cable
3	Should Support ANSI/TIA-568-C.2 Standard
4	ETL Verified 4-Connector Channel to ANSI/TIA-568-C.2 Category 6 and ISO/IEC 11801 Class E upto 100 Mtrs (Reports / Certificates need to be attached)
5	Separator / Cross Filler
6	Sheath – Flame Retardant PVC
7	Conductor Resistance: ≤ 9.38 Ω/100m or better
8	Characteristics Impedance: 100± 15Ω or better
9	Mutual Capacitance: < 5.6nF/100m or better
10	Delay Skew: <45ns/100m or better
11	Operating Temperature: -20°C ~ 70°C or higher
12	UL Listed, ETL Verified, RoHS Compliant
13	Zero-bit error test by Intertek (Reports / Certificates need to be attached)
14	UL and RoHS Compliant
15	Documentation – Technical Compliance Sheet, Datasheet & MAF from OEM
16	Structured cabling products should be of reputed make & field proven Structured Cabling Solution (Copper & Fiber) should be from one single OEM/Brand to achieve optimum performance. OEM should be a member of the International Structured Cabling Standards related Organization. Certificates need to be submitted The quoted Brand & OEM should have direct presence in Indian Market for at least 10+ Years OEM should have ISO 9001:2015, ISO 14001:2015

Category 6 Keystone

S/N	Specifications
Brand & Model Number to be mentioned	
1	Category 6 UTP Keystone
2	Universal labels Color coded for T568A/568B, TIA568 C.2
3	Should Support ANSI/TIA-568-C.2 Standard
4	Suitable for 23-26 AWG stranded and solid wire
5	ETL verified unshielded EIA/TIA connecting hardware (Reports / Certificates need to be attached)
6	Contact Bracket - PC, UL 94V-2
7	IDC Housing - PC+ Glass Fiber, UL 94V-2, 50 μinches gold on plug contact area, Phosphor bronze with Nickel plated IDC Contact
8	Documentation – Technical Compliance Sheet, Datasheet & MAF from OEM

Faceplate:

S/N	Specifications
Brand & Model Number to be mentioned	

1	Single / Dual / Quad (Square) with shutter
2	Screws / hole covers to supplied with face plate
3	Labelling on transparent plastic window,
4	Face Plate - ABS, UL94-HB
5	Dust Cover - ABS, UL94-HB
6	PVC – Backbox
7	Documentation – Technical Compliance Sheet, Datasheet & MAF from OEM

24 Ports Category 6 Patch Panel:

S/N	Specifications
Brand & Model Number to be mentioned	
1	Powder coated steel in 24 port configurations
2	Should support port identification numbers on the panel
3	Rear Cable Management Bar support
4	Should be loaded with Category 6 Keystones
5	Contact Bracket - PC, UL 94V-2
6	IDC Housing - PC+ Glass Fiber, UL 94V-2, 50 μinches gold on plug contact area, Phosphor bronze with Nickel plated IDC Contact
7	Documentation – Technical Compliance Sheet, Datasheet Manufacturer Authorization Form (MAF)

Category 6 Patch Cord:

S/N	Specifications
Brand & Model Number to be mentioned	
1	Cat-6 UTP Patch Cord
2	24AWG stranded bare copper conductor
3	Snag less Semi-Transparent Moulded Boot
4	Phosphor bronze Contact with Nickel Plated
5	Jacket – Flame Retardant PVC
6	Insulation Resistance: 150M Ω/Km
7	Contact Resistance: 20 mΩ,
8	Insertion: 750 Mating Cycles,
9	ETL Verified 4-Connector Channel to ANSI/TIA-568-C.2 Category 6 and ISO/IEC 11801 Class E up to 100 meters (Reports / Certificates need to be attached)
10	Length – 1m, 2m, 3m
11	Documentation – Technical Compliance Sheet, Datasheet & MAF from OEM

42U/27U/22U Floor Mount Rack:

S/N	Specifications
Brand & Model Number to be mentioned	
1	42U - 800X1000- Floor Mount Rack
2	Construction - All Welded construction
3	Casters Set of 4 Adjustable Levellers set of 4
4	19" Reduced Channel - Loop Type

5	Top and Bottom Cover - Welded to Frame, Vented and Field Cable entry exit cut outs
6	Front Door - Lockable Toughened Glass
7	Finish - Powder Coated
8	Vertical Power Distribution Unit with 12 x 5/15 sockets Round Pin, 230 Volts AC 32 Amp with Plug
9	Horz. Cable Managers -1U-Loop
10	Grounding and Bonding
11	Rack Standard - DIN 41494 or better
12	Accessories - Cable Manager, Fan, Hardware mounting kit
13	Documentation – Technical Compliance Sheet, Datasheet & MAF from OEM

42U/27U/22U Wall Mount Rack:

S/N	Specifications
Brand & Model Number to be mentioned	
1	42U - 800X1000- Wall Mount Rack
2	Construction - All Welded construction
3	19" Reduced Channel - Loop Type
4	Top and Bottom Cover - Welded to Frame, Vented and Field Cable entry exit cut outs
5	Front Door - Lockable Toughened Glass
6	Finish - Powder Coated
7	Vertical Power Distribution Unit with 12 x 5/15 sockets Round Pin, 230 Volts AC 32 Amp with Plug
8	Horz. Cable Managers -1U-Loop
9	Grounding and Bonding
10	Rack Standard - DIN 41494 or better
11	Accessories - Cable Manager, Fan, Hardware mounting kit
12	Documentation – Technical Compliance Sheet, Datasheet & MAF from OEM

9U Wall Mount Rack:

S/N	Specifications
Brand & Model Number to be mentioned	
1	9U - 550X550- Wall Mount Rack
2	Construction - All Welded construction
3	Adjustable 19" equipment mounting verticals provide the better mounting flexibility, and maximizes the usable mounting space
4	Top and Bottom Cover - Welded to Frame, Vented and Field Cable entry exit cut outs
5	Front Door - Lockable Toughened Glass
6	Finish - Powder Coated
7	Horz. Cable Managers -1U-Loop
8	Grounding and Bonding
9	Rack Standard - DIN 41494 or better

10	Accessories - Cable Manager, Fan, Hardware mounting kit
11	Documentation – Technical Compliance Sheet, Datasheet & MAF from OEM

15U Wall Mount Rack:

S/N	Specifications
Brand & Model Number to be mentioned	
1	15U - 550X550- Wall Mount Rack
2	Construction - All Welded construction
3	Adjustable 19" equipment mounting verticals provide the better mounting flexibility, and maximizes the usable mounting space
4	Top and Bottom Cover - Welded to Frame, Vented and Field Cable entry exit cut outs
5	Front Door - Lockable Toughened Glass
6	Finish - Powder Coated
7	Horz. Cable Managers -1U-Loop
8	Grounding and Bonding
9	Rack Standard - DIN 41494 or better
10	Accessories - Cable Manager, Fan, Hardware mounting kit
11	Documentation – Technical Compliance Sheet, Datasheet & MAF from OEM

24 x 10G SFP + 4 x 100G L3 Managed Switch:

S/N	Parameter	Specification / Value
1	Switch	Make: Extreme/D-Link/HPE Aruba/Tejas/Quantum/Juniper/Cisco/Alcatel-Lucent
2	Hardware	
	Interfaces	10GbE SFP+ Ports - Min 24 or more 100GbE QSFP28 Ports - Min 4 or more 1 USB 2.0 port 1 RS-232 / RJ45 console port Management port: 1 x RJ-45 ports All Ports & Necessary Licenses to be quoted, supplied / enabled from day one
	Power Supply, Fans	Dual redundant (1+1) & hot-pluggable AC power supplies loaded 110-240 V AC power Fans – Redundant 2 or more
	Dimensions & Rack Installation	19-inch Rack Mount with Rack Installation Kit
	Environmental	Operating temperature: 0° to 50° C or Higher MTBF - > 1,00,000 Hours or Higher
3	**Performance**	

	Switching Capacity	Packet Switching Capacity - Min 1.28Tbps or higher Layer 2/Layer 3 throughput - Min 950 Mpps or higher
	Packet Buffer	Min 4 MBytes or higher Packet Buffer
4	**Software Features**	
	Network Operating System	License should include all Advanced software features Switch should have Commercial Enterprise NOS from the same OEM as Switch. Open Source based NOS is not acceptable.
	L2 Features	MAC addresses per system: Min 32K or Higher Number of VLANs supported: 4K or Higher Range of VLAN IDs: 4K Jumbo frames: 9K or Higher STP-IEEE 802.1D, RSTP-IEEE 802.1w, MSTP-IEEE 802.1s Port Mirroring VLAN - IEEE 802.1Q, Port-based Loopback Detection & Protection (Independent of STP) IEEE 802.3ad: Link Aggregation Control Protocol (LACP) Double VLAN (Q-in-Q), Port based and Selective
	L3 Features	Address Resolution Protocol (ARP) IPv4 & IPv6 DHCP Relay Minimum 1K or more IPv6 SVI / VLAN Interfaces IPv4 & IPv6 Static Routing Static Routing, OSPF v2/v3, BGP, BGP4+ PBR, ECMP & VRRP VRF Lite
	Access Security IPv4	MAC, IPv4 Access control list (ACL) 802.1X Radius Authentication – Port & Host based RADIUS, TACACS+ Port Security, DAI, DHCP Snooping, IPSG Storm control SSH v1, v2
	Access Security IPv6	IPv6 Access control list (ACL) SSH (IPv6) SSL (IPv6) Web-UI (IPv6)

	High Availability	Physical Stacking up to 4 switches with Single IP Management Cross-member link aggregation IEEE 802.3ad / 802.1AX LACP Number of link aggregation groups (LAGs) supported: 32 Maximum number of ports per LAG: 8 Dual Images and Dual Configurations
	Operations, Administration and Maintenance	OAM / IP SLA / Equivalent IEEE 802.3ah Ethernet Link OAM IEEE 802.1ag Connectivity Fault Management (CFM) Y.1731 OAM Dying Gasp Digital Diagnostic Monitoring (DDM)
	Quality of Service (QoS)	Layer 2 QoS, Layer 3 QoS, Hardware queues per port: 8 Strict-priority queuing (PQ), Weighted Round Robin / shaped-deficit weighted round robin (WRR/WDRR/SDWRR), Rate limiting L2-L4 classification criteria: Interface, MAC address, Ether Type, 802.1p, VLAN, IP address, DSCP/IP precedence, TCP/UDP port numbers
	Multicast Features	IGMP snooping: v1, v2, and v3, IGMP Filter MLD Snooping PIM SM, DM, SSM, IGMP v1/v2/v3 Multicast VLAN (MVR)
	Device Management and Operations	On-Premise Management Role-based Full Featured CLI management Web-UI (IPv4 & IPv6) SNMP IPv4 & IPv6 SNMP v1/v2/v3 SNMP Traps Remote monitoring (RMON) sFlow IPv4 & IPv6 DHCP Client & Relay Network Time Protocol (NTP) / SNTP SSH v2 (IPv4 & v6) IEEE 802.1AB: Link Layer Discovery Protocol (LLDP) IPv4/v6 Dual Stack IPv6 tunnelling
	NMS Monitoring	CPU Utilization Memory Utilization Port Status & Utilization SNMP Traps

		Syslog Monitoring ARP Table & FDB Table Monitoring
5	Certifications / Compliance	OEM/OS/Switch should have IEC or ISA or equivalent Indian Cyber Security Certification. Certificate to be submitted
6	OEM / Bidder Criteria	Offered Brand should have direct presence in India Offered Brand should have own Tech support center (TAC) in India Offered Brand should have own service/repair/support center in Karnataka for faster support Offered Brand & Models should be reputed & field proven Bidder should have Registered office in Karnataka Bidder should have qualified technical support team locally
7	Country of Origin	Non-MIC
8	Compatibility	All Switches, Modules & Transceivers should be from same Brand
9	PoC / Demo	PoC / Demo needs to be arranged during technical evaluation stage (if required). Bidder should have qualified Manpower to demonstrate
10	Warranty, Services and Support	Minimum 5 years Warranty On-site Installation, Configuration and troubleshooting support The offered model should be the latest. End of Sales (EoS) announced model or model going to be EoS in next 6 months should not be quoted
11	Documentation	Technical Compliance sheet, Datasheet & Cross Reference Manufacturer Authorization Letter
12	Package Contents	24 Ports 10GbE SFP+ Switch + Uplink Ports + Stacking Modules / Cables with required warranty Power Supplies + Fans Necessary Port, Feature & OS License (If applicable) 1U Rack Mount Kit Console Cable AC Power Cord Installation Guide
13		Should be compatible to deploy with Eduroam with Dynamic VLAN. Storm control, Access Control, setup of NITK and should be demonstrated before participating in the tender and MAF from the OEM should be submitted along with bid

8-Port Multi-Gigabit Smart Managed Switch:

S/N	Parameter	Specification / Value
1	**Switch**	Make: Extreme/D-Link/HPE Aruba/Tejas/Quantum/Juniper/Cisco/Alcatel-Lucent
2	**Hardware**	

	Interfaces	2.5GbE RJ45 PoE+ Ports - Min 8 or more 10GbE SFP+ Uplink Ports - Min 2 or more 1 RS-232 / RJ45 console port All Ports & Necessary Licenses to be quoted, supplied / enabled from day one
	Power Supply	Power Input: 110-240 V AC power
	Dimensions & Rack Installation	19-inch Rack Mount with Rack Installation Kit
	Environmental	Operating temperature: 0° to 50° C or Higher MTBF - > 1,00,000 Hours or Higher
3	**Performance**	
	Packet Buffer	Min 1.5 MBytes or higher Packet Buffer
	Switching Capacity	Packet Switching Capacity - Min 80 Gbps or higher Layer 2/Layer 3 throughput - Min 59 Mpps or higher
	Power over Ethernet (PoE)	IEEE 802.3af Power over Ethernet (PoE) / 802.3at Power over Ethernet (PoE+) Minimum 240W or higher PoE Power Budget PD Alive to check the status of PD Devices connected to PoE ports Time based PoE to allow power only during working hours & save power
4	**Software Features**	
	Network Operating System	License should include all Advanced software features Switch should have Commercial Enterprise NOS from the same OEM as Switch. Open Source based NOS is not acceptable.
	Features	MAC addresses per system: Min 16K or Higher Number of VLANs supported: 4K or Higher Range of VLAN IDs: 4K Jumbo frames: 9K or Higher STP-IEEE 802.1D, RSTP-IEEE 802.1w, MSTP-IEEE 802.1s Port Mirroring VLAN - IEEE 802.1Q, Port-based Voice VLAN Loopback Detection & Protection (Independent of STP) IEEE 802.3ad: Link Aggregation Control Protocol (LACP) Address Resolution Protocol (ARP) IPv4 & IPv6 DHCP Relay SVI / VLAN IPv4 & IPv6 Interfaces IPv4 & IPv6 Static Routing

	Access Security IPv4	MAC, IPv4 Access control list (ACL) 802.1X Radius Authentication – Port & Host based RADIUS, TACACS+ Port Security, DAI, DHCP Snooping, IPSG Storm control SSH v1, v2
	Access Security IPv6	IPv6 Access control list (ACL) IPv6 Source Guard, DHCPv6 Snooping, IPv6 RA Guard, DHCPv6 Guard, IPv6 ND Inspection SSH (IPv6) SSL (IPv6) RADIUS Server (IPv6) Web-UI (IPv6)
	High Availability	IEEE 802.3ad / 802.1AX LACP Number of link aggregation groups (LAGs) supported: 8 Maximum number of ports per LAG: 8 Dual Image & Dual Configurations
	Operations, Administration and Maintenance	Cable Diagnostics Digital Diagnostic Monitoring (DDM)
	Quality of Service (QoS)	Layer 2 QoS, Layer 3 QoS, Hardware queues per port: 8 Strict-priority queuing (PQ), Weighted Round Robin / shaped-deficit weighted round robin (WRR/WDRR/SDWRR), Rate limiting L2-L4 classification criteria: Interface, MAC address, Ether Type, 802.1p, VLAN, IP address, DSCP/IP precedence, TCP/UDP port numbers
	Multicast Features	IGMP snooping: v1, v2, and v3, IGMP Filter MLD Snooping
	Device Management and Operations	On-Premise Management Role-based Full Featured CLI management Full Featured Web-UI (IPv4 & IPv6) All the features should be configurable via CLI & Web-UI SNMP IPv4 & IPv6 SNMP v1/v2/v3 SNMP Traps – Link, STP, Loop, PoE, Storm, Power, Fan, New MAC Remote monitoring (RMON) IPv4 & IPv6 DHCP Client & Relay Network Time Protocol (NTP) / SNTP SSH v2 (IPv4 & v6)

		IEEE 802.1AB: Link Layer Discovery Protocol (LLDP)
		IPv4/v6 Dual Stack
		Dual Image & Dual Configurations
5	Certifications / Compliance	OEM/OS/Switch should have IEC or ISA or equivalent Indian Cyber Security Certification. Certificate to be submitted
6	OEM / Bidder Criteria	Offered Brand should have direct presence in India
		Offered Brand should have own Tech support center (TAC) in India
		Offered Brand should have own service/repair/support center in Karnataka for faster support
		Offered Brand & Models should be reputed & field proven
		Bidder should have Registered office in Karnataka
		Bidder should have qualified technical support team locally
7	Country of Origin	Non-MIC
8	EMC/EMI/Safety	Safety (ICT) – UL / EN 62368-1 or Better
		EMC - EN 55032, EN 61000-3-2, EN 61000-3-3, EN 55024
		RoHS – EN/IEC 63000 or equivalent
		UL, CE & FCC
9	Compatibility	All Switches, Modules & Transceivers should be from same Brand
10	PoC / Demo	PoC / Demo needs to be arranged during technical evaluation stage
		(if required). Bidder should have qualified Manpower to demonstrate
11	Warranty, Services and Support	Minimum 5 years Warranty
		On-site Installation, Configuration and troubleshooting support
		The offered model should be the latest. End of Sales (EoS) announced model or model going to be EoS in next 6 months should not be quoted
12	Documentation	Technical Compliance sheet, Datasheet & Cross Reference
		Manufacturer Authorization Letter
13	Package Contents	8 Ports 2.5GbE PoE Switch + Uplink Ports with required warranty
		Power Supply
		Necessary Port, Feature & OS License (If applicable)
		1U Rack Mount Kit
		Console Cable
		AC Power Cord
		Installation Guide
14		Should be compatible to deploy with Eduroam with Dynamic VLAN. Storm control, Access Control, setup of NITK and should

		be demonstrated before participating in the tender and MAF from the OEM should be submitted along with bid

