

**RailTel's Bid Specific Additional Terms & Conditions (ATC)****Information to Bidder for the “Supply of Layer-2 Access Switches, Firewall, Router, Access Point, SFP, AC to DC and DC to AC converter, Patch cord, Attenuator and Adaptor for O & M of RailTel Corporation of India Limited, Eastern Region”****Ref: GeM Bid No. GEM/2026/B/7319622, Dated 05.03.2026**

TReDS feature is available	Yes, on m1xchange portal, (URL: <a href="https://www.m1xchange.com">https://www.m1xchange.com</a> )
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**1. Name of the Work & Type of Tender:****Name of the work:****Supply of Layer-2 Access Switches, Firewall, Router, Access Point, SFP, AC to DC and DC to AC converter, Patch cord, Attenuator and Adaptor for O & M of RailTel Corporation of India Limited, Eastern Region.****Type of Tender:**

Open Tender – Two Packet System

The items in this bid should be quoted as per the technical specifications. The details of the specifications along with consignee/site details are also available in Annexure-I and Annexure-VI

- The bidder should be either OEM or his authorized dealer/distributor/partner/trader. OEM or Authorized dealer/ distributor/ Partner/ Trader authorized by OEM specific to this bid should have a registered office in India to provide sales and 24x7 support in India. The certificate to this effect should be submitted.
- The material offered shall have complete data sheets and detailed description on OEM websites. Bidders are required to submit duly filled and signed technical compliance of the material offered in Annexure-I, failing which the bids may be rejected. All the Technical specification outlined in the ATC will prevail over the GEM
- Hardware and Software offered by OEM (Routers, Switch and SFPs, Access Point, Firewall) should have End of Life (EOL) not less than prescribed in Technical Annexure - I from the date of Supply. The bidder is required to submit compliance to this clause as per Annexure-X
- GSTIN ID of vendor should be provided from where goods will be supplied.

**6.0 SOR, Estimated Cost, Delivery Period & Consignee:**

<b>SOR No.</b>	<b>Details of Material</b>	<b>Estimated Cost in Rs. (Incl. GST)</b>
1	Patch cord, Attenuator, Adaptor and SFP	32,05,423.28
2	Supply of Layer-2 Access Switch	17,50,117.20
3	Supply of Layer-2 Switch and accessories	2,43,55,831.58
6	Supply of outdoor Access points	47,31,623.00
<b>Total Amount in Rs. (Incl. GST)</b>		<b>3,40,42,995.06</b>

**6.a.1. Delivery Period:**

- 6.1.a.1 Delivery period is given in Annexure-VI, Qty. of **material of Lot-1 shall be delivered within 30-45** days from the date of issue of Purchase Order. Qty. of material of Lot-2 shall be delivered within 2 years from issue of Purchase Order.
- 6.1.a.2 However, if there is an urgent requirement, the required material of Lot-2 shall be delivered within 2 months from the date of advice.
- 6.1.a.3 **Liquidated Damages:**  
If material is not supplied within the approved delivery period then penalty of 0.5% of undelivered quantity per week or part thereof for the undelivered portion subject to the maximum to the 10% of the contract value will be levied.
- 6.1.a.4 Consignee : List of consignees is available at Annexure-VI.

**Proof of Concept (POC)/Demonstration (applicable for SOR-1, Switch)**

Bidders offering their equipment are to conduct POC/Demonstration as advised by RailTel within 21 days of opening of technical bid at RailTel NOC/ Kolkata or any other locations advised by the POC team. The expenses incurred for POC/Demonstration will be borne by the bidder. Bidders must ensure that make and model of Hardware & Software used in POC/Demonstration should be same as offered in their submitted bids. Please note that no deviation in terms of Make & Model offered in Tender will be permitted. In case of any deviation found in make and model in Hardware/Software offered for POC/Demonstration, bidder's bid will be technically disqualified. If the offered equipment failed during the POC/Demonstration, the bidder's bid will be technically disqualified.

**6.1 b. Inspection :**

- 6.1.b.1. The supplier/ manufacturer shall give a call for inspection when the material is ready to be supplied and ready for inspection. The Inspection shall be carried out at supplier's/ Manufacturer's facility /at RailTel Store as decided by RailTel/ER by the Inspecting Authority/Consignee. The supplier shall make available for inspection all types of material in sufficient numbers so as to create a test setup for carrying out various tests as per the approved test plan and test setup.
- 6.1.b.2 The supplier/ manufacturer shall submit along with inspection call the details of test procedures, test programs, test parameters together with permitted values, etc., and their Quality Assurance Plan.
- 6.1.b.3 In case material/ equipment fails during inspection, the fresh lot of the same material/ equipment shall be offered without any extra cost, by the manufacturer/ supplier. In such a case, the total cost of re-inspection including travel, lodging & boarding of the inspecting officials shall be to manufacturer's / supplier's account/cost.
- 6.1.b.4 Inspection of the material shall be conducted by representative authorized by RailTel/ER at the firm's premises/consignee location decided by RailTel/ER. The inspection shall be conducted by the inspecting authority as per required test procedures/ test plan for ensuring that the material offered meets the required specifications.