25GbE SM SFP28 (LC Duplex) Transceiver:

S/N	Parameter	Specification / Value
		Preferred Make : Extreme/D-Link/HPE Aruba/TEJAS/QUANTUM/Juniper/Cisco/Alcatel-Lucent
1	Type	25G Base LR (SM) Transceiver
2	Form Factor	SFP28, Duplex LC Connectors, Hot Pluggable
3	Standard Compliance	IEEE 802.3by compliant RoHS
4	Distance	Up to 10 kms
5	Operating Temperature	Up to 70°C or better
7	Warranty, Services and Support	Minimum 5 years Warranty On-site Installation, Configuration and troubleshooting support The offered model should be the latest. End of Sales (EoS) announced model or model going to be EoS in next 6 months should not be quoted
8	Compatibility	All Switches, Modules & Transceivers should be from same Brand
9	Documentation	Technical Compliance sheet, Datasheet & Cross Reference Manufacturer Authorization Letter

24 Port 10/100/1000 Mbps POE + 4 x 10G Ports Managed switch:

S/N	Parameter	Specification / Value
1	**Switch**	Make: Extreme/D-Link/HPE Aruba/Tejas/Quantum/Juniper/Cisco/Alcatel-Lucent
2	**Hardware**	
	Interfaces	1GbE RJ45 PoE+ Ports - Min 24 or more 10GbE SFP+ Uplink Ports - Min 4 or more 1 RS-232 / RJ45 console port All Ports & Necessary Licenses to be quoted, supplied / enabled from day one
	Power Supply	Power Input: 110-240 V AC power
	Dimensions & Rack Installation	19-inch Rack Mount with Rack Installation Kit
	Environmental	Operating temperature: 0° to 50° C or Higher MTBF - > 3,06,600 Hours or Higher
3	**Performance**	

	Packet Buffer	Packet Buffer – Minimum 1.5 MBytes or Higher
	Switching Capacity	Packet Switching Capacity - Min 128 Gbps or higher Layer 2/Layer 3 throughput - Min 95 Mpps or higher
	Power over Ethernet (PoE)	IEEE 802.3af Power over Ethernet (PoE) / 802.3at Power over Ethernet (PoE+) Minimum 370W or higher PoE Power Budget PD Alive to check the status of PD Devices connected to PoE ports Time based PoE to allow power only during working hours & save power
4	**Software Features**	
	Network Operating System	License should include all Advanced software features Switch should have Commercial Enterprise NOS from same OEM as Switch. Open Source based NOS not acceptable.
	Features	MAC addresses: Min 16K or Higher, VLAN Groups & VID: 4K or Higher, Jumbo frames: 9K or Higher, STP, RSTP, MSTP, Port Mirroring, VLAN - IEEE 802.1Q, Port-based, Voice VLAN, Loopback Detection & Protection (Independent of STP), IEEE 802.3ad: LACP, IGMP snooping: v1, v2, and v3, IGMP Filter, MLD Snooping, ARP, Min 4 or more IPv6 SVI / VLAN Interfaces, IPv4 & IPv6 DHCP Relay, IPv4 & IPv6 Static Routing, Cable Diagnostics, Digital Diagnostic Monitoring (DDM)
	Security	MAC, IPv4/v6 ACL, 802.1X - Port & Host based, RADIUS IPv4 & v6, TACACS+, Port Security, DAI, DHCP Snooping IPv4 & V6, IPSG IPv4 & v6, IPv6 ND Inspection, Storm control, SSH IPv4 & v6, SSL
	High Availability	IEEE 802.3ad / 802.1AX LACP, 8 LAGs with Min 8 Ports per LAG Dual Image & Dual Configurations
	Quality of Service (QoS)	L2 and L3 QoS: Classification, rewrite, queuing, Rate limiting SP, WRR / WDRR/SDWRR, 802.1p remarking
	Device Management and Operations	On-Premise Management, Role-based Full Featured CLI management, Full Featured Web-UI (IPv4 & IPv6), All the features should be configurable via CLI & Web-UI, SNMP IPv4 & IPv6, SNMP v1/v2/v3, SNMP Traps – Link, STP, Loop, Storm, Power, Fan, New MAC, Remote monitoring (RMON), NTP / SNTP, SSH v2 (IPv4 & v6), IEEE 802.1AB LLDP, IPv4/v6 Dual Stack
	NMS Monitoring	CPU, Memory, Port Utilization, SNMP Traps, Syslog, FDB Table Monitoring, Private MIB
5	Certifications / Compliance	Safety (ICT) – UL / EN 62368-1 or Better EMC - EN 55032, EN 61000-3-2, EN 61000-3-3, EN 55024 RoHS – EN/IEC 63000 or equivalent UL, CE & FCC

		Brand / OS / Model IEC or ISA or equivalent Indian Cyber Security compliance
6	OEM / Bidder Criteria	Offered Brand should have direct presence in India
		Offered Brand should have direct & own Tech support center (TAC) in India
		Offered Brand should have direct & own service/repair center in India
		Offered Brand & Models should be reputed & field proven
		Bidder should have Registered office in Karnataka
		Bidder should have qualified technical support team locally
7	TEC Approval	Mandatory
8	Country of Origin	Non-MIC
9	Compatibility	All Switches should be from same Brand
10	PoC / Demo	PoC / Demo needs to be arranged during technical evaluation stage (if required). Bidder should have qualified Manpower to demonstrate
11	Warranty, Services and Support	Min 3 years Warranty
		On-site Installation, Configuration and troubleshooting support
		The offered model should be the latest. End of Sales (EoS) announced model or model going to be EoS in next 6 months should not be quoted
12	Documentation	Technical Compliance sheet with Cross Reference in OEM letterhead
		Technical Datasheet
		OEM MAF with complete contact details of authorised signatory
		Detailed Technical BoQ of Switch & Accessories with ordering code in OEM letterhead for technical evaluation
		In complete information will be treated as non-responsive bids
		Copy of all certifications mentioned in sections 5 & 7
13	Package Contents	24 Ports 1GbE RJ45 PoE+ Switch + 4 x 10GbE SFP+ Uplink Ports with required warranty
		Necessary Port, Feature & OS License (If applicable)
		1U Rack Mount Kit
		Console Cable
		AC Power Cord
		Installation Guide
14		Should be compatible to deploy with Eduroam with Dynamic VLAN. Storm control, IPv4 & IPv6 Access Control, setup of NITK and should be demonstrated before participating in the tender and MAF from the OEM should be submitted along with bid

24 Port 10/100/1000 Mbps + 4 x 10G Ports Managed Switch:

S/N	Parameter	Specification / Value

1	**Switch**	Make: Extreme/D-Link/HPE Aruba/ TEJAS/QUANTUM/Juniper/ Cisco/ Alcatel-Lucent
2	**Hardware**	
	Interfaces	1GbE RJ45 Ports - Min 24 or more 10GbE SFP+ Uplink Ports - Min 4 or more 1 RS-232 / RJ45 console port All Ports & Necessary Licenses to be quoted, supplied / enabled from day one
	Power Supply	Power Input: 110-240 V AC power
	Dimensions & Rack Installation	19-inch Rack Mount with Rack Installation Kit
	Environmental	Operating temperature: 0° to 50° C or Higher MTBF - > 3,06,600 Hours or Higher
3	**Performance**	
	Packet Buffer	Packet Buffer – Minimum 1.5 MBytes or Higher
	Switching Capacity	Packet Switching Capacity - Min 128 Gbps or higher Layer 2/Layer 3 throughput - Min 95 Mpps or higher
4	**Software Features**	
	Network Operating System	License should include all Advanced software features Switch should have Commercial Enterprise NOS from same OEM as Switch. Open Source based NOS not acceptable.
	Features	MAC addresses: Min 16K or Higher, VLAN Groups & VID: 4K or Higher, Jumbo frames: 9K or Higher, STP, RSTP, MSTP, Port Mirroring, VLAN - IEEE 802.1Q, Port-based, Voice VLAN, Loopback Detection & Protection (Independent of STP), IEEE 802.3ad: LACP, IGMP snooping: v1, v2, and v3, IGMP Filter, MLD Snooping, ARP, Min 4 or more IPv6 SVI / VLAN Interfaces, IPv4 & IPv6 DHCP Relay, IPv4 & IPv6 Static Routing, Cable Diagnostics Digital Diagnostic Monitoring (DDM)
	Security	MAC, IPv4/v6 ACL, 802.1X - Port & Host based, RADIUS IPv4 & v6, TACACS+, Port Security, DAI, DHCP Snooping IPv4 & V6, IPSG IPv4 & v6, IPv6 ND Inspection, Storm control, SSH IPv4 & v6, SSL
	High Availability	IEEE 802.3ad / 802.1AX LACP, 8 LAGs with Min 8 Ports per LAG Dual Image & Dual Configurations
	Quality of Service (QoS)	L2 and L3 QoS: Classification, rewrite, queuing, Rate limiting SP, WRR / WDRR/SDWRR, 802.1p remarking

	Device Management and Operations	On-Premise Management, Role-based Full Featured CLI management, Full Featured Web-UI (IPv4 & IPv6), All the features should be configurable via CLI & Web-UI, SNMP IPv4 & IPv6, SNMP v1/v2/v3, SNMP Traps – Link, STP, Loop, Storm, Power, Fan, New MAC, Remote monitoring (RMON), NTP / SNTP, SSH v2 (IPv4 & v6), IEEE 802.1AB LLDP, IPv4/v6 Dual Stack
	NMS Monitoring	CPU, Memory, Port Utilization, SNMP Traps, Syslog, FDB Table Monitoring, Private MIB
5	Certifications / Compliance	Safety (ICT) – UL / EN 62368-1 or Better
		EMC - EN 55032, EN 61000-3-2, EN 61000-3-3, EN 55024
		RoHS – EN/IEC 63000 or equivalent
		UL, CE & FCC
		Brand / OS / Model IEC or ISA or equivalent Indian Cyber Security compliance
6	OEM / Bidder Criteria	Offered Brand should have direct presence in India
		Offered Brand should have direct & own Tech support center (TAC) in India
		Offered Brand should have direct & own service/repair center in India
		Offered Brand & Models should be reputed & field proven
		Bidder should have Registered office in Karnataka
		Bidder should have qualified technical support team locally
7	TEC Approval	Mandatory
8	Country of Origin	Non-MIC
9	Compatibility	All Switches should be from same Brand
10	PoC / Demo	PoC / Demo needs to be arranged during technical evaluation stage (if required). Bidder should have qualified Manpower to demonstrate
11	Warranty, Services and Support	Min 3 years Warranty
		On-site Installation, Configuration and troubleshooting support
		The offered model should be the latest. End of Sales (EoS) announced model or model going to be EoS in next 6 months should not be quoted
12	Documentation	Technical Compliance sheet with Cross Reference in OEM letterhead
		Technical Datasheet
		OEM MAF with complete contact details of authorised signatory
		Detailed Technical BoQ of Switch & Accessories with ordering code in OEM letterhead for technical evaluation
		In complete information will be treated as non-responsive bids

		Copy of all certifications mentioned in sections 5 & 7
13	Package Contents	24 Ports 1GbE RJ45 Switch + 4 x 10GbE SFP+ Uplink Ports with required warranty Necessary Port, Feature & OS License (If applicable) 1U Rack Mount Kit Console Cable AC Power Cord Installation Guide
14		Should be compatible to deploy with Eduroam with Dynamic VLAN. Storm control, IPv4 & IPv6 Access Control, setup of NITK and should be demonstrated before participating in the tender and MAF from the OEM should be submitted along with bid

48 Port 10/100/1000 Mbps + 4 x 10G Ports Managed Switch :

S/N	Parameter	Specification / Value
1	**Switch**	Make: Extreme Extreme/D-Link/HPE Aruba/TEJAS/QUANTUM/ Juniper/Cisco/Alcatel-Lucent
2	**Hardware**	
	Interfaces	1GbE RJ45 Ports - Min 48 or more 10GbE SFP+ Uplink Ports - Min 4 or more 1 RS-232 / RJ45 console port All Ports & Necessary Licenses to be quoted, supplied / enabled from day one
	Power Supply	Power Input: 110-240 V AC power
	Dimensions & Rack Installation	19-inch Rack Mount with Rack Installation Kit
	Environmental	Operating temperature: 0° to 50° C or Higher MTBF - > 3,06,600 Hours or Higher
3	**Performance**	
	Packet Buffer	Packet Buffer – Minimum 2 MBytes or Higher
	Switching Capacity	Packet Switching Capacity - Min 176 Gbps or higher Layer 2/Layer 3 throughput - Min 130 Mpps or higher
4	**Software Features**	
	Network Operating System	License should include all Advanced software features Switch should have Commercial Enterprise NOS from same OEM as Switch. Open Source based NOS not acceptable.
	Features	MAC addresses: Min 16K or Higher, VLAN Groups & VID: 4K or Higher, Jumbo frames: 9K or Higher, STP, RSTP, MSTP, Port

		Mirroring, VLAN - IEEE 802.1Q, Port-based, Voice VLAN, Loopback Detection & Protection (Independent of STP), IEEE 802.3ad: LACP, IGMP snooping: v1, v2, and v3, IGMP Filter, MLD Snooping, ARP, Min 4 or more IPv6 SVI / VLAN Interfaces, IPv4 & IPv6 DHCP Relay, IPv4 & IPv6 Static Routing, Cable Diagnostics, Digital Diagnostic Monitoring (DDM)
	Security	MAC, IPv4/v6 ACL, 802.1X - Port & Host based, RADIUS IPv4 & v6, TACACS+, Port Security, DAI, DHCP Snooping IPv4 & V6, IPSG IPv4 & v6, IPv6 ND Inspection, Storm control, SSH IPv4 & v6, SSL
	High Availability	IEEE 802.3ad / 802.1AX LACP, 8 LAGs with Min 8 Ports per LAG Dual Image & Dual Configurations
	Quality of Service (QoS)	L2 and L3 QoS: Classification, rewrite, queuing, Rate limiting SP, WRR / WDRR/SDWRR, 802.1p remarking
	Device Management and Operations	On-Premise Management, Role-based Full Featured CLI management, Full Featured Web-UI (IPv4 & IPv6), All the features should be configurable via CLI & Web-UI, SNMP IPv4 & IPv6, SNMP v1/v2/v3, SNMP Traps – Link, STP, Loop, Storm, Power, Fan, New MAC, Remote monitoring (RMON), NTP / SNTP, SSH v2 (IPv4 & v6), IEEE 802.1AB LLDP, IPv4/v6 Dual Stack
	NMS Monitoring	CPU, Memory, Port Utilization, SNMP Traps, Syslog, FDB Table Monitoring, Private MIB
5	Certifications / Compliance	Safety (ICT) – UL / EN 62368-1 or Better EMC - EN 55032, EN 61000-3-2, EN 61000-3-3, EN 55024 RoHS – EN/IEC 63000 or equivalent UL, CE & FCC Brand / OS / Model IEC or ISA or equivalent Indian Cyber Security compliance
6	OEM / Bidder Criteria	Offered Brand should have direct presence in India Offered Brand should have direct & own Tech support center (TAC) in India Offered Brand should have direct & own service/repair center in India Offered Brand & Models should be reputed & field proven Bidder should have Registered office in Karnataka Bidder should have qualified technical support team locally
7	TEC Approval	Mandatory

8	Country of Origin	Non-MIC
9	Compatibility	All Switches should be from same Brand
10	PoC / Demo	PoC / Demo needs to be arranged during technical evaluation stage (if required). Bidder should have qualified Manpower to demonstrate
11	Warranty, Services and Support	Min 3 years Warranty On-site Installation, Configuration and troubleshooting support The offered model should be the latest. End of Sales (EoS) announced model or model going to be EoS in next 6 months should not be quoted
12	Documentation	Technical Compliance sheet with Cross Reference in OEM letterhead Technical Datasheet OEM MAF with complete contact details of authorised signatory Detailed Technical BoQ of Switch & Accessories with ordering code in OEM letterhead for technical evaluation In complete information will be treated as non-responsive bids Copy of all certifications mentioned in sections 5 & 7
13	Package Contents	48 Ports 1GbE RJ45 Switch + 4 x 10GbE SFP+ Uplink Ports with required warranty Necessary Port, Feature & OS License (If applicable) 1U Rack Mount Kit Console Cable AC Power Cord Installation Guide
14		Should be compatible to deploy with Eduroam with Dynamic VLAN. Storm control, IPv4 & IPv6 Access Control, setup of NITK and should be demonstrated before participating in the tender and MAF from the OEM should be submitted along with bid

48 Port 10/100/1000 Mbps PoE + 4 x 10G Ports Managed Switch:

S/N	Parameter	Specification / Value
1	**Switch**	Make: Extreme/D-Link/HPE Aruba/Tejas/Quantum/Juniper/ Cisco/Alcatel-Lucent
2	**Hardware**	

	Interfaces	1GbE RJ45 PoE+ Ports - Min 48 or more 10GbE SFP+ Uplink Ports - Min 4 or more 1 RS-232 / RJ45 console port All Ports & Necessary Licenses to be quoted, supplied / enabled from day one
	Power Supply	Power Input: 110-240 V AC power
	Dimensions & Rack Installation	19-inch Rack Mount with Rack Installation Kit
	Environmental	Operating temperature: 0° to 50° C or Higher MTBF - > 3,06,600 Hours or Higher
3	**Performance**	
	Packet Buffer	Packet Buffer – Minimum 2 MBytes or Higher
	Switching Capacity	Packet Switching Capacity - Min 176 Gbps or higher Layer 2/Layer 3 throughput - Min 130 Mpps or higher
	Power over Ethernet (PoE)	IEEE 802.3af Power over Ethernet (PoE) / 802.3at Power over Ethernet (PoE+) Minimum 740W or higher PoE Power Budget PD Alive to check the status of PD Devices connected to PoE ports Time based PoE to allow power only during working hours & save power
4	**Software Features**	
	Network Operating System	License should include all Advanced software features Switch should have Commercial Enterprise NOS from the same OEM as Switch. Open Source based NOS is not acceptable.
	Features	MAC addresses: Min 16K or Higher, VLAN Groups & VID: 4K or Higher, Jumbo frames: 9K or Higher, STP, RSTP, MSTP, Port Mirroring, VLAN - IEEE 802.1Q, Port-based, Voice VLAN, Loopback Detection & Protection

		(Independent of STP), IEEE 802.3ad: LACP, IGMP snooping: v1, v2, and v3, IGMP Filter, MLD Snooping, ARP, Min 4 or more IPv6 SVI / VLAN Interfaces, IPv4 & IPv6 DHCP Relay, IPv4 & IPv6 Static Routing, Cable Diagnostics, Digital Diagnostic Monitoring (DDM)
	Security	MAC, IPv4/v6 ACL, 802.1X - Port & Host based, RADIUS IPv4 & v6, TACACS+, Port Security, DAI, DHCP Snooping IPv4 & V6, IPSG IPv4 & v6, IPv6 ND Inspection, Storm control, SSH IPv4 & v6, SSL
	High Availability	IEEE 802.3ad / 802.1AX LACP, 8 LAGs with Min 8 Ports per LAG Dual Image & Dual Configurations
	Quality of Service (QoS)	L2 and L3 QoS: Classification, rewrite, queuing, Rate limiting SP, WRR / WDRR/SDWRR, 802.1p remarking
	Device Management and Operations	On-Premise Management, Role-based Full Featured CLI management, Full Featured Web-UI (IPv4 & IPv6), All the features should be configurable via CLI & Web-UI, SNMP IPv4 & IPv6, SNMP v1/v2/v3, SNMP Traps – Link, STP, Loop, Storm, Power, Fan, New MAC, Remote monitoring (RMON), NTP / SNTP, SSH v2 (IPv4 & v6), IEEE 802.1AB LLDP, IPv4/v6 Dual Stack
	NMS Monitoring	CPU, Memory, Port Utilization, SNMP Traps, Syslog, FDB Table Monitoring, Private MIB
5	**Certifications / Compliance**	Safety (ICT) – UL / EN 62368-1 or Better EMC - EN 55032, EN 61000-3-2, EN 61000-3-3, EN 55024 RoHS – EN/IEC 63000 or equivalent UL, CE & FCC Brand / OS / Model IEC or ISA or equivalent Indian Cyber Security compliance

6	**OEM / Bidder Criteria**	Offered Brand should have direct presence in India
		Offered Brand should have direct & own Tech support center (TAC) in India
		Offered Brand should have direct & own service/repair center in India
		Offered Brand & Models should be reputed & field proven
		Bidder should have Registered office in Karnataka
		Bidder should have qualified technical support team locally
7	**TEC Approval**	Mandatory
8	**Country of Origin**	Non-MIC
9	**Compatibility**	All Switches should be from same Brand
10	**PoC / Demo**	PoC / Demo needs to be arranged during technical evaluation stage (if required). Bidder should have qualified Manpower to demonstrate
11	**Warranty, Services and Support**	Min 3 years Warranty
		On-site Installation, Configuration and troubleshooting support
		The offered model should be the latest. End of Sales (EoS) announced model or model going to be EoS in next 6 months should not be quoted
12	**Documentation**	Technical Compliance sheet with Cross Reference in OEM letterhead
		Technical Datasheet
		OEM MAF with complete contact details of authorised signatory
		Detailed Technical BoQ of Switch & Accessories with ordering code in OEM letterhead for technical evaluation
		In complete information will be treated as non-responsive bids
		Copy of all certifications mentioned in sections 5 & 7
13	**Package Contents**	48 Ports 1GbE RJ45 PoE+ Switch + 4 x 10GbE SFP+ Uplink Ports with required warranty

		Necessary Port, Feature & OS License (If applicable) 1U Rack Mount Kit Console Cable AC Power Cord Installation Guide
14		Should be compatible to deploy with Eduroam with Dynamic VLAN. Storm control, IPv4 & IPv6 Access Control, setup of NITK and should be demonstrated before participating in the tender and MAF from the OEM should be submitted along with bid

24 Port 10/100/1000 Mbps POE + 4 x 10G Ports Stackable Managed switch:

S/N	Parameter	Specification / Value
1	**Switch**	Make: Extreme/D-Link/HPE Aruba/TEJAS/QUANTUM/Juniper/Cisco/Alcatel-Lucent
2	**Hardware**	
	Interfaces	1GbE RJ45 PoE+ Ports - Min 24 or more 10GbE SFP+ Uplink Ports - Min 4 or more 1 RS-232 / RJ45 console port All Ports & Necessary Licenses to be quoted, supplied / enabled from day one
	Power Supply	Power Input: 110-240 V AC power
	Dimensions & Rack Installation	19-inch Rack Mount with Rack Installation Kit
	Environmental	Operating temperature: 0° to 50° C or Higher MTBF - > 3,06,600 Hours or Higher
3	**Performance**	
	Packet Buffer	Packet Buffer – Minimum 1.5 MBytes or Higher
	Switching Capacity	Packet Switching Capacity - Min 128 Gbps or higher Layer 2/Layer 3 throughput - Min 95 Mpps or higher
	Power over Ethernet (PoE)	IEEE 802.3af Power over Ethernet (PoE) / 802.3at Power over Ethernet (PoE+) Minimum 370W or higher PoE Power Budget PD Alive to check the status of PD Devices connected to PoE ports Time based PoE to allow power only during working hours & save power
4	**Software Features**	

	Network Operating System	License should include all Advanced software features Switch should have Commercial Enterprise NOS from same OEM as Switch. Open Source based NOS not acceptable.
	Features	MAC addresses: Min 16K or Higher, VLAN Groups & VID: 4K or Higher, Jumbo frames: 9K or Higher, STP, RSTP, MSTP, Port Mirroring, VLAN - IEEE 802.1Q, Port-based, Voice VLAN, Loopback Detection & Protection (Independent of STP), IEEE 802.3ad: LACP, IGMP snooping: v1, v2, and v3, IGMP Filter, MLD Snooping, ARP, Min 4 or more IPv6 SVI / VLAN Interfaces, IPv4 & IPv6 DHCP Relay, IPv4 & IPv6 Static Routing, Cable Diagnostics, Digital Diagnostic Monitoring (DDM)
	Security	MAC, IPv4/v6 ACL, 802.1X - Port & Host based, RADIUS IPv4 & v6, TACACS+, Port Security, DAI, DHCP Snooping IPv4 & V6, IPSG IPv4 & v6, IPv6 ND Inspection, Storm control, SSH IPv4 & v6, SSL
	High Availability	IEEE 802.3ad / 802.1AX LACP, 8 LAGs with Min 8 Ports per LAG Dual Image & Dual Configurations
	Stacking support	Should support physical stacking of upto 8 switches in a stack
	Quality of Service (QoS)	L2 and L3 QoS: Classification, rewrite, queuing, Rate limiting SP, WRR / WDRR/SDWRR, 802.1p remarking
	Device Management and Operations	On-Premise Management, Role-based Full Featured CLI management, Full Featured Web-UI (IPv4 & IPv6), All the features should be configurable via CLI & Web-UI, SNMP IPv4 & IPv6, SNMP v1/v2/v3, SNMP Traps – Link, STP, Loop, Storm, Power, Fan, New MAC, Remote monitoring (RMON), NTP / SNTP, SSH v2 (IPv4 & v6), IEEE 802.1AB LLDP, IPv4/v6 Dual Stack
	NMS Monitoring	CPU, Memory, Port Utilization, SNMP Traps, Syslog, FDB Table Monitoring, Private MIB
5	Certifications / Compliance	Safety (ICT) – UL / EN 62368-1 or Better EMC - EN 55032, EN 61000-3-2, EN 61000-3-3, EN 55024 RoHS – EN/IEC 63000 or equivalent UL, CE & FCC Brand / OS / Model IEC or ISA or equivalent Indian Cyber Security compliance
	IPv6 Compliance	Should be IPv6 logo ready from day-1
6	OEM / Bidder Criteria	Offered Brand should have direct presence in India Offered Brand should have direct & own Tech support center (TAC) in India Offered Brand should have direct & own service/repair center in India

		Offered Brand & Models should be reputed & field proven
		Bidder should have Registered office in Karnataka
		Bidder should have qualified technical support team locally
7	TEC Approval	Mandatory
8	Country of Origin	Non-MIC
9	Compatibility	All Switches should be from same Brand
10	PoC / Demo	PoC / Demo needs to be arranged during technical evaluation stage (if required). Bidder should have qualified Manpower to demonstrate
11	Warranty, Services and Support	Min 3 years Warranty On-site Installation, Configuration and troubleshooting support The offered model should be the latest. End of Sales (EoS) announced model or model going to be EoS in next 6 months should not be quoted
12	Documentation	Technical Compliance sheet with Cross Reference in OEM letterhead Technical Datasheet OEM MAF with complete contact details of authorised signatory Detailed Technical BoQ of Switch & Accessories with ordering code in OEM letterhead for technical evaluation In complete information will be treated as non-responsive bids Copy of all certifications mentioned in sections 5 & 7
13	Package Contents	24 Ports 1GbE RJ45 PoE+ Switch + 4 x 10GbE SFP+ Uplink Ports with required warranty Necessary Port, Feature & OS License (If applicable) 1U Rack Mount Kit Console Cable AC Power Cord Installation Guide
14		Should be compatible to deploy with Eduroam with Dynamic VLAN. Storm control, IPv4 & IPv6 Access Control, setup of NITK and should be demonstrated before participating in the tender and MAF from the OEM should be submitted along with bid

24 Port 10/100/1000 Mbps + 4 x 10G Ports Stackable Managed Switch:

S/N	Parameter	Specification / Value
1	**Switch**	Make: Extreme/D-Link/HPE Aruba/Tejas/Quantum/Juniper/ Cisco/Alcatel-Lucent
2	**Hardware**	

	Interfaces	1GbE RJ45 Ports - Min 24 or more 10GbE SFP+ Uplink Ports - Min 4 or more 1 RS-232 / RJ45 console port All Ports & Necessary Licenses to be quoted, supplied / enabled from day one
	Power Supply	Power Input: 110-240 V AC power
	Dimensions & Rack Installation	19-inch Rack Mount with Rack Installation Kit
	Environmental	Operating temperature: 0° to 50° C or Higher MTBF - > 3,06,600 Hours or Higher
3	**Performance**	
	Packet Buffer	Packet Buffer – Minimum 1.5 MBytes or Higher
	Switching Capacity	Packet Switching Capacity - Min 128 Gbps or higher Layer 2/Layer 3 throughput - Min 95 Mpps or higher
4	**Software Features**	
	Network Operating System	License should include all Advanced software features Switch should have Commercial Enterprise NOS from the same OEM as Switch. Open Source based NOS is not acceptable.
	Features	MAC addresses: Min 16K or Higher, VLAN Groups & VID: 4K or Higher, Jumbo frames: 9K or Higher, STP, RSTP, MSTP, Port Mirroring, VLAN - IEEE 802.1Q, Port-based, Voice VLAN, Loopback Detection & Protection (Independent of STP), IEEE 802.3ad: LACP, IGMP snooping: v1, v2, and v3, IGMP Filter, MLD Snooping, ARP, Min 4 or more IPv6 SVI / VLAN Interfaces, IPv4 & IPv6 DHCP Relay, IPv4 & IPv6 Static Routing, Cable Diagnostics Digital Diagnostic Monitoring (DDM)
	Security	MAC, IPv4/v6 ACL, 802.1X - Port & Host based, RADIUS IPv4 & v6, TACACS+, Port Security, DAI, DHCP Snooping IPv4 & V6, IPSG IPv4 & v6, IPv6 ND Inspection, Storm control, SSH IPv4 & v6, SSL
	High Availability	IEEE 802.3ad / 802.1AX LACP, 8 LAGs with Min 8 Ports per LAG Dual Image & Dual Configurations
	Stacking support	Should support physical stacking of upto 8 switches in a stack
	Quality of Service (QoS)	L2 and L3 QoS: Classification, rewrite, queuing, Rate limiting SP, WRR / WDRR/SDWRR, 802.1p remarking

	Device Management and Operations	On-Premise Management, Role-based Full Featured CLI management, Full Featured Web-UI (IPv4 & IPv6), All the features should be configurable via CLI & Web-UI, SNMP IPv4 & IPv6, SNMP v1/v2/v3, SNMP Traps – Link, STP, Loop, Storm, Power, Fan, New MAC, Remote monitoring (RMON), NTP / SNTP, SSH v2 (IPv4 & v6), IEEE 802.1AB LLDP, IPv4/v6 Dual Stack
	NMS Monitoring	CPU, Memory, Port Utilization, SNMP Traps, Syslog, FDB Table Monitoring, Private MIB
5	Certifications / Compliance	Safety (ICT) – UL / EN 62368-1 or Better EMC - EN 55032, EN 61000-3-2, EN 61000-3-3, EN 55024 RoHS – EN/IEC 63000 or equivalent UL, CE & FCC Brand / OS / Model IEC or ISA or equivalent Indian Cyber Security compliance
	IPv6 Compliance	Should be IPv6 logo ready from day-1
6	OEM / Bidder Criteria	Offered Brand should have direct presence in India Offered Brand should have direct & own Tech support center (TAC) in India Offered Brand should have direct & own service/repair center in India Offered Brand & Models should be reputed & field proven Bidder should have Registered office in Karnataka Bidder should have qualified technical support team locally
7	TEC Approval	Mandatory
8	Country of Origin	Non-MIC
9	Compatibility	All Switches should be from same Brand
10	PoC / Demo	PoC / Demo needs to be arranged during technical evaluation stage (if required). Bidder should have qualified Manpower to demonstrate
11	Warranty, Services and Support	Min 3 years Warranty On-site Installation, Configuration and troubleshooting support The offered model should be the latest. End of Sales (EoS) announced model or model going to be EoS in next 6 months should not be quoted
12	Documentation	Technical Compliance sheet with Cross Reference in OEM letterhead Technical Datasheet OEM MAF with complete contact details of authorised signatory

		Detailed Technical BoQ of Switch & Accessories with ordering code in OEM letterhead for technical evaluation
		In complete information will be treated as non-responsive bids
		Copy of all certifications mentioned in sections 5 & 7
13	Package Contents	24 Ports 1GbE RJ45 Switch + 4 x 10GbE SFP+ Uplink Ports with required warranty
		Necessary Port, Feature & OS License (If applicable)
		1U Rack Mount Kit
		Console Cable
		AC Power Cord
		Installation Guide
14		Should be compatible to deploy with Eduroam with Dynamic VLAN. Storm control, IPv4 & IPv6 Access Control, setup of NITK and should be demonstrated before participating in the tender and MAF from the OEM should be submitted along with bid

48 Port 10/100/1000 Mbps + 4 x 10G Ports Stackable Managed Switch :

S/N	Parameter	Specification / Value
1	**Switch**	Make: Extreme Extreme/D-Link/HPE Aruba/Tejas/Quantum/ Juniper/Cisco/Alcatel-Lucent
2	**Hardware**	
	Interfaces	1GbE RJ45 Ports - Min 48 or more
		10GbE SFP+ Uplink Ports - Min 4 or more
		1 RS-232 / RJ45 console port
		All Ports & Necessary Licenses to be quoted, supplied / enabled from day one
	Power Supply	Power Input: 110-240 V AC power
	Dimensions & Rack Installation	19-inch Rack Mount with Rack Installation Kit
	Environmental	Operating temperature: 0° to 50° C or Higher
		MTBF - > 3,06,600 Hours or Higher
3	**Performance**	
	Packet Buffer	Packet Buffer – Minimum 2 MBytes or Higher
	Switching Capacity	Packet Switching Capacity - Min 176 Gbps or higher
		Layer 2/Layer 3 throughput - Min 130 Mpps or higher
4	**Software Features**	
	Network Operating System	License should include all Advanced software features Switch should have Commercial Enterprise NOS from the same OEM as Switch. Open Source based NOS is not acceptable.