- 6.1.b.5 The material should be offered for inspection within three weeks before the scheduled delivery period. Travelling, lodging and boarding expenses of RailTel representative and charges for third party inspection if any shall be borne by RailTel, but necessary facilities to carry out test/ witness inspection shall be provided by the manufacturer/ supplier, free of cost.
- 6.1.b.6 The manufacturer shall maintain stock register (receipt, issue and balance) and defect records for the raw material. The defect records shall be in standard formats, and it shall be complied on a daily/ weekly/ monthly basis and it shall be analysed. “NIL” Report shall be segregated from the accepted material. First-in First-out concept shall be implemented in a foolproof manner. The batches of the raw material shall be identified and traceable. All relevant documents necessary to ensure traceability shall be maintained. The raw materials shall be protected from direct exposure to sunlight, moisture, water ingress and heat etc.
- 6.1.b.7 Finished products shall be tested 100% by the factory QC personnel before being offered to RailTel for acceptance to ensure that it meets all quality requirements as per the relevant specifications. Duly filled in test formats indicating the results of such tests shall be submitted along with material offered for inspection to RailTel.
- 6.1.b.8 Exemption of inspection at factory premises (FAT) will be at the sole discretion of RailTel, if RailTel decides not to conduct Factory Acceptance Testing (FAT) at the manufacturing facility, the equipment shall be accepted on the basis of supplier’s internal test report, guarantee and fitment certificate. In this regard, the written approval of the Head of the Indenting department should be obtained recording the reasons for it.

## 7 Estimated cost, Earnest Money Deposit/Bid Security:

**7.1 Estimated cost Rs. 3,40,42,995.06 (Rupees Three Crore Forty Lakh Forty Two Thousand Nine Hundred Ninety Five and paise Six only) (Incl. GST)**

### 7.2 Earnest Money Deposit (EMD):

- (i) Earnest Money Deposit (EMD): Rs. 6,81,000.00 (Rupees Six Lakh Eighty One Thousand only). EMD can be submitted in the form of Demand Draft/Pay Order/Banker’s Cheque drawn in favour of “RailTel Corporation of India Ltd.” payable at Kolkata.
- (ii) The Bid received without EMD will be summarily rejected.
- (iii) In addition to clause 7.2 (i) above, Tenderer has an option for online submission of EMD also. The EMD should be remitted in following bank account of RailTel Corporation of India Limited before the stipulated time and date of bid submission:

Name of the Bank and Address	Union Bank of India, Chowringhee Road Branch, 1/1 Camac Street, Ground Floor, Kolkata – 700016
Name of the account holder	RailTel Corporation of India Limited
Account Number	401601010519491
IFSC Code	UBIN0540161

Bidder to indicate bid no. and name of bidding entity in the transaction details field at the time of online transfer. Bidder has to upload scanned copy of Demand Draft/Pay Order/Banker’s Cheque

/proof of the online payment transfer along with bid. If EMD is submitted in the form of Demand Draft/Pay Order/Banker's Cheque, the original shall receive RailTel office at Salt Lake, Kolkata before the last date and time of submission of the bid.

- 7.2.a Eligible Micro and Small enterprise (MSEs) bidders/ Startups are exempted from submission of EMD amount. However, in lieu of EMD, MSE bidders/ Startups must furnish Bid Security Declaration (BSD) as per 'Annexure-V.
- 7.2.b For small scale units registered with NSIC under single point registration Scheme and participating in this tender enquiry are exempted from depositing Earnest money. These exemptions are applicable provided units are registered with NSIC for tendered item and registration is current and valid. Firms claiming these exemptions are required to submit along with their offer, copy of their current and valid NSIC registration certificate for the tendered item, otherwise their offer would not be considered.
- 7.2.c Sellers/ Service provider having annual turnover of INR 500 Crore or more, at least in one of the past three completed financial years are exempted from submission of EMD as per GeM GTC with the bid.
- 7.2.d EMD shall be exempted for Micro & small Enterprises registered for the tendered items/ as per the latest Govt. of India guidelines. Under **MSE category, only manufacturers for offered goods in case of bid for supply of goods are eligible for exemption from EMD. Traders are excluded from the purview of this Policy.** The bidders claiming the preference must submit relevant documents. The Bid received without EMD /Documentary proof of Exemption of EMD, will be summarily rejected.
- 7.2.e No exemption is, however, applicable to these units from payment of Security Deposit/ Performance Bank Guarantee.
- 7.2.f The Bid received without EMD/ documentary proof of exemption of EMD as per above clause will be summarily rejected.**
- 7.2.g Earnest Money of the unsuccessful bidder will be discharged/returned as promptly as possible. No interest shall be payable on the EMD.