	Features	MAC addresses: Min 16K or Higher, VLAN Groups & VID: 4K or Higher, Jumbo frames: 9K or Higher, STP, RSTP, MSTP, Port Mirroring, VLAN - IEEE 802.1Q, Port-based, Voice VLAN, Loopback Detection & Protection (Independent of STP), IEEE 802.3ad: LACP, IGMP snooping: v1, v2, and v3, IGMP Filter, MLD Snooping, ARP, Min 4 or more IPv6 SVI / VLAN Interfaces, IPv4 & IPv6 DHCP Relay, IPv4 & IPv6 Static Routing, Cable Diagnostics, Digital Diagnostic Monitoring (DDM)
	Security	MAC, IPv4/v6 ACL, 802.1X - Port & Host based, RADIUS IPv4 & v6, TACACS+, Port Security, DAI, DHCP Snooping IPv4 & V6, IPSG IPv4 & v6, IPv6 ND Inspection, Storm control, SSH IPv4 & v6, SSL
	High Availability	IEEE 802.3ad / 802.1AX LACP, 8 LAGs with Min 8 Ports per LAG Dual Image & Dual Configurations
	Stacking support	Should support physical stacking of upto 8 switches in a stack
	Quality of Service (QoS)	L2 and L3 QoS: Classification, rewrite, queuing, Rate limiting SP, WRR / WDRR/SDWRR, 802.1p remarking
	Device Management and Operations	On-Premise Management, Role-based Full Featured CLI management, Full Featured Web-UI (IPv4 & IPv6), All the features should be configurable via CLI & Web-UI, SNMP IPv4 & IPv6, SNMP v1/v2/v3, SNMP Traps – Link, STP, Loop, Storm, Power, Fan, New MAC, Remote monitoring (RMON), NTP / SNTP, SSH v2 (IPv4 & v6), IEEE 802.1AB LLDP, IPv4/v6 Dual Stack
	NMS Monitoring	CPU, Memory, Port Utilization, SNMP Traps, Syslog, FDB Table Monitoring, Private MIB
5	Certifications / Compliance	Safety (ICT) – UL / EN 62368-1 or Better EMC - EN 55032, EN 61000-3-2, EN 61000-3-3, EN 55024 RoHS – EN/IEC 63000 or equivalent UL, CE & FCC Brand / OS / Model IEC or ISA or equivalent Indian Cyber Security compliance
	IPv6 Compliance	Should be IPv6 logo ready from day-1
6	OEM / Bidder Criteria	Offered Brand should have direct presence in India Offered Brand should have direct & own Tech support center (TAC) in India Offered Brand should have direct & own service/repair center in India

		Offered Brand & Models should be reputed & field proven
		Bidder should have Registered office in Karnataka
		Bidder should have qualified technical support team locally
7	TEC Approval	Mandatory
8	Country of Origin	Non-MIC
9	Compatibility	All Switches should be from same Brand
10	PoC / Demo	PoC / Demo needs to be arranged during technical evaluation stage (if required). Bidder should have qualified Manpower to demonstrate
11	Warranty, Services and Support	Min 3 years Warranty On-site Installation, Configuration and troubleshooting support The offered model should be the latest. End of Sales (EoS) announced model or model going to be EoS in next 6 months should not be quoted
12	Documentation	Technical Compliance sheet with Cross Reference in OEM letterhead Technical Datasheet OEM MAF with complete contact details of authorised signatory Detailed Technical BoQ of Switch & Accessories with ordering code in OEM letterhead for technical evaluation In complete information will be treated as non-responsive bids Copy of all certifications mentioned in sections 5 & 7
13	Package Contents	48 Ports 1GbE RJ45 Switch + 4 x 10GbE SFP+ Uplink Ports with required warranty Necessary Port, Feature & OS License (If applicable) 1U Rack Mount Kit Console Cable AC Power Cord Installation Guide
14		Should be compatible to deploy with Eduroam with Dynamic VLAN. Storm control, IPv4 & IPv6 Access Control, setup of NITK and should be demonstrated before participating in the tender and MAF from the OEM should be submitted along with bid

48 Port 10/100/1000 Mbps PoE + 4 x 10G Ports Stackable Managed Switch:

S/N	Parameter	Specification / Value

1	**Switch**	Make: Extreme/D-Link/HPE Aruba/Tejas/Quantum/Juniper/ Cisco/Alcatel-Lucent
2	**Hardware**	
	Interfaces	1GbE RJ45 PoE+ Ports - Min 48 or more 10GbE SFP+ Uplink Ports - Min 4 or more 1 RS-232 / RJ45 console port All Ports & Necessary Licenses to be quoted, supplied / enabled from day one
	Power Supply	Power Input: 110-240 V AC power
	Dimensions & Rack Installation	19-inch Rack Mount with Rack Installation Kit
	Environmental	Operating temperature: 0° to 50° C or Higher MTBF - > 3,06,600 Hours or Higher
3	**Performance**	
	Packet Buffer	Packet Buffer – Minimum 2 MBytes or Higher
	Switching Capacity	Packet Switching Capacity - Min 176 Gbps or higher Layer 2/Layer 3 throughput - Min 130 Mpps or higher
	Power over Ethernet (PoE)	IEEE 802.3af Power over Ethernet (PoE) / 802.3at Power over Ethernet (PoE+) Minimum 740W or higher PoE Power Budget PD Alive to check the status of PD Devices connected to PoE ports Time based PoE to allow power only during working hours & save power
4	**Software Features**	
	Network Operating System	License should include all Advanced software features Switch should have Commercial Enterprise NOS from the same OEM as Switch. Open Source based NOS is not acceptable.
	Features	MAC addresses: Min 16K or Higher, VLAN Groups & VID: 4K or Higher, Jumbo frames: 9K or Higher, STP,

		RSTP, MSTP, Port Mirroring, VLAN - IEEE 802.1Q, Port-based, Voice VLAN, Loopback Detection & Protection (Independent of STP), IEEE 802.3ad: LACP, IGMP snooping: v1, v2, and v3, IGMP Filter, MLD Snooping, ARP, Min 4 or more IPv6 SVI / VLAN Interfaces, IPv4 & IPv6 DHCP Relay, IPv4 & IPv6 Static Routing, Cable Diagnostics, Digital Diagnostic Monitoring (DDM)
	Security	MAC, IPv4/v6 ACL, 802.1X - Port & Host based, RADIUS IPv4 & v6, TACACS+, Port Security, DAI, DHCP Snooping IPv4 & V6, IPSG IPv4 & v6, IPv6 ND Inspection, Storm control, SSH IPv4 & v6, SSL
	High Availability	IEEE 802.3ad / 802.1AX LACP, 8 LAGs with Min 8 Ports per LAG Dual Image & Dual Configurations
	Stacking support	Should support physical stacking of upto 8 switches in a stack
	Quality of Service (QoS)	L2 and L3 QoS: Classification, rewrite, queuing, Rate limiting SP, WRR / WDRR/SDWRR, 802.1p remarking
	Device Management and Operations	On-Premise Management, Role-based Full Featured CLI management, Full Featured Web-UI (IPv4 & IPv6), All the features should be configurable via CLI & Web-UI, SNMP IPv4 & IPv6, SNMP v1/v2/v3, SNMP Traps – Link, STP, Loop, Storm, Power, Fan, New MAC, Remote monitoring (RMON), NTP / SNTP, SSH v2 (IPv4 & v6), IEEE 802.1AB LLDP, IPv4/v6 Dual Stack
	NMS Monitoring	CPU, Memory, Port Utilization, SNMP Traps, Syslog, FDB Table Monitoring, Private MIB
5	**Certifications / Compliance**	Safety (ICT) – UL / EN 62368-1 or Better
		EMC - EN 55032, EN 61000-3-2, EN 61000-3-3, EN 55024
		RoHS – EN/IEC 63000 or equivalent

		UL, CE & FCC
		Brand / OS / Model IEC or ISA or equivalent Indian Cyber Security compliance
	IPv6 Compliance	Should be IPv6 logo ready from day-1
6	**OEM / Bidder Criteria**	Offered Brand should have direct presence in India
		Offered Brand should have direct & own Tech support center (TAC) in India
		Offered Brand should have direct & own service/repair center in India
		Offered Brand & Models should be reputed & field proven
		Bidder should have Registered office in Karnataka
		Bidder should have qualified technical support team locally
7	**TEC Approval**	Mandatory
8	**Country of Origin**	Non-MIC
9	**Compatibility**	All Switches should be from same Brand
10	**PoC / Demo**	PoC / Demo needs to be arranged during technical evaluation stage (if required). Bidder should have qualified Manpower to demonstrate
11	**Warranty, Services and Support**	Min 3 years Warranty
		On-site Installation, Configuration and troubleshooting support
		The offered model should be the latest. End of Sales (EoS) announced model or model going to be EoS in next 6 months should not be quoted
12	**Documentation**	Technical Compliance sheet with Cross Reference in OEM letterhead
		Technical Datasheet
		OEM MAF with complete contact details of authorised signatory
		Detailed Technical BoQ of Switch & Accessories with ordering code in OEM letterhead for technical evaluation
		In complete information will be treated as non-responsive bids

		Copy of all certifications mentioned in sections 5 & 7
13	**Package Contents**	48 Ports 1GbE RJ45 PoE+ Switch + 4 x 10GbE SFP+ Uplink Ports with required warranty Necessary Port, Feature & OS License (If applicable) 1U Rack Mount Kit Console Cable AC Power Cord Installation Guide
14		Should be compatible to deploy with Eduroam with Dynamic VLAN. Storm control, IPv4 & IPv6 Access Control, setup of NITK and should be demonstrated before participating in the tender and MAF from the OEM should be submitted along with bid

GPON OLT - 4 Port:

Technical Specification
PON ports: 4 GPON ports With Loaded 4 No's C++++ PON Module
Uplink Ports: 4 RJ45, 2 SFP and 2 SFP+
Console port
AUX port
Backplane BW: 104 Gbps
Switching capacity: 92 Gbps
Port Forwarding rate: 65.472 Mpps
GPON port speed: Upstream: 1.244Gbps and Downstream: 2.488Gbps
Connector : SC/UPC
Fiber type : Single Mode 9/125
Wavelength:TX : 1490nm , RX : 1310nm
Management Function:
SNMP, Telnet,CLI,WEB,SSH v2;
Fan Group Control
Port Status monitoring and configuration management
Online ONT configuration and management
User management
Alarm management
Layer2 Switch:
32K Mac address
Support 4096 VLANs
Support port VLAN
Support VLAN tag/Un-tag, VLAN transparent transmission

Support VLAN translation and QinQ
Support storm control based on port
Support port isolation
Support port rate limitation
Support 8021D and 8021W
Support static LACP, Dynamic LACP
QoS based on port, VID, TOS and MAC address
Access control list
IEEE 802x flow-control
Port stability statistic and monitoring
Multicast:
IGMP snooping
2048 IP Multicast Groups
DHCP:
DHCP server, DHCP relay, DHCP snooping
DHCP option82
Layer 3 Route:
ARP proxy
4096 hardware Host Routes,512 hardware Subnet Routes
Support 8021X,Radius,Tacacs+
Support IP source guard
Support static route,dynamic route RIP v1/v2,RIPng and OSPF v2/v3
IPv6:
Support NDP; Support IPv6 Ping, IPv6 Telnet, IPv6 routing;
Support ACL based on source IPv6 address, destination IPv6 address, L4 port, protocol type, etc;
Support MLD v1/v2 snooping (Multicast Listener Discovery snooping)
GPON Function:
Tcont DBA
Gemport traffic
In compliant with ITU-T984x standard
Up to 20KM transmission Distance
Support data encryption, multi-cast, port VLAN, separation, RSTP, etc
Support ONT auto-discovery/link detection/remote upgrade of software
Support VLAN division and user separation to avoid broadcast storm
Support power-off alarm function, easy for link problem detection
Support broadcasting storm resistance function
Support port isolation between different ports
Support ACL and SNMP to configure data packet filter flexibly
Specialized design for system breakdown prevention to maintain stable system
Support RSTP,IGMP Proxy
Power Consumption:45W
Working Temperature :0°C ~+50°C

Storage Temperature: -40~+85°C
Relative Humidity: 5~90% (non-condensing)
TEC certified
OLT should be compatible to deploy with Eduroam setup of NITK and should be demonstrated before participating in the tender
MAF from the OEM should be submitted along with bid

GPON OLT - 8 Port:

Technical Specification
PON ports: 8 GPON ports With Loaded 8 No's C++++ PON Module
Uplink Ports: 4 RJ45, 2 SFP and 2 SFP+
Console port
AUX port
Backplane BW: 104 Gbps
Switching capacity: 92 Gbps
Port Forwarding rate: 65.472 Mpps
GPON port speed: Upstream: 1.244Gbps and Downstream: 2.488Gbps
Connector: SC/UPC
Fiber type: Single Mode 9/125
Wavelength: TX : 1490nm, RX : 1310nm
Management Function:
SNMP, Telnet, CLI, WEB, SSH v2
Fan Group Control
Port Status monitoring and configuration management
Online ONT configuration and management
User management
Alarm management
Layer2 Switch:
32K Mac address
Support 4096 VLANs
Support port VLAN
Support VLAN tag/Un-tag, VLAN transparent transmission
Support VLAN translation and QinQ
Support storm control based on port
Support port isolation
Support port rate limitation
Support 8021D and 8021W
Support static LACP, Dynamic LACP
QoS based on port, VID, TOS and MAC address
Access control list
IEEE 802x flow-control
Port stability statistic and monitoring
Multicast:

IGMP snooping
2048 IP Multicast Groups
DHCP:
DHCP server, DHCP relay, DHCP snooping
DHCP option82
Layer 3 Route:
ARP proxy
4096 hardware Host Routes,512 hardware Subnet Routes
Support 8021X, Radius, Tacacs+
Support IP source guard
Support static route, dynamic route RIP v1/v2, RIPng and OSPF v2/v3
IPv6:
Support NDP;Support IPv6 Ping,IPv6 Telnet,IPv6 routing;
Support ACL based on source IPv6 address,destination IPv6 address, L4 port, protocol type, etc;
Support MLD v1/v2 snooping(Multicast Listener Discovery snooping)
GPON Function:
Tcont DBA
Gemport traffic
In compliant with ITU-T984x standard
Up to 20KM transmission Distance
Support data encryption, multi-cast, port VLAN, separation, RSTP, etc
Support ONT auto-discovery/link detection/remote upgrade of software
Support VLAN division and user separation to avoid broadcast storm
Support power-off alarm function, easy for link problem detection
Support broadcasting storm resistance function
Support port isolation between different ports
Support ACL and SNMP to configure data packet filter flexibly
Specialized design for system breakdown prevention to maintain stable system
Support RSTP, IGMP Proxy
Power Consumption:45W
Working Temperature :0°C ~+50°C
Storage Temperature: -40~+85°C
Relative Humidity: 5~90% (non-condensing)
TEC certified
OLT should be compatible to deploy with Eduroam setup of NITK and should be demonstrated before participating in the tender
MAF from the OEM should be submitted along with bid

GPON OLT - 16 Port:

Technical Specification
PON ports: 16 GPON ports With Loaded 16 No's C++++ PON Module
Uplink Ports: 4 RJ45 , 2 SFP and 2 SFP+

Console port
AUX port
Backplane BW: 104 Gbps
Switching capacity: 92 Gbps
Port Forwarding rate: 65.472 Mpps
GPON port speed:Upstream: 1.244Gbps and Downstream : 2.488Gbps
Connector: SC/UPC
Fiber type: Single Mode 9/125
Wavelength: TX: 1490nm, RX : 1310nm
Management Function:
SNMP, Telnet, CLI, WEB, SSHv2
Fan Group Control
Port Status monitoring and configuration management
Online ONT configuration and management
User management
Alarm management
Layer2 Switch:
32K Mac address
Support 4096 VLANs
Support port VLAN
Support VLAN tag/Un-tag, VLAN transparent transmission
Support VLAN translation and QinQ
Support storm control based on port
Support port isolation
Support port rate limitation
Support 8021D and 8021W
Support static LACP, Dynamic LACP
QoS based on port, VID, TOS and MAC address
Access control list
IEEE 802x flow-control
Port stability statistic and monitoring
Multicast:
IGMP snooping
2048 IP Multicast Groups
DHCP:
DHCP server, DHCP relay, DHCP snooping
DHCP option82
Layer 3 Route:
ARP proxy
4096 hardware Host Routes,512 hardware Subnet Routes
Support 8021X, Radius, Tacacs+
Support IP source guard

Support static route, dynamic route RIP v1/v2, RIPng and OSPF v2/v3
IPv6:
Support NDP;Support IPv6 Ping,IPv6 Telnet,IPv6 routing;
Support ACL based on source IPv6 address, destination IPv6 address, L4 port, protocol type, etc;
Support MLD v1/v2 snooping (Multicast Listener Discovery snooping)
GPON Function:
Tcont DBA
Gemport traffic
In compliant with ITU-T984x standard
Up to 20KM transmission Distance
Support data encryption, multi-cast, port VLAN, separation, RSTP, etc
Support ONT auto-discovery/link detection/remote upgrade of software
Support VLAN division and user separation to avoid broadcast storm
Support power-off alarm function, easy for link problem detection
Support broadcasting storm resistance function
Support port isolation between different ports
Support ACL and SNMP to configure data packet filter flexibly
Specialized design for system breakdown prevention to maintain stable system
Support RSTP,IGMP Proxy
Power Consumption:45W
Working Temperature :0°C ~+50°C
Storage Temperature: -40~+85°C
Relative Humidity : 5~90% (non-condensing)
TEC certified
OLT should be compatible to deploy with Eduroam setup of NITK and should be demonstrated before participating in the tender
MAF from the OEM should be submitted along with bid

XPON ONU Router with 1 PON and 1 Giga Port:

Technical Specification
Interface type: 1 * 10/100/1000 Mbps auto adaptive ethernet interface Full /Half duplex RJ45 Connector • 1 XPON port (EPON PX20+ and GPON Class B+)
SC single-mode / single-fiber symmetric 1.25 Gbps
SC single-mode / single-fiber Downstream : 2.5 Gbps , Upstream : 1.25 Gbps
GPON support
EPON Support
Wavelength : Tx: 1310 nm, Rx :1490 nm
Sensitivity :< - 27 dBm (PX20+)
Overload: >   - 8dBm (PX20+)
Transmitting Optical Power : 0 - 4dBm

OpticalType: SC/PC type
VLAN
Support VLAN tag mode
Support VLAN trunk mode
Support VLAN transparent mode
Support VLAN 1:1 translation mode (max 8 VLANs)
LAN port should support trunking of 8 VLANs
Alarm
Support Dying Gasp
Support Port Loop Detect
Support Eth Port Los
Basic
Support MPCP discover and register
Support Authentication MAC/LOID/MAC+LOID
Support Triple Churning
Support DBA bandwidth
LED indicators
SYS, LINK/ACT, REG
Multicast
Support IGMP v1/v2
Support IGMP Snooping
L3
Support IPv4, IPv6 and IPv4/IPv6 dual stack
Support DHCP / PPPoE/ Static
Support Static route
Support NAT
Management
Support CTC OAM
Support WEB
Support TELNET
Support CLI
QoS
Support 4 Queues
Support SP and WRR
Support 802.1P
DC power supply: 12V external AC-DC adapter
Power Consumption: <=4W
Operating temperature : -30 to +70°C
Operating Humidity: 10 to 90 % (non-condensed)
Storing temperature: -30 to +70°C
Storing Humidity: 10 to 90 % (non-condensed)
Features

Plug and Play
Auto config and Auto FW upgrade
Integrated OAM remote config and maintenance function
TEC certified
ONU should be compatible to deploy with Eduroam setup of NITK and should be demonstrated before participating in the tender
MAF from the OEM should be submitted along with bid

XPON ONU Router with 1 PON, 1 Gigabit LAN port and 1 FXS port
PON • 1 XPON port (EPON PX20+ and GPON Class B+) • SC single mode, SC/UPC connector • TX optical power: 0～+4dBm • RX sensitivity: -27dBm • Overload optical power: -3dBm(EPON) or -8dBm (GPON) • Transmission distance: 20KM • Wavelength: TX 1310nm, Rx1490nm
Interface Type • 1*GE, Auto-negotiation, RJ45 ports • 1*POTS Connecto
Indicators • PWR, PON, LOS, WAN, LAN, PHONE
Basic • Full speed non-blocking switching • 4K VLAN ID • Support auto polarity detection of Ethernet ports (AUTO MDIX)
Security • Support Firewall • Support Mac filter Based on MAC or URL • Support ACL
VLAN • Support VLAN tag mode • Support VLAN trunk mode • Support VLAN translation
Multicast • Support IGMP and MLD snooping

VoIP • SIP and IMS SIP • G.711a/G.711u/G.722/G.729 Codec • Echo cancellation, VAD/CNG, DTMF Relay • T.30/T.38 FAX • Caller Identification/Call Waiting/Call Forwarding/Call Transfer/Call Hold/3-way Conference • Line testing according to GR-909
QoS • Support 4 queues • Support SP and WRR • Support 802.1P and DSCP
L3 • Support IPv4, IPv6 and IPv4/IPv6 dual stack • Support DHCP/PPPOE/Static • Support Static route • Support DHCP Server • Support DDNS • Support DMZ and Port Forwarding
Management • Support WEB • Support OAM/OMCI • Support Telnet • Support TR069
Power consumption • ≤10W
Storing humidity • 10% ~ 90% (non-condensing)
Operating temperature • 0°C ~ +55°C
Operating humidity • 10% ~ 90% (non-condensing)
Storing temperature • -30°C ~ +60°C
Dimensions • 100mm*92mm*29.5mm (L×W×H)
Net Weight • 0.11kg
DC Power Supply • DC 12V / 1A, external AC-DC power adapter
Made in India
Manufacturing plant / factory in India
Online Support available

Warranty: 3 years	
TEC certified	

GPON-GEPON ONU 300 Mbps WiFi Router with 1PON -2GE LAN ports and 1FXS Port

Specification
XPON ONU 300Mbps Wireless Router • LAN Port: 1 x 10/100/1000 Mbps + 1 x 10/100 Mbps Auto adaptive Ethernet Interface Full /Half duplex RJ45 Connector • 1 FXS (Voice Port) • WAN Port : SC/PC (Optical Type)
PON Interface: SC single-mode / single-fiber • Upstream :1.25 Gbps • Downstream 2.488 Gbps
Wavelength: • Transmission wavelength: 1310 nm • Receiver wavelength 1490 nm
Sensitivity • Receiver Sensitivity: -8dBm to -27dBm
Wireless : Compliant with IEEE 802.11 b/g/n , 300 Mbps, 2T2R with Two external antenna
Indicators: Power , LOS , PON, LAN2, LAN1 , TEL, Wi-Fi, Pair
VLAN • Support VLAN tag mode • Support 1:1 VLAN • Support VLAN trunk mode
Multicast • Support IGMP Snooping • Support MLD Snooping
QoS • Support 4 Queues • Support SP and WRR • Support 802.1P • Support DSCP
Layer 3 • Support IPv4/IPv6 and IPv4/IPv6 Dual Stack • Support DHCP/ PPPoE/ Static • Support DDNS • Support Static Route • Support NAT • Support Virtual Server • Support DMZ
DHCP • Support DHCP Server

VoiP • Support SIP Protocol • Support Voice coding : ITU-T G.711/ G.723 / G.726 / G.729 • Support Echo cancellation exceeding ITU-T G.165 / G.168-2002 upto 128ms tail length • Support high/low speed fax/modem • Support bypass fax and T38 fax • Support MD5 authentication • Support Inband / RFC2833 / SIP INFO • Support call forward, call waiting , hot-line call • Support multi party conferencing • Support line testing according to GR-909
Wireless • Support 802.11 b/g/n and mixed mode • Support 4 SSID • Support No-auth , WEP, WPA-PSK and WPA2-PSK • Support AES , TKIP encryption
Security • Support Firewall • Support MAC filter • Support ACL • Support URL Filter
Management • Support CTC OAM 2.0 and 2.1 • Support ITU-T 984.x OMCI • Support WEB • Support TR069 • Support Telnet
Ambient temperature: • -5 to +55°C
Ambient Humidity • 10~90% (non-condensed)
Store Temperature • -30 ~ +60°C
Store Humidity • 10~90% (non-condensed)
Made in India
Manufacturing plant / factory in India
Online Support available
Warranty : 3 years
TEC certified
Should be compatible and should be able to manage centrally from existing OLT
ONU should be compatible to deploy with Eduroam setup of NITK and should be demonstrated before participating in the tender
MAF from the OEM should be submitted along with bid

GPON-GEPON ONU AC1200 WiFi Router with 1PON -2GE LAN ports and 1FXS Port

Technical Specification
PON interface • 1 XPON port (EPON PX20+ and GPON Class B+) • SC Single mode • TX optical Power : 0 to 4 dBm • Transmission distance : 20 km • RX : 2.488 Gbps , TX : 1.2488 Gbps
LAN interface • 2 * 10/100/1000 Mbps auto adaptive Ethernet interface, RJ45 connectors, 1 POTS Rj11 Connector
Wavelength: Transmission wavelength: 1310 nm Receiver wavelength: 1490 nm
TX optical Power : 0 to 4 dBm
Sensitivity
Receiver Sensitivity: -8dBm to -25dBm
Optical Type : SC/PC
Wireless: Compliant with IEEE 802.11 b/g/n/ac
Indicators: Power, LOS, PON, LAN2, LAN1, TEL, 2.4G, 5G, Phone
VLAN
Support VLAN tag mode
Support VLAN translation mode
Support VLAN trunk mode
Multicast
Support IGMP v1/v2/v3
Support IGMP Proxy and MLD Proxy
Support IGMP Snooping and MLD Proxy Snooping
QoS
Support 4 Queues
Support SP and WRR
Support 802.1P
Support DSCP
Layer 3
Support IPv4/IPv6 and IPv4/IPv6 Dual Stack
Support DHCP/ PPPoE/ Static
Support DDNS
Support Static Route
Support NAT
Support Virtual Server
Support DMZ
Support DHCP Server
VoiP

Support SIP Protocol
Support Voice coding: ITU-T G.711/ G.723 / G.726 / G.729
Support Echo cancellation exceeding ITU-T G.165 / G.168-2002 upto 128ms tail length
Support high/low speed fax/modem
Support bypass fax and T38 fax
Support MD5 authentication
Support Inband / RFC2833 / SIP INFO
Support call forward, call waiting, hot-line call
Support multi party conferencing
Support line testing according to GR-909
Wireless
Support 802.11 b/g/n/ac and mixed mode
Support 4 SSID
Support No-auth, WEP, WPA-PSK and WPA2-PSK
Support AES, TKIP encryption
Security
Support Firewall
Support MAC filter
Support ACL
Support URL Filter
Management
Support CTC OAM 2.0 and 2.1
Support ITU-T 984.x OMCI
Support WEB
Support TR069
Support Telnet
Ambient temperature: 0 ~ +55°C
Ambient Humidity: 10~90% (non-condensed)
Store Temperature: -30 ~ +60°C
Store Humidity: 10~90% (non-condensed)
TEC certified
Should be compatible and should be able to manage centrally from existing OLT
ONU should be compatible to deploy with Eduroam setup of NITK and should be demonstrated before participating in the tender
MAF from the OEM should be submitted along with bid

2.2 Conditions:

1. **Indoor / Outdoor access points, PoE injectors and PoE switches**

   Preferences — Compatible with the existing setup

   Switches, Routers etc Preferences - Must support dynamic VLANs and eduroam

   Passive Materials Make – R&M, Systimax, AMP, Molex, D-Link / Digisol

Racks Preferences — Netrack, WallRack, APW President, Rittal **Other materials** from reputed brands.

The material, make and model should be explicitly specified in your bid.

2. Please note that this is a pseudo B-o-M and not intended for actual purchase at the specified quantities. The company shall specify the rate for the above in their bid and hold the price during the contract with NITK. The quantity is indicative and shall only be used to identify the L1.

3. No purchase order will be issued based on the above B-o-M.

4. Uses of these rates are entirely at the discretion of NITK and it is not guaranteed that purchases at these rates will be done at any time during the contract.

5. Work order shall be separately and explicitly issued whenever these rates are used by NITK during the contract period for any network repair or expansion within the stipulated limit decided by NITK. Minimum cost expected per such work order if any, may be explicitly indicated.

6. It shall be mandatory on the part of the bidder to enter into a Rate for Bill of Materials (RFBOM) contract as specified above and non-compliance of this can render your bid non-responsive and thus rejected.

7. Five years warranty should be given for all active devices supplied under the Rate For Bill of Materials (RFBOM).

3 Devices Details for AMC- Campus Wide Networking (CWN) -

1. Devices are to be taken into AMC including the various modules attached therein.

2. Drop-in replacements are expected for the devices/modules.

3. Proper back-to-back arrangements are expected.

4. Minimum 99% uptime must be guaranteed and an SLA must be entered into.

5. Firmware updates are to be carried out wherever required & the devices are to be appropriately reconfigured as and when required.

6. AMC charges shall be calculated for the devices below for year wise one-year period extendable up to the end of the FM Contract/extended period as applicable subject to satisfactory performance.

3.1 Devices to be included in AMC

Please quote the **AMC rate and GST** for all of the devices listed below in the price bid.

Table: 3.1T

S/N	DEPARTMENT NAME	SWITCH	MODEL No.	Qty.	Warranty Ends On
	ELECTRICAL & ELECTRONICS				
1		D LINK	DES 3252	1	
2		CISCO	CATALYST 2950	1	
3		DELL	POWER CONNECT 3348	1	
4		DELL	POWER CONNECT 3348	1	
5		D LINK	DGS 1210-52	1	
6		D LINK	DGS 1016A	1	
7		D LINK	DGS 1016A	1	
8		D Link	DGS 1024C	1	
9		D Link	DES 1016A	1	
10		D Link	DGS 1016D	1	
11		DIGISOL	DG-GS 1528	1	
12		DIGISOL	DG-GS 1528	1	
	CENTRAL LIBRARY				
1		D LINK	DGS 1210-28X	2	
2		CISCO	SG 500-28	1	
3		CISCO	SG 350-28	1	
4		CISCO	SG 350-28	3	
5		CISCO	SG 350-28	1	
6		CISCO	SG 350-28	1	
7		LINKSYS	SRW224G4-24	1	
8		TP LINK	TL SG1024D	1	
9		CISCO	SG 350-28	1	
10		D LINK	DGS 1510-28X	1	
11		D LINK	DGS 1210-28P	1	
	ELECTRONICS & COMMUNICATION				
1		CISCO	CATALYST 2950 48	1	
2		HP Switch	52650(I4899B) 48	1	
4		D LINK	DES 3200-28	1	
5		CISCO	CATALYST 2950 48	1	
6		D LINK	DES 1210-52	1	
7		D LINK	DGS 1210-52	1	
8		D LINK	DES 3200-28	1	
9		DIGISOL	DG-GS4652E	1	
10		D LINK	DGS 1250-28X	1	
11		TP LINK	TL SG3452	1	
12		TP LINK	TL SG3452	1	

13		TP LINK	TL SG3452	1	
14		TP LINK	TL SG3452	1	
15		TP LINK	TL SG3452	1	
16		TP LINK	TL SG3452	1	
17		TP LINK	TL SG3452	1	
18		TP LINK	TL SG3452	1	
19		TP LINK	TL SG3428X	1	
20		TP LINK	TL SG3452	1	
21		TP LINK	TL SG3452	1	
22		TP LINK	TL SG3452	1	
23		TP LINK	TL SG3452	1	
24		TP LINK	TL SG2428P	1	
	SACA				
1		D LINK	DES 1210-52	1	
2		D LINK	DGS 1210-52	1	
3		D LINK	DGS 1250-28X	1	
4		D LINK	DGS 1250-28X	1	
5		D LINK	DGS 1210-52	1	
6		D LINK	DGS 1250-28X	1	
7		D LINK	DGS 1250-28X	1	
8		D LINK	DGS 1250-28X	1	
	MACS				
1		D LINK	DGS 1210-28	1	
2		D LINK	DGS 1210-28	1	
3		D LINK	DGS 1210-28	1	
4		D LINK	DGS 1510-28X	1	
	CHEMICAL				
1		D LINK	DGS 1250-28X	1	
2		D LINK	XSTACK DES 3200-52	1	
3		D LINK	DGS 1210-52		
4		D LINK	DES 3052-52	1	
5		CISCO	SG 350-28	1	
6		CISCO	SG 350-28	1	
7		CISCO	SG 350-28	1	
8		CISCO	SG 350-28	1	
9		D LINK	DGS 1210-28P	4	
10		TP Link	TL SG2428P	1	
	CHEMICAL-BioTech				
9		CISCO	SG 350-28	1	
10		CISCO	CATALYST 2950-X	1	

11		CISCO	SG 350-28	1	
12		CISCO	SG 350-28	1	
	CIVIL				
1		D LINK	DES 1228-28	1	
2		D LINK	DES 3200-52	1	
3		D LINK	DES 3552-52	1	
4		D LINK	DES 3200-28	1	
5		D LINK	DGS 1250-28X	1	
6		D LINK	DGS 1250-28X	1	
7		DIGISOL	DG-GS1528	1	
8		D LINK	DES 3200-28	1	
9		D LINK	DGS 1210-52	1	
10		D LINK	DGS 1210-28	1	
11		D LINK	DES 3256-24	1	
12		D LINK	DGS 1210-28	1	
13		D LINK	DES 3200-28	1	
14		D LINK	DGS 1210-28P	1	
	WATER RESOURCES				
1		D LINK	DES 3200-28	1	
2		D LINK	DGS 1210-28	1	
3		D LINK	DGS 3200-28	1	
4		D LINK	DGS 1250-28X	1	
5		D LINK	DGS 1250-28X	1	
6		D LINK	DGS 1250 52X	1	
7		CISCO	SG 500-28	1	
8		D LINK	DGS 1510-28	1	
9		D LINK	DGS 1510-28	1	
10		D LINK	DGS 1210-28	1	
11		D LINK	DGS 3200-28	1	
12		D LINK	DGS 1210-52	1	
13		D LINK	DGS 1210-52	1	
14		TP LINK	TL SG3452-48	1	
15		D LINK	DGS 1210-28P	1	
	METALLURGICAL				
1		D LINK	DGS 1210-28	1	
2		D LINK	DGS 1250-28X	1	
3		D LINK	DGS 1210-52	1	
	MINING ENGINEERING				
1		D LINK	DES 3256-24	1	

2		D LINK	DGS 1210-28	1	
3		D LINK	DES 1024 R-24	1	
4		D LINK	DGS 1210-24	1	
5		D LINK	DGS 1210-24	1	
6		D LINK	DGS 1210-28	1	
7		D LINK	DES 3526	1	
	IT				
1		D LINK	DGS 1210-54	1	
2		D LINK	DGS 1250-52X	1	
3		D LINK	DGS 1210-52X	1	
4		D LINK	DGS 1250-52X	1	
5		D LINK	DGS 1250-52X	1	
6		D LINK	DGS 1250-28X	1	
7		D LINK	DGS 3100-48	1	
8		D LINK	DGS 1210-28	1	
9		D LINK	DES 1024D	1	
10		D LINK	DGS 1250-52X	1	
11		D LINK	DES 1210-52	1	
12		TP LINK	TL SG3452	1	
13		TP LINK	TL SG3452	1	
14		TP LINK	TL SG3452	1	
	DIRECTOR RESIDENCY				
1		TP LINK	TL SG2428P 24	1	
2		TP LINK	TL SG2428P 24	1	3/27/2025
	GUEST HOUSE				
1		D LINK	DES 3200-28	1	
2		D LINK	DES 1210-28	1	
3		D LINK	DES 3028	1	
4		D LINK	DES 3526	1	
5		TP LINK	TL SG2428P	2	
6		Cisco	SG 350-28P	1	
	CCC				
1		D LINK	DGS 3100-24	1	
2		D LINK	DGS 1250-28X	1	3/27/2025
3		D LINK	DGS 1250-28X	1	3/27/2025
4		D LINK	DGS 1250-28X	1	3/27/2025
5		D LINK	DGS 1510-28X	1	3/27/2025
7		D LINK	DGS 1250-52X	1	
9		D LINK	DGS 1250-28X	1	3/27/2025
10		D LINK	DGS 1250-28X	1	3/27/2025

11		D LINK	DGS 1210-52	1	
12		D LINK	DGS 1210-52	1	
13		D LINK	DGS 1250-52X	1	
14		D LINK	DGS 1510-28X	1	3/27/2025
15		D LINK	DGS 1250-52X	1	
16		D LINK	DGS 1250-52X	1	7/29/2025
17		D LINK	DGS 1250-52X	1	7/29/2025
18		D LINK	DGS 1250-52X	1	7/29/2025
19		D LINK	DGS 1250-52X	1	7/29/2025
20		D LINK	DGS 1250-52X	1	7/29/2025
21		D LINK	DGS 1250-52X	1	7/29/2025
22		D LINK	DGS 1250-52X	1	7/29/2025
23		D LINK	DGS 1250-52X	1	7/29/2025
24		D LINK	DGS 1250-52X	1	7/29/2025
25		D LINK	DGS 1250-52X	1	7/29/2025
26		D LINK	DGS 1250-52X	1	7/29/2025
27		D LINK	DGS 1250-52X	1	7/29/2025
28		D LINK	DGS 1510-28X	1	3/27/2025
29		D LINK	DGS 1510-28X	1	3/27/2025
30		D LINK	DGS 1510-28X	1	3/27/2025
31		D LINK	DGS 1510-28X	1	3/27/2025
32		D LINK	DGS 1510-28X	1	3/27/2025
33		D LINK	DGS 1510-28X	1	3/27/2025
34		D LINK	DGS 1510-28X	1	3/27/2025
35		D LINK	DGS 1510-28X	1	3/27/2025
36		D LINK	DGS 1510-28X	1	3/27/2025
37		D LINK	DGS 1510-28X	1	3/27/2025
38		D LINK	DGS 1510-28X	1	3/27/2025
39		D LINK	DGS 1510-28X	1	3/27/2025
40		D LINK	DGS 1510-28X	1	3/27/2025
41		Cisco	SG 300-28	1	
42		Cisco	SG 300-28	1	
43		Cisco	SG 300-28	1	
44		Cisco	SG 300-28	1	
45		Cisco	SG 300-28	1	
46		Cisco	SG 300-28	1	
47		Cisco	SG 300-28	1	
48		Cisco	SG 300-28	1	
49		Cisco	SG 300-28	1	
50		Cisco	SG 300-28	1	
51		Cisco	SG 300-28	1	
52		Cisco	SG 300-28	1	
53		Cisco	SG 300-28	1	
54		TP Link	SG2428P	3	3/27/2025
55		D LINK	DGS 1250-28X	20	12/28/2025

56		Digisol (OLT)	DG-GO4308-6E2SFPP	3	09/01/2029
		Digisol (XPON-ONU)	DG-GR6821AC	281	01/01/2030
	LHCC				
1		TECHROUTES	TR-S2528D	10	
2		Cisco	SG 350-28P	5	`
3		TP Link	SG2428P	1	03/27/2025
1	SPORTS COMPLEX	D LINK	DGS 1210-28	1	
	NEW CSE				
1		D LINK	DGS 1210-52	1	
2		D LINK	DGS 1210-28	1	
3		D LINK	DES 3200-28	1	
4		D LINK	DGS 1210-28	1	
5		D LINK	DGS 1210-52	1	
6		DIGISOL	DGFS4552-48	1	
7		D LINK	DGS 1210-52	1	
8		D LINK	DGS 1210-28	1	
9		D LINK	DGS 1210-52	1	
10		D LINK	DES 1210-52	1	
11		D LINK	DGS 1210-28	1	
12		D LINK	DGS 1210-52	1	
13		D LINK	DGS 1210-52	1	
14		D LINK	DGS 1210-28	1	
15		D LINK	DGS 1210-52	1	
16		D LINK	DGS 1210-28	1	
17		D LINK	DGS 1210-52	1	
18		D LINK	DGS 1210-28	1	
19		D LINK	DGS 1210-52	1	
20		D LINK	DGS 1210-52	1	
21		D LINK	DGS 1210-28	1	
22		D LINK	DGS 1210-52	1	
23		D LINK	DGS 1210-52	1	
24		D LINK	DGS 1210-28	1	
25		D LINK	DGS 1210-52	1	
26		D LINK	DGS 1210-52	1	
27		D LINK	DES 3552- 52	1	
28		D LINK	DES 3200-52	1	
29		D LINK	DGS 1250-28X	1	
30		D LINK	DGS 1210-52	1	
31		D LINK	DGS 1210-28	1	

32		D LINK	DGS 1210-52	1	
33		D LINK	DGS 1210-28	1	
34		D LINK	DGS 1210-52	1	
35		Cisco	SG 350-28P	6	
	ENGLISH MEDIUM				
1		D-LINK	DES 3200-28	1	
2		D-LINK	DES 1024D	1	
3		D-LINK	DES 1024D	1	
4		TP LINK	TL- SG1024D	1	
	HOSTEL OFFICE				
1		DIGISOL	DG-GS1528	1	
	MAIN BUILDING				
1		D LINK	DES 1210-28	1	
2		D LINK	DGS 1250-28X	2	7/25/2025
3		DIGISOL	DG-GS1528	1	6/10/2025
4		D LINK	DES 3200-28	1	
5		D LINK	DES 1210-52	1	
6		D LINK	DGS 1210-28	1	
7		D LINK	DES 3200-28	1	
8		D LINK	DES 1024D	1	
9		D LINK	DES 1024D	1	
10		D LINK	DES 1024D	1	
11		Extreme Summit	X440-48t	1	
12		D LINK	DES 3200-28	1	
13		D LINK	DGS 1210-28	1	
14		D LINK	DES 3810-28	1	
15		DIGISOL	DG-GS1528	1	6/10/2025
16		DIGISOL	DG-FS1016D/E	1	
17		D LINK	DGS 1210-28	1	
18		D LINK	DGS 1210-28	1	
19		D LINK	DGS 1210-28	1	
1	ATB	D LINK	DGS 1210-52P	1	
		TP Link	TL SG2428P	1	
	NTB CRF				
1		D LINK	DGS 1510-28X	1	
2		D LINK	DGS 1210-28	1	
3		D LINK	DGS 1210-28	1	

4		D LINK	DGS 1210-28	1	
5		D LINK	DGS 1210-28	1	
6		D LINK	DGS 1210-52	1	
7	CRF	TP-LINK	TL SG3428	1	
8		TP LINK	TL SG3452	1	
9		HPE	1820J 9980A	1	
10		HPE	1820J 9980A	1	
11		HPE	1820J 9980A	1	
12		HPE	1820J 9980A	1	
13		HPE	1820J 9980A	1	
14		HPE	1820J 9980A	1	
15		HPE	1820J 9980A	1	
16		HPE	1820J 9980A	1	
17		HPE	1820J 9980A	1	
18		HPE	1820J 9980A	1	
19		HPE	1820J 9980A	1	
		TP Link	TL SG2428P	2	
1	CFIS	HPE	1920S-JL 384A	1	
		TP Link	TL SG2428P	16	
	CSD				
1		CISCO	SG500X-24	1	
2		CISCO	SG500X-24	1	
3		CISCO	SG300-28	1	
4		CISCO	SG300-28	1	
	MECHANICAL				
1		D LINK	DGS 3100-24	1	
2		D LINK	DGS 3100-24	1	
3		D LINK	DGS 3100-24	1	
4		D LINK	DGS 3100-24	1	
5		D LINK	DGS 3100-24	1	
6		D LINK	DGS 3100-24	1	
7		D LINK	DGS 3100-24	1	
8		D LINK	DWS 3024L 24	1	
9		D LINK	DGS 3100-24	1	
10		D LINK	DGS 3100-24	1	
11		D LINK	DGS 3100-24	1	
12		D LINK	DGS 3100-24	1	
13		D LINK	DGS 3100-24	1	
14		D LINK	DGS 3100-24	1	
15		D LINK	DGS 3100-24	1	

16		D LINK	DGS 3100-24	1	
17		D LINK	DES 3200-28	1	
18		D LINK	DGS 3100-24	1	
19		D LINK	DGS 3100-24	1	
20		D LINK	DGS 3100-24	1	
21		D LINK	DGS 3100-24	1	
22		D LINK	DGS 3100-24	1	
23		D LINK	DGS 3100-24	1	
24		D LINK	DGS 1210-28	1	
25		CISCO	SG 350-28	1	
26		CISCO	SG 350-28	1	
27		CISCO	SG 350-28	1	
28		CISCO	SG 350-28	1	
29		CISCO	SG 350-28	1	
30		CISCO	SG 350-28	1	
31		TP-LINK	TL SG-3428	1	
32		CISCO	CBS 350 24T	1	
33		CISCO	SG 350-28	1	
34		CISCO	SG 350-28	1	
35		CISCO	SG 350-28	1	
36		CISCO	SG 350-28	1	
37		DIGISOL	DG-GS1528	1	
38		D LINK	DGS 1210-28P	4	
	CHEMISTRY				
1		D LINK	DGS 3100-24	1	
2		D LINK	DGS 3100-24	1	
3		D LINK	DGS 3100-24	1	
4		D LINK	DGS 3100-24	1	
5		D LINK	DGS 3100-24	1	
6		D LINK	DGS 3100-24	1	
7		D LINK	DGS 1210-28	1	
8		D LINK	DGS 3100-24	1	
9		D LINK	DGS 3100-24	1	
10		D LINK	DGS 3100-24	1	
11		TP Link	TL SG2428	1	
	PHYSICS				
11		D LINK	DGS 3100-24	1	
12		D LINK	DGS 3100-24	1	
13		D LINK	DGS 3100-24	1	
14		D LINK	DGS 3100-24	1	
15		D LINK	DGS 3100-24	1	
16		D LINK	DGS 3100-24	1	
17		D LINK	DGS 3100-24	1	

18		CISCO	SG 350-28	1	
19		CISCO	SG 350-28	1	
20		D LINK	DGS 1210-28	1	
21		D LINK	DGS 1210-52	1	
22		CISCO	SG 350-28	1	
23		CISCO	SG 350-28	1	
24	Chemistry, Physics building MACS Department BSB 6.5	D LINK	DGS 1210-52	1	
25	Chemistry, Physics Building School of Management	D LINK	DGS 1210-52	1	
26		D LINK	DGS 1210-52	1	
27		D LINK	DGS 1210-28P	1	
	SCHOOL OF MANAGEMENT				
1		D LINK	DGS 1210-52	1	
2		DIGISOL MUSTANG	DG-FS4552	1	
3		TP Link	TL-SG2428	1	
1	HEALTH CENTER	D LINK	DES 3200-28	1	
	OLD PG - Pushpagiri				
1		D LINK	DGS 1250-28X	1	
2		D LINK	DGS 1250-28X	1	
3		D LINK	DGS 1250-28X	1	
4		D LINK	DGS 1250-28X	1	
5		D LINK	DGS 1250-28X	1	
6		D LINK	DGS 1250-28X	1	
7		D LINK	DGS 1250-28X	1	
8		D LINK	DGS 1250-28X	1	
9		D LINK	DGS 1250-28X	1	
10		D LINK	DGS 1250-28X	1	
11		D LINK	DGS 1250-28X	1	
12		D LINK	DGS 1250-28X	1	
13		D LINK	DGS 1250-28X	1	
14		D LINK	DGS 1250-28X	1	
15		D LINK	DGS 1250-28X	1	
	BLOCK 1-Karavali				
1		D LINK	DGS 1250-28X	1	
2		D LINK	DGS 1250-28X	1	

3		D LINK	DGS 1250-28X	1	
4		D LINK	DGS 1250-28X	1	
5		D LINK	DGS 1250-28X	1	
6		D LINK	DGS 1250-28X	1	
7		D LINK	DGS 1250-28X	1	
8		D LINK	DGS 1250-28X	1	
9		D LINK	DGS 1250-28X	1	
10		D LINK	DGS 1250-28X	1	
11		D LINK	DGS 1250-28X	1	
12		D LINK	DGS 1250-28X	1	
13		TP Link	GS-728 TP	1	
	BLOCK 2-Karavali				
1		D LINK	DGS 1250-28X	1	3/27/2025
2		D LINK	DGS 1250-28X	1	
3		D LINK	DGS 1250-28X	1	
4		D LINK	DGS 1250-28X	1	
5		D LINK	DGS 1250-28X	1	
6		D LINK	DGS 1250-28X	1	
7		D LINK	DGS 1250-28X	1	
8		D LINK	DGS 1250-28X	1	
9		D LINK	DGS 1250-28X	1	
10		D LINK	DGS 1250-28X	1	
11		D LINK	DGS 1250-28X	1	
12		D LINK	DGS 1250-28X	1	
13		D LINK	DGS 1250-28X	1	
14		D LINK	DGS 1250-28X	1	
15		D LINK	DGS 1250-28X	1	
	BLOCK 3- Vindhya				
1		D LINK	DGS 1250-28X	1	
2		D LINK	DGS 1250-52X	1	
3		D LINK	DGS 1250-28X	1	
4		D LINK	DGS 1250-52X	1	
5		D LINK	DGS 1250-52X	1	
6		D LINK	DGS 1250-52X	1	
7		D LINK	DGS 1250-28X	1	
8		D LINK	DGS 1250-28X	1	
9		D LINK	DGS 1250-28X	1	
10		D LINK	DGS 1250-28X	1	
11		TP Link	TL-SG 2428	1	
	BLOCK 4- Satpura				

1		D LINK	DGS 1250-28X	1	3/27/2025
2		D LINK	DGS 1250-28X	1	3/27/2025
3		D LINK	DGS 1250-28X	1	3/27/2025
4		D LINK	DGS 1250-28X	1	3/27/2025
5		D LINK	DGS 1250-28X	1	3/27/2025
6		D LINK	DGS 1250-28X	1	3/27/2025
7		D LINK	DGS 1250-28X	1	
8		D LINK	DGS 1250-28X	1	
9		D LINK	DGS 1250-28X	1	
10		D LINK	DGS 1250-28X	1	
11		D LINK	DGS 1250-28X	1	
12		D LINK	DGS 1250-28X	1	
13		D LINK	DGS 1250-28X	1	
14		D LINK	DGS 1250-28X	1	
15		TP Link	TL SG2428	1	
	BLOCK 5- Nilgiri				
1		D LINK	DGS 1250-28X	1	3/27/2025
2		D LINK	DGS 1250-28X	1	3/27/2025
3		D LINK	DGS 1250-28X	1	3/27/2025
4		D LINK	DGS 1250-28X	1	3/27/2025
5		D LINK	DGS 1250-28X	1	3/27/2025
6		D LINK	DGS 1250-28X	1	3/27/2025
7		D LINK	DGS 1250-28X	1	3/27/2025
8		D LINK	DGS 1250-28X	1	3/27/2025
9		D LINK	DGS 1250-28X	1	3/27/2025
10		D LINK	DGS 1250-28X	1	3/27/2025
11		D LINK	DGS 1250-28X	1	3/27/2025
12		D LINK	DGS 1250-28X	1	
13		D LINK	DGS 1250-28X	1	
14		TP Link	SG2428P	1	3/27/2025
15		TP Link	SG2428	2	
	BLOCK 7 - Sahyadri				
1		D LINK	DGS 1250-28X	1	
2		D LINK	DGS 1250-52X	1	
3		D LINK	DGS 1250-28X	1	3/27/2025
4		D LINK	DGS 1250-28X	1	3/27/2025
5		D LINK	DGS 1250-28X	1	3/27/2025
6		D LINK	DGS 1250-28X	1	3/27/2025
7		D LINK	DGS 1250-28X	1	3/27/2025
8		D LINK	DGS 1250-28X	1	3/27/2025

9		D LINK	DGS 1250-28X	1	3/27/2025
10		D LINK	DGS 1250-28X	1	3/27/2025
11		D LINK	DGS 1250-28X	1	3/27/2025
12		D LINK	DGS 1250-28X	1	3/27/2025
13		D LINK	DGS 1250-28X	1	3/27/2025
14		D LINK	DGS 1250-28X	1	3/27/2025
15		D LINK	DGS 1250-28X	1	
16		D LINK	DGS 1250-28X	1	
	BLOCK 8 - Triphul				
1		D LINK	DGS 1250-28X	1	3/27/2025
2		D LINK	DGS 1250-28X	1	3/27/2025
3		D LINK	DGS 1250-28X	1	3/27/2025
4		D LINK	DGS 1250-28X	1	3/27/2025
5		D LINK	DGS 1250-52X	1	
6		D LINK	DGS 1250-28X	1	3/27/2025
7		D LINK	DGS 1250-52X	1	
8		D LINK	DGS 1250-28X	1	3/27/2025
9		D LINK	DGS 1250-52X	1	
10		D LINK	DGS 1250-28X	1	
11		D LINK	DGS 1250-28X	1	
12		D LINK	DGS 1250-28X	1	
13		TP Link	TL-SG 2428	1	
	NEW PG-1 A				
1		D LINK	DGS 1510-28X	1	
2		D LINK	DGS 1210-52	1	
3		D LINK	DGS 1210-52	1	
4		D LINK	DGS-1500-52	1	
5		D LINK	DGS 1210-52	1	
6		TP LINK	TL SG3452	1	
7		TP LINK	TL SG3452	1	
8		TP LINK	TL SG3428X	1	
9	NEW PG -2 blockl B	TP LINK	TL SG3452	1	
10		TP LINK	TL SG3452	1	
11		TP LINK	TL SG3452	1	
12		TP LINK	TL SG3452	1	
13		TP LINK	TL SG3452	1	
14	NEW PG -3 C	TP LINK	TL SG3452	1	
15	block c	TP LINK	TL SG3452	1	
	GH-1				
1		D LINK	DGS 1250-52X	1	

2		D LINK	DGS 1250-28X	1	
	GH 2				
1		D LINK	DGS 1250-28X	1	9/15/2025
2		D LINK	DGS 1250-28X	1	9/15/2025
3		D LINK	DGS 1250-28X	1	9/15/2025
4		D LINK	DGS 1250-28X	1	9/15/2025
5		D LINK	DGS 1250-28X	1	9/15/2025
6		Digisol	DG GS1528HP	2	
	GH-3				
1		D LINK	DGS 1250-28X	1	
2		D LINK	DGS 1250-28X	1	
3		D LINK	DGS 1250-28X	1	
4		D LINK	DGS 1250-28X	1	
5		D LINK	DGS 1250-28X	1	
6		D LINK	DGS 1250-28X	1	
7		D LINK	DGS 1250-28X	1	
8		D LINK	DGS 1250-28X	1	
9		D LINK	DGS 1250-28X	1	
10		D LINK	DGS 1250-28X	1	
11		D LINK	DGS 1250-28X	1	
12		D LINK	DGS 1250-28X	1	
13		D LINK	DGS 1250-28X	1	
14		D LINK	DGS 1250-28X	1	
15		D LINK	DGS 1250-28X	1	
16		TP Link	TL SG2428	1	
	GH 4				
1		D LINK	DGS 1250-28X	1	
2		D LINK	DGS 1250-28X	1	9/15/2025
3		D LINK	DGS 1250-28X	1	9/15/2025
4		D LINK	DGS 1250-28X	1	9/15/2025
5		D LINK	DGS 1250-28X	1	9/15/2025
6		D LINK	DGS 1250-28X	1	9/15/2025
7		D LINK	DGS 1250-28X	1	9/15/2025
8		D LINK	DGS 1250-28X	1	9/15/2025
9		D LINK	DGS 1250-28X	1	9/15/2025
10		D LINK	DGS 1250-28X	1	9/15/2025
11		D LINK	DGS 1250-28X	1	9/15/2025
12		D LINK	DGS 1250-28X	1	9/15/2025
13		D LINK	DGS 1250-28X	1	9/15/2025
14		D LINK	DGS 1250-28X	1	9/15/2025
15		D LINK	DGS 1250-28X	1	9/15/2025

16		D LINK	DGS 1250-28X	1	9/15/2025
17		D LINK	DGS 1250-28X	1	9/15/2025
18		Cisco	SG 350 28P	3	
19		Digisol	DG GS 1528HP	3	
	GH5				
1		D-LINK	DGS 1250-28X	1	3/27/2025
3		D-LINK	DGS 1250-28X	1	3/27/2025
4		D-LINK	DGS 1250-28X	1	3/27/2025
5		D-LINK	DGS 1250-28X	1	3/27/2025
6		D-LINK	DGS 1250-28X	1	3/27/2025
7		D-LINK	DGS 1250-28X	1	3/27/2025
8		D-LINK	DGS 1250-28X	1	3/27/2025
9		D-LINK	DGS 1250-28X	1	3/27/2025
10		D-LINK	DGS 1250-28X	1	3/27/2025
11		D-LINK	DGS 1250-28X	1	3/27/2025
12		D-LINK	DGS 1250-28X	1	3/27/2025
13		D-LINK	DGS 1250-28X	1	3/27/2025
14		D-LINK	DGS 1250-28X	1	3/27/2025
15		D-LINK	DGS 1250-28X	1	3/27/2025
	GODHAVARI GH 6				
1		D-LINK	DGS 1250-28X	1	
2		D-LINK	DGS 1250-52X	1	
3		D-LINK	DGS 1250-52X	1	
4		D-LINK	DGS 1250-52X	1	
5		D-LINK	DGS 1250-52X	1	
6		D-LINK	DGS 1250-52X	1	
7		D-LINK	DGS 1250-52X	1	
8		D-LINK	DGS 1250-52X	1	
9		D-LINK	DGS 1250-52X	1	
10		D-LINK	DGS 1250-52X	1	
11		D-LINK	DGS 1250-52X	1	
12		D-LINK	DGS 1250-52X	1	
13		D-LINK	DGS 1250-52X	1	
14		D-LINK	DGS 1250-52X	1	
15		D-LINK	DGS 1250-52X	1	
16		D-LINK	DGS 1250-52X	1	
	SHIVALIK BOYS H 9				
1		D-LINK	DGS 1250-28X	1	
2		D-LINK	DGS 1250-28X	1	
3		D-LINK	DGS 1250-52X	1	

4		D-LINK	DGS 1250-52X	1	
5		D-LINK	DGS 1250-52X	1	
6		D-LINK	DGS 1250-52X	1	
7		D-LINK	DGS 1250-28X	1	
8		D-LINK	DGS 1250-52X	1	
9		D-LINK	DGS 1250-52X	1	
10		D-LINK	DGS 1250-52X	1	
11		D-LINK	DGS 1250-52X	1	
12		D-LINK	DGS 1250-52X	1	
13		D-LINK	DGS 1250-52X	1	
14		D-LINK	DGS 1250-28X	1	
15		D-LINK	DGS 1250-52X	1	
16		D-LINK	DGS 1250-52X	1	
17		D-LINK	DGS 1250-28X	1	
18		D-LINK	DGS 1250-28X	1	3/27/2025
19		D-LINK	DGS 1250-28X	1	3/27/2025
20		D-LINK	DGS 1250-28X	1	3/27/2025
21		D-LINK	DGS 1250-28X	1	3/27/2025
22		D-LINK	DGS 1250-28X	1	3/27/2025
23		D-LINK	DGS 1250-28X	1	3/27/2025
24		D-LINK	DGS 1250-28X	1	3/27/2025
25		D-LINK	DGS 1250-28X	1	3/27/2025
26		D-LINK	DGS 1250-28X	1	3/27/2025
27		D-LINK	DGS 1250-28X	1	3/27/2025
1	**MS Block**	Digisol	DGGS1528HP	2	
1	**International hostel**	TP Link	TL-SG 2428P	1	
	MT-1				
1		D-LINK	DGS 1250-28X	1	9/15/2025
2		D-LINK	DGS 1250-28X	1	9/15/2025
3		D-LINK	DGS 1250-28X	1	9/15/2025
4		D-LINK	DGS 1250-28X	1	9/15/2025
5		D-LINK	DGS 1250-28X	1	9/15/2025
6		D-LINK	DGS 1250-28X	1	9/15/2025
7		D-LINK	DGS 1250-28X	1	9/15/2025
8		D-LINK	DGS 1250-28X	1	9/15/2025
9		D-LINK	DGS 1250-28X	1	9/15/2025
10		D-LINK	DGS 1250-28X	1	9/15/2025
11		D-LINK	DGS 1250-28X	1	9/15/2025
12		D-LINK	DGS 1250-28X	1	9/15/2025
13		D-LINK	DGS 1250-28X	1	9/15/2025

14		D-LINK	DGS 1250-28X	1	9/15/2025
15		D-LINK	DGS 1250-28X	1	9/15/2025
16		D-LINK	DGS 1250-28X	1	9/15/2025
17		D-LINK	DGS 1250-28X	1	9/15/2025
18		D-LINK	DGS 1250-28X	1	9/15/2025
19		D-LINK	DGS 1250-28X	1	9/15/2025
20		D-LINK	DGS 1250-28X	1	9/15/2025
21		D-LINK	DGS 1250-28X	1	9/15/2025
22		D-LINK	DGS 1250-28X	1	9/15/2025
23		D-LINK	DGS 1250-28X	1	9/15/2025
24		D-LINK	DGS 1250-28X	1	9/15/2025
25		D-LINK	DGS 1250-28X	1	9/15/2025
26		D-LINK	DGS 1250-28X	1	9/15/2025
27		D-LINK	DGS 1250-28X	1	9/15/2025
28		D-LINK	DGS 1250-28X	1	9/15/2025
29		D-LINK	DGS 1250-28X	1	9/15/2025
30		TP-Link	SG2428P	1	3/27/2025
31		TP-Link	TLSG3428XMP	1	
	MT-2				
1		D-LINK	DGS 1250-28X	1	9/15/2025
2		D-LINK	DGS 1250-28X	1	9/15/2025
3		D-LINK	DGS 1250-28X	1	9/15/2025
4		D-LINK	DGS 1250-28X	1	9/15/2025
5		D-LINK	DGS 1250-28X	1	9/15/2025
6		D-LINK	DGS 1250-28X	1	9/15/2025
7		D-LINK	DGS 1250-28X	1	9/15/2025
8		D-LINK	DGS 1250-28X	1	9/15/2025
9		D-LINK	DGS 1250-28X	1	9/15/2025
10		D-LINK	DGS 1250-28X	1	9/15/2025
11		D-LINK	DGS 1250-28X	1	9/15/2025
12		D-LINK	DGS 1250-28X	1	9/15/2025
13		D-LINK	DGS 1250-28X	1	9/15/2025
14		D-LINK	DGS 1250-28X	1	9/15/2025
15		D-LINK	DGS 1250-28X	1	9/15/2025
16		D-LINK	DGS 1250-28X	1	9/15/2025
17		D-LINK	DGS 1250-28X	1	9/15/2025
18		D-LINK	DGS 1250-28X	1	9/15/2025
19		D-LINK	DGS 1250-28X	1	9/15/2025
20		D-LINK	DGS 1250-28X	1	9/15/2025
21		D-LINK	DGS 1250-28X	1	9/15/2025
22		D-LINK	DGS 1250-28X	1	9/15/2025
23		D-LINK	DGS 1250-28X	1	9/15/2025
24		D-LINK	DGS 1250-28X	1	9/15/2025
25		D-LINK	DGS 1250-28X	1	9/15/2025

26		D-LINK	DGS 1250-28X	1	9/15/2025
27		D-LINK	DGS 1250-28X	1	9/15/2025
28		D-LINK	DGS 1250-28X	1	9/15/2025
29		D-LINK	DGS 1250-28X	1	9/15/2025
30		TP-Link	TL SG3428XMP	1	
31		TP-Link	TLSG2428P	5	
32		Cisco	SG-350 28P	1	
	MT-3				
1		D-LINK	DGS 1250-28X	1	9/15/2025
2		D-LINK	DGS 1250-28X	1	9/15/2025
3		D-LINK	DGS 1250-28X	1	9/15/2025
4		D-LINK	DGS 1250-28X	1	9/15/2025
5		D-LINK	DGS 1250-28X	1	9/15/2025
6		D-LINK	DGS 1250-28X	1	9/15/2025
7		D-LINK	DGS 1250-28X	1	9/15/2025
8		D-LINK	DGS 1250-28X	1	9/15/2025
9		D-LINK	DGS 1250-28X	1	9/15/2025
10		D-LINK	DGS 1250-28X	1	9/15/2025
11		D-LINK	DGS 1250-28X	1	9/15/2025
12		D-LINK	DGS 1250-28X	1	9/15/2025
13		D-LINK	DGS 1250-28X	1	9/15/2025
14		D-LINK	DGS 1250-28X	1	9/15/2025
15		D-LINK	DGS 1250-28X	1	9/15/2025
16		D-LINK	DGS 1250-28X	1	9/15/2025
17		D-LINK	DGS 1250-28X	1	9/15/2025
18		D-LINK	DGS 1250-28X	1	9/15/2025
19		D-LINK	DGS 1250-28X	1	9/15/2025
20		D-LINK	DGS 1250-28X	1	9/15/2025
21		D-LINK	DGS 1250-28X	1	9/15/2025
22		D-LINK	DGS 1250-28X	1	9/15/2025
23		D-LINK	DGS 1250-28X	1	9/15/2025
24		D-LINK	DGS 1250-28X	1	9/15/2025
25		D-LINK	DGS 1250-28X	1	9/15/2025
26		D-LINK	DGS 1250-28X	1	9/15/2025
27		D-LINK	DGS 1250-28X	1	9/15/2025
28		D-LINK	DGS 1250-28X	1	9/15/2025
29		D-LINK	DGS 1250-28X	1	9/15/2025
30		TP-Link	SG2428P	3	3/27/2025
31		TP-Link	TL SG3428XMP	1	
32		TP-Link	SG2428P	9	

DECLARATION

1. I have carefully read and understood all the terms and conditions of the tender and hereby accept the same.
2. The information/document furnished along with the Bid is true and authentic to the best of knowledge and belief.

Date: **Signature of the authorized person**

Place: **Company Seal**

SECTION 4 - PRICE BID FORMAT
[To be used by the bidder for submission of the bid]

Tender Inviting Authority:

Name of Work/Goods/Services:

Contract No:

Name of the Bidder/ Bidding Firm / Company :

Period: Year wise One year with extension up to maximum of five years subject to good performance and / or changes in the inventory of the significant items in the Rate For Bill of Materials (RFBOM)

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 #	NUMBER #	NUMBER #	NUMBER	NUMBER	NUMBER	NUMBER #	TEXT #
Sl. No.	Item Description	Quantity	BASIC RATE in Figures to be entered by the Bidder in Rs. P	COST	GST rate in %	GST Amount	TOTAL AMOUNT with Taxes Rs. P	TOTAL AMOUNT In Words
1	FM Charges (for the service of service Engineers, Help Desk co-ordinators)							
2	Rate for Bill of Materials (RFBOM) listed under table 2T							
3	AMC Charges for the devices listed under table 3.1T							
Total in Figures								
Quoted Rate in Words								

Note : 1. Break up of Rate for Bill of Materials (RFBOM) items (unit wise) should be furnished in additional sheets with **unit rate and tax** for all of the devices listed under Table 2T of the Tender document.
2. Break up of price (unit wise) for AMC Charges with **unit rate, total and tax** for all of the devices listed under Table 3.1T
3. L1 will be identified by Grand Total of Total cost of RFBOM, Total Cost of AMC and Cost of FM Charges

SECTION 5: CONTRACT FORM
[To be provided by the bidder in the business letterhead]

1. (Name of the Supplier's Firm) hereby abide to deliver by the delivery schedule mentioned in section 3 tender document for supply of the items if the purchase order is awarded.

2. The item will be supplied conforming to the specifications stated in the tender document without any defects and deviations.

3. Warranty will be given for the period mentioned in the tender document and service will be rendered to the satisfaction of NITK, Surathkal during this period.

Signature of the Bidder   : _____

Name and Designation   : _____

Business Address   : _____

            _____

Place: Seal of the Bidder's Firm
Date:

<div align="center">**Compliance Statement**</div>

Indicate whether the following are enclosed or not.

1. License certificate for manufacture /supply of the item & Factory license
2. Agreements/Purchase Orders/Completion certificates if any, for similar items from other Universities, Institutes, and Government Department/Undertakings/Public sectors
3. List of Owner/partners of the firm and their contact numbers (Bidder Information)
4. Declaration of abandoned or suspended any awarded service & Blacklist Certificate. Annexure 'C'
5. Integrity Pact (for procurements above Rs1.0 Crore (Rs10.0 Million). Annexure 'D'
6. Copy of GST certificate & PAN No.
7. Undertaking that the successful BIDDER agrees to give a Performance Security amounting to 3% of the purchase order value in favor of "The Director, NITK Surathkal".
8. Extract of the audited balance sheet for the last three years is required to be submitted with the technical bid with the relevant information highlighted.
9. The checklist that should be submitted along with the Technical Bid.
10. The contract form given in Section 5
11. EMD
12. Self Certification (as per Annexure G or H), depending on the status of the bidder.
13. A Separate Technical Compliance sheet conforming to each component of FM, Rate for Bill of Materials (RFBOM), AMC and other relevant items listed in the tender document.
14. Unpriced copy of the financial bid with terms and conditions.
15. Declaration that all items specified in the bid for the Rate for Bill of Materials (RFBOM) and AMC are included and the specifications are matching.
16. Declaration that the bidder agrees to the scope of service mentioned in this tender.
17. Proof that the bidder has 5 years experience
18. Proof that the bidder is certified ISO 9001
19. Proof for 3 similar works not less than Rs 30 lakhs within the last two years
20. License certificate for supplying the goods.
21. List of customers with contact details: Reference Letter /Phone Number / Contact address of three places or more where you have carried out similar work (Networking projects only).

<div align="right">**Signature and Seal of the Bidder**</div>

Previous Supply Orders Executed

Name of the firm: _____

Order placed by [Full address of the purchaser]	Order No. and Date	Order Value	Specified Delivery Date	Actual Delivery Date	Remarks indicating reasons for late delivery, if any and justification for the price difference of their supply order and those quoted to us	Has the equipment or service been installed /provided satisfactorily?	Contact person along with telephone, mobile number, fax, and E-mail address (other Universities, Institutes, and Government Department/Undertakings/Public sectors)

(Add more rows if required)

Signature and Seal of the Bidder

FORMAT OF DECLARATION
(To be submitted on Letterhead)

I/We Mr./Ms._____, S/o/ of Mr. _____ aged about _____ years, resident of _____ , working as ---------(designation) for ------------------- (name and address of the bidding agency).

I solemnly affirm and the state as under:

1. That I am working as ------- /proprietor of the ------ (name of the firm) and authorized to sign this declaration.

2. That the firm M/s---- (complete address of the firm) has not abandoned or suspended any contract work of any organization/ department so far/ during the previous five financial years.

3. That the firm M/s---- (complete address of the firm) has not been blacklisted/ debarred for competing in tenders by any organization/ department so far/ during the previous five financial years.

4. I solemnly confirm that the facts stated above are true and nothing has been concealed.

Seal and Signature of Bidder

INTEGRITY PACT AGREEMENT
(To be signed by the bidder/same signatory authorized to sign the relevant contact)

This Integrity Agreement is made at Surathkal on this ………… day of …..……..…..20 …….

BETWEEN

National Institute of Technology Karnataka, Surathkal, an Institute of National Importance (under NIT Act -2007) represented through The Registrar, NITK, Surathkal (hereinafter referred as the **'Buyer,** which expression shall unless repugnant to the meaning or context hereof include its successors and permitted assigns)

AND

………………………………………………………………………………………………………
……………
(Name and Address of the Individual/Firm/Company)
Through …………………………………………………….…... (Hereinafter referred to as the "Bidder/Contractor" and which expression shall unless repugnant to the meaning or context hereof include its succession and permitted assigns)

Preamble
WHEREAS **NITK Surathkal has** floated the Tender (Hereinafter referred to as "Tender/Bid") and intends to award, underlaid down organizational procedure, contract for "Equipment"

[Hereinafter referred to as the "**Contract**").

AND WHEREAS the Principal/Owner values full compliance with all relevant laws of the land, rules, regulations, economic use of resources and fairness/transparency in its relation with its Bidder(s) and Contractor(s).

AND WHEREAS to meet the purpose aforesaid both the parties have agreed to enter into this Integrity Agreement (hereinafter referred to as **"Integrity Pact" or "Pact"**), the terms and conditions of which shall also be read as integral part and parcel of the Tender/Bid documents and Contract between the parties.

NOW, THEREFORE, in consideration of mutual covenants contained in this Pact, the parties hereby agree as follows and this witness as under:

Seal and Signature of the bidder   Registrar, for NITK Surathkal

Article 1: Commitment of NITK Surathkal

i. **NITK Surathkal** commits to take all measures necessary to prevent corruption and to observe the following principles:

    (a) No employee of NITK Surathkal, personally or through any of his/her family members, will in connection with the Tender, or the execution of the Contract, demand, take a promise for or accept, for self or third person, any material or immaterial benefit which the person is not legally entitled to.

    (b) NITK Surathkal will, during the Tender process, treat all Bidder(s) with equity and reason. NITK Surathkal will, in particular, before and during the Tender process, provide to all Bidder(s) the same information and will not provide to any Bidder(s) confidential/additional information through which the Bidder(s) could obtain an advantage in relation to the Tender process or the Contract execution.

    (c) NITK Surathkal shall endeavour to exclude from the Tender process any person, whose conduct in the past has been of biased nature.

ii. If NITK Surathkal obtains information on the conduct of any of its employees which is a criminal offense under the Indian Penal code (IPC)/Prevention of Corruption Act, 1988 (PC Act) or is in violation of the principles herein mentioned or if there be a substantive suspicion in this regard, NITK Surathkal will inform the Chief Vigilance Officer and in addition, can also initiate disciplinary actions as per its internal laid down policies and procedures.

Article 2: Commitment of the Bidder(s)/ Contractor(s)

1) It is required that each Bidder/Contractor (including their respective officers, employees and agents) adheres to the highest ethical standers, and report to the Government / Department all suspected acts of **fraud or corruption or Coercion or Collusion** of which it has knowledge or becomes aware, during the tendering process and through the negotiation or award of a contract.

2) The Bidder(s)/Contractor(s) commit himself to take measures necessary to prevent corruption. He commits himself to observe the following principles during his participation in the Tender process and during the Contact execution:

    a. The Bidder(s)/Contractor(s) will not, directly or through any other person or firm, offer, promise or give to any of the Principal/Owner's employees involved in the Tender process or execution of the Contractor to any third person any material or other benefit which he/she is not legally entitled to, in order to obtain in exchange any advantage of any kind whatsoever during the Tender process or during the execution of the Contractor.

Seal and Signature of the bidder   Registrar, for NITK Surathkal

b.   The Bidder(s)/Contractor(s) will not enter with other Bidder(s)into an undisclosed agreement or understanding, whether formal or informal. This applies in particular to prices, specifications, certifications, subsidiary contracts, submission or non-submission of bids or any other actions to restrict competitiveness or to cartelize in the bidding process.

c.   The Bidder(s)/Contractor(s) will not commit any offense under the relevant IPC/PC Act. Further, the Bidder(s)/Contractor(s) will not use improperly, (for the purpose of competition or personal gain), or pass on to others, any information or documents provided by the Principal/Owner as

d.   part of the business relationship, regarding plans, technical proposals and business details, including information contained or transmitted electronically.

e.   The Bidder(s)/Contractor(s) of foreign origin shall disclose the names and addresses of agents/representatives in India if any. Similarly, Bidder(s)/Contractor(s) of Indian Nationality shall disclose names and addresses of foreign agents/representatives if any. Either the Indian agent on behalf of the foreign principals or the foreign principal directly could bid in a tender but not both. Further, in cases where an agent participates in a tender on behalf of one manufacturer, he shall not be allowed to quote on behalf of another manufacturer along with the first manufacturer in a subsequent/parallel tender for the same item.

f.   The Bidder(s)/Contractor(s) will when presenting his bid, disclose any and all payments he has made, is committed to or intends to make to agents, brokers, or any other intermediaries in connection with the award of the Contract.

iii.   The Bidder(s)/Contractor(s) will not instigate third persons to commit offenses outlined above or be an accessory to such offenses.

iv.   The Bidder(s)/Contractor(s) will not, directly or through any other person or firm indulge in fraudulent practice **means a willful misrepresentation or omission of facts or submission of fake/forged documents in order to induce a public official to act in reliance thereof, with the purpose of obtaining unjust advantage by or causing damage to a justified interest of others and/or to influence the procurement process to the detriment of the Government interests.**

v.   The Bidder(s)/Contractor(s) will not, directly or through any other person or firm use Coercive practices (means the act of obtaining something, compelling action or influencing a decision through intimidation, there or the use of force directly or indirectly, where potential or actual injury may befall upon a person, his/her reputation or property to influence their participation in the tendering process).

Seal and Signature of the bidder   Registrar, for NITK Surathkal

Article 3: Consequences of Breach

Without prejudice to any rights that may be available to NITK Surathkal under law or the Contract or its established policies and laid down procedures, the Principal/Owner shall have the following rights in case of breach of this Integrity Pact by the Bidder(s)/Contractor(s) and the Bidders/Contractor accepts and undertakes to respect and uphold the Principal/Owner's absolute right:

1) If the Bidder(s)/Contractor(s), either before awarded or during the execution of Contract has committed a transgression through a violation of Article 2 above or in any other form, such as to put his reliability or credibility in question, the Principal/Owner after giving a 14-day notice to the contractor shall have powers to disqualify the Bidder(s)/Contractor(s) from the Tender process or terminate/determinate the Contract - if already executed or exclude the Bidders/Contractor from future contract award processes. The imposition and duration of the exclusion will be determined by the severity of transgression and determined by the Principal/Owner. **Such exclusion may be forever or for a limited period as decided by NITK Surathkal.**

2) **Forfeiture of EMD/Performance Guarantee/Security Deposit:** If NITK Surathkal has disqualified the Bidder(s) from the tender process before the award of the Contract or terminate/determinate the Contractor has accrued the right to terminate/determinate the Contract according to Article 3(1), the Principal/Owner apart from exercising any legal rights that may have accrued to NITK Surathkal, may in its considered opinion forfeit the entire amount of Earnest Money Deposit, Performance Security of the Bidders/Contractor.

3) **Criminal Liability**: If NITK Surathkal obtains knowledge of the conduct of a Bidder or Contractor, or of an employee or a representative or an associate of a Bidder or Contractor which constitutes corruption within the meaning of Indian Penal code (IPC)/Prevention of Corruption Act, or if the Principal/Owner has substantive suspicion in this regard, NITK Surathkal will inform the same to law enforcing agencies for further investigation.

Article 4: Previous Transgression

1) The Bidder declares that no previous transgressions occurred in the last 5 years with any other Company in any country conforming to the anti-corruption approach or with Central Government or State Government or any other Central/State Public Enterprises in India that could justify his exclusion from the Tender process.

2) If the Bidder makes an incorrect statement on this subject, he can be disqualified from the Tender process or action can be taken for banning of business dealings/ holiday listing of the Bidder/Contractor as deemed fit by the Principal/Owner.

3) If the Bidder/Contractor can prove that he has resorted/recouped the damage caused by him and has installed a suitable corruption prevention system, the Principal/Owner may, at its discretion, revoke the exclusion prematurely.

Seal and Signature of the bidder   Registrar, for NITK Surathkal

Article: 5 Equal Treatment of all Bidder/Contractors/Subcontractors

1) The Bidder(s)/Contractor(s) undertake(s) to demand from all subcontractors a commitment in conformity with this Integrity Pact. The Bidders/Contractor shall be responsible for any violation(s) of the principles laid down in this agreement/Pact by any of its Sub-contractors/sub-vendors.

2) The Principal/Owner will enter into pacts on identical terms as this one with all Bidders and Contractors.

3) The Principal/Owner will disqualify Bidders, who do not submit, the duly signed pact between the Principal/Owner and the bidder, along with the Tender, or violate its provisions at any stage of the Tender process, from the Tender process.

Article 6: Duration of the Pact

This Pact begins when both the parties have legally signed it. It expires for the Contractor/Vendor 12 months after the completion of work under the contractor or till the continuation of defect liability period, whichever is more and for all other bidders, till the Contract has been awarded.

If any claim is made/lodged during the time, the same shall be binding and continue to be valid despite the lapse of these pacts as specified above, under it is discharged/determined by the Competent Authority of NITK, Surathkal.

Article 7: Other Provisions

1) This Pact is subject to Indian Law, place of performance and jurisdiction is **Mangaluru**, the Headquarters of NITK Surathkal, who has floated the Tender.

2) Changes and supplements need to be made in writing. Side agreements have not been made.

3) If the Contractor is a partnership or a consortium, this Pact must be signed by all the partners or by one or more partners holding power of attorney signed by all partners and consortium members. In the case of a Company, the Pact must be signed by a representative duly authorized by board resolution.

4) Should one or several provisions of this Pact turn out to be invalid; the remainder of this Pact remains valid. In this case, the parties will strive to come to an agreement with their original intentions.

5) It is agreed on terms and conditions that any dispute or difference arising between the parties with regard to the terms of this Integrity Agreement / Pact, any action was taken by the Owner/Principal in accordance with this **Integrity Agreement/Pact or interpretation thereof shall not be subject to arbitration.**

Seal and Signature of the bidder   Registrar, for NITK Surathkal

Article 8: LEGAL AND PRIOR RIGHTS

All rights and remedies of the parties hereto shall be in addition to all the other legal rights and remedies belonging to such parties under the Contract or law and the same shall be deemed to be cumulative and not alternative to such legal rights and remedies aforesaid. For the sake of brevity, both the Parties agree that this Integrity Pact will have precedence over the Tender/Contract documents with regard to any of the provisions covered under this Integrity Pact.

IN WITNESS WHEREOF the parties have signed and executed this Integrity Pact at the place and date first above mentioned in the presence of the following witnesses:

……………..…………………………………………..

……...………..…………………………………………..

(For and on behalf of NITK Surathkal)   (For and on behalf of bidder/ contractor)

WITNESSES:

    1.   …………………………………….
        (Signature, name, and address)

    2.   …………………………………….
        (Signature, name, and address)

Place: Surathkal.   Dated:

Format for Bank Account details of the bidder

Name of the account holder (the bidder)	
Complete address	
Contact number	
Email address	

Bank Account details:

Bank name	
Branch name	
MICR number	
Account type	
Account Number	
Please re-type the Account number again	
IFSC code of the Bank	

I hereby declare that the particulars given above are correct and complete. If the transaction is delayed or not affected at all for reasons of incomplete or incorrect information, I would not hold the Institute responsible for this.

I have read the option invitation letter and agree to discharge the responsibility expected of me as a participant under the scheme.

Seal and signature of the bidder.

Certification from the banker:

Certified that the particulars furnished above are correct as per our records.

Seal and signature of the authorized officer of the bank.

FORMAT FOR PERFORMANCE GUARANTEE BOND
(To be typed on Non-judicial stamp paper of the value of Indian Rupees of One Hundred)

To,
Director,
National Institute of Technology Karnataka,
Srinivasnagar P.O., Surathkal
Mangaluru – 575025

Whereas…………………………………………… (name and address of the contractor) (hereinafter called "the contractor") has undertaken, in pursuance of contract no ……….. date……………. to supply ……………… (description of goods and Works/ Services) (hereinafter called "the contract").

And Whereas you have stipulated it in the said contract that the contractor shall furnish you with a bank guarantee by a Commercial bank for the sum specified therein as security for compliance with its obligations as per the contract;

And Whereas we have agreed to give the contractor such a bank guarantee.

Now Therefore we hereby affirm that we are guarantors and responsible to you, on behalf of the contractor, up to a total of …………………………………………………….(amount of the guarantee in words and figures), and we undertake to pay you, upon your first written demand declaring the contractor to be in default under the contract and without cavil or argument, any sum or sums within the limits of (amount of guarantee) as aforesaid, without your needing to prove or to show grounds or reasons for your demand or the sum specified therein.

We hereby waive the necessity of your demanding the sail debt from the contractor before presenting us with demand.

We further agree that no change or addition to or other modification of the terms of the contract to be performed thereunder or of any of the contract documents which may be made between you and the contractor shall in any way release us from any liability under this guarantee, and we hereby waive notice of any such change, addition, or modification.

This guarantee shall be valid until the ………….day of …….20……

Our………………………………….branch at………………*(Name & Address of the ………….…………..*(branch) is liable to pay the guaranteed amount depending on the filing of a claim and any part thereof under this Bank Guarantee only and only if you serve upon us at our ………………* branch a written claim or demand and received by us at our …………………..* branch on or before Dt………….. otherwise, the bank shall be discharged of all liabilities under this guarantee after that.

(Signature of the authorized officer of the Bank)
……………………………………….
……………………………………….
Name and designation of the officer
……………………………………
Seal, name & address of the Bank and address of Branch

*Preferably at the headquarters of the authority competent to sanction the expenditure for the procurement of goods or at the concerned district headquarters or the state headquarters.

(Compliance to be submitted in the bidder's letterhead)
(as applicable)

Sub: Compliance to Government of India order OM No.6/18/2019-PPD dated 23.07.2020 & 24.7.2020 regarding restrictions under Rule 144 (XI) of the General Financial Rules (GFRs), 2017

Item Name:	
Enquiry No.:	

We M/s._____(name of the bidder company) have read the clauses pertaining to the Department of Expenditure's (DoE) Public Procurement Division Order (Public procurement no 1,2 & 3 vide ref. F.No.6/18/2019-PPD dated 23.07.2020 & 24.7.2020) regarding restrictions on procurement from a bidder of a country that shares a land border with India.

We hereby certify that **we are not from such a country** and eligible to be considered for this tender.

(Note: Non-compliance of above said GoI Order and its subsequent amendment, (if any), by any bidder(s) shall lead to commercial rejection of their bids by NITK)

For and behalf of_____(Name of the bidder)

(Signature, date & seal of an authorized representative of the bidder)

(Compliance to be submitted in the bidder's letterhead)
(as applicable)

Sub: **Compliance to Government of India order OM No.6/18/2019-PPD dated 23.07.2020 & 24.7.2020 regarding restrictions under Rule 144 (XI) of the General Financial Rules (GFRs), 2017**

Item Name:	
Enquiry No.:	

We M/s._____(name of the bidder company) have read the clauses pertaining to the Department of Expenditure's (DoE) Public Procurement Division Order (Public procurement no 1,2 & 3 vide ref. F.No.6/18/2019-PPD dated 23.07.2020 & 24.7.2020) regarding restrictions on procurement from a bidder of a country which shares a land border with India.

We are from such a country which shares a land border with India & have been registered with the Competent Authority as specified in the above-said order. We hereby certify that we fulfill all requirements in this regard and are eligible to be considered.

Evidence of valid registration by the Competent Authority is attached.

(Note: Non-compliance of above said GoI Order and its subsequent amendment, (if any), by any bidder(s) shall lead to commercial rejection of their bids by NITK)

For and behalf of_____(Name of the bidder)

(Signature, date & seal of an authorized representative of the bidder)

Self-Certification on the letterhead of the company

In line with Government Public Procurement Order No. P-45021/2/2017-BE-II dt. 15.06.2017, P-45021/2/2017-PP (BE-II) dated 28.05.2018, P-45021/2/2017-PP (BE-II) dated 29.05.2019 and P-45021/2/2017-PP (BE-II) dated 16.09.2020, we hereby certify that

……………………………………………………………………………………………………

(Supplier name) are local supplier meeting requirement of minimum local content _____ % defined in as above orders for the material against Enquiry / Tender No

……………………………………………………………………………………………………

……………………………………………………………………………………………………

……………………………………………………………………………………………………

Details of the location at which local value addition will be made are as follows:

……………………………………………………………………………………………………

……………………………………………………………………………………………………

……………………………………………………………………………………………………

We also understand false declarations will be in breach of the Code of Integrity under Rule 175(1)(i)(h) of the General Financial Rules for which a bidder or its successors can be debarred for up to two years as per Rule 151 (iii) of the General Financial Rules along with such other actions as may be permitted under law.

Date: Signature:
Place: Name and Designation:
                                               Mobile no:
                                               Office Telephone No: Email
                                               ID:
                                               Office Seal:

FORMAT FOR EARNEST MONEY DEPOSIT / BID BOND
(To be typed on <u>Non-judicial stamp paper</u> of value Indian Rupees One Hundred)
(TO BE ESTABLISHED THROUGH ANY OF THE NATIONAL BANKS (WHETHER SITUATED AT MANGALURU OR OUTSTATION) WITH A CLAUSE TO ENFORCE THE SAME ON THEIR LOCAL BRANCH AT MANGALURU OR ANY SCHEDULED BANK (OTHER THAN NATIONALISED BANK) SITUATED AT MANGALURU. BONDS ISSUED BY COOPERATIVE BANKS ARE NOT ACCEPTED)

LETTER OF GUARANTEE

To
Director,
National Institute of Technology Karnataka,
Srinivasnagar P.O., Surathkal
Mangaluru – 575025

IN ACCORDANCE WITH YOUR TENDER for the supply of …..........................., M/s............................ (hereinafter called the "Bidder") having its Registered Office at ...., wish to participate in the said bid for the supply..as an irrevocable Bank Guarantee against Earnest Money Deposit for an amount of Rs. …................... (Rupees.............................) valid up to **(180 days from the date of issue of Bank Guarantee)**, is required to be submitted by the bidder as a condition precedent for participating in the said bid, which amount is liable to be forfeited by the Purchaser on (1) the withdrawal or revision of the offer by the bidder 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 execute the contract as per contractual terms and condition within the contractual delivery period and (4) on the happening of any contingencies mentioned in the bid documents.

 During the validity of this Bank Guarantee:
We, …......................(Bank name) having the registered office at......................................guarantee and undertake to pay immediately on first demand by NITK Surathkal, an amount of Rs.......................... (Rupees. ....) without any reservation, protest, demur and recourse. Any such demand made by the NITK Surathkal shall be conclusive and recourse. Any such demand made by the purchaser shall be binding on the Bank irrespective of any dispute or difference raised by the Bidder.
 The Guarantee shall be irrevocable and shall remain valid up to........................(180 days from the date of issue of Bank Guarantee) If any further extension is required, the same shall be extended to such required period on receiving instruction from the Bidder, on whose behalf the is Guarantee is issued.

Notwithstanding anything contained herein:
∗ Our liability under this Bank Guarantee shall not exceed Rs.................... (Rupees....................).

٭ This Bank Guarantee shall be valid up to...(date).

٭ We are liable to pay the guaranteed amount or any part thereof under this Bank Guarantee Only and only if you serve upon us a written claim 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:

Instruction to Bank: Bank should note that on expiry of Bond Period, the Original Bond will not be returned to the Bank. The bank is requested to take appropriate necessary action on or after the expiry of the bond period

Checklist for BIDDERs

BIDDERS are to indicate whether the following documents are uploaded by striking out the non-relevant option and the relevant technical bid documents should be in order.

Sl. No.	Documents	Content	Document Attached
1		A signed copy of the tender document should be uploaded	**(Yes/No)** Pg. No
2		Self-Attested copy of GST & PAN Number	**(Yes/No)** Pg. No.
3		License certificate for manufacture /supply of the item & Factory license. Registration with EPF and ESI	**(Yes/No)** Pg. No.
4		Undertaking that the successful BIDDER agrees to give a 3% Performance Security.	**(Yes/No)** Pg. No.
5		Catalogue of the Product with detailed product specifications.	**(Yes/No)** Pg. No.
6		Copy of the Balance Sheet	**(Yes/No)** Pg. No.
7		List of Owner/partners of the firm and their contact numbers (Bidder Information)	**(Yes/No)** Pg. No.
8	**Technical Bid**	The contract form is given in section 5	**(Yes/No)** Pg. No.
9		Format of compliance statement of specification as per **Annexure-'A'**	**(Yes/No)** Pg. No.
10		Previous Supply Order as per **Annexure-'B'**	**(Yes/No)** Pg. No.
11		Declaration of abandoned or suspended any awarded service & Blacklist Certificate. **Annexure 'C'**	**(Yes/No)** Pg. No.
12		Integrity Pact. **Annexure 'D'**	**(Yes/No)** Pg. No.
13		Bank details of the bidder. **Annexure 'E'**	**(Yes/No)** Pg. No.
14		EMD FORMAT **Annexure 'J'**	**(Yes/No)** Pg. No.
15		Technical specifications as per Technical specification format (Page No: 24 to 53), Technical Compliance Sheet and unpriced financial Bid.	**(Yes/No)** Pg. No.

16		Annexure –'G'	**(Yes /No)** Pg. No.
17		Annexure –'H'	**(Yes /No)** Pg. No.
18		Annexure –'I'	**(Yes /No)** Pg. No.
19		Any other documents (please specify) as mentioned in the Tender document	**(Yes /No)** Pg. No.
20	**Financial-Bid**	Price bid	**(Yes /No)**

Seal and Signature of the bidder