**TReDS Platform:**

- 7.3 RailTel is registered with m1xchange TReDS platform having buyer registration number "BUYER00001496". The URL for m1xchange platform is <https://m1xchange.com>. MSE suppliers/vendors are required to register themselves on m1xchange platform for availing the facility of bill discounting on TReDS portal. The bidder is mandatorily required to submit its TReDS registration number (as provided by m1xchange portal) and GRN (Goods/Service Receipt Note) Number (as provided by RailTel on delivery of Goods/Service) while submitting the invoices if requires to avail TReDS facility.
- 7.4 MSE vendor will bear all costs relating to availing the facility of discounting on TReDS platform including but not limited to Registration charges, Transaction charges for financing, Discounting charges, Interest on financing, or any other charges known by any name shall be borne by MSE vendor.
- 7.5 MSE vendor hereby agrees to indemnify, hold harmless and keep RailTel and affiliates, Directors,

Officers, representative, agents and employees indemnified, from any and all damages, losses claims and liabilities (including legal costs) which may arise from Sellers submission, posting or display, participation, in any manner, on the TReDS platform or from the use of Services from the Buyer's breach of any of the terms and conditions of the Usage terms or of this agreement and any applicable Law on a full indemnity basis.

- 7.6 RailTel shall not be liable for any special, indirect, punitive, incidental or consequential damages or any damages whatsoever (including but not limited to damage for loss of profits or savings, business interruption, loss of information), whether in contract, tort, equity or otherwise or any other damages resulting from using TReDS platform for discounting their (MSE Vendor's) invoices.
- 8 This bid complies with "Public Procurement (preference to make in India) Policy Order, 2017 or latest issued by DIPP and Public Procurement Policy for Micro and Small Enterprises (MSEs) order,2012" or latest issued by MoSME." The bidders claiming the preference have to submit relevant documents prescribed under relevant order.

9 **Security Deposit / Performance Guarantee:**

The successful tenderer shall submit Security Deposit / Performance Guarantee in the form of online transfer or FDR or irrevocable Bank Guarantee from any scheduled Commercial bank ( either private or PSU) but not from any cooperative bank or NBFC for due fulfillment of contract as per the details given below:

- i. Security Deposit / Performance Guarantee @ 10% of total value of GeM Contract/purchase Order including GST, round off to the nearest higher Rs.1000/-. Performance Security is to be furnished within 30 (thirty) days from the date of the award, and it should remain valid for a period of 90 (ninety) days beyond the date of completion of all contractual obligations of the supplier, including warranty obligations **allowing claim period of one year** (in the event of forfeiture of the bank guarantee) on top of the guarantee period. PBG format specified in Annexure-IV.
- ii. Successful tenderer is required to furnish Security Deposit / Performance Guarantee within 30 days of issue of LOA/PO failing which a penal interest of 15% per annum shall be charged for the delay period i.e. beyond 30 (thirty) days from the date of issue of LOA/PO.

**If the successful tenderer failed to submit Security Deposit/Performance Guarantee within 60 days of award of work, RailTel may terminate the contract.**

- iii. The security deposit/PBG shall be submitted to Eastern Regional office.
- iv. **In case of PBG:** A separate advice of the BG will invariably be sent by the BG issuing bank to the RailTel's Bank through SFMS and only after this the BG will become acceptable to RailTel. It is therefore in own interest of bidder to obtain RailTel's bank IFSC code, its branch and address and advise these particulars to the BG issuing bank and request them to send advice of BG through SFMS to the RailTel's Bank. The details of RailTel's details for SFMS are as:

BG advising message – IFN 760COV/ IFN 767COV via SFMS

To mandatorily send the Cover message at the time of BG issuance. IFSC Code of ICICI Bank to be used (ICIC0000007).

Mention the unique reference (RAILTEL6103) in field 7037

The security deposit/Performance Bank Guarantee shall be released after successful completion of Contract obligations under the contract, duly adjusting any dues recoverable from the successful tenderer. Payment of Security Deposit in the form of Pay Order/Demand Draft should be made in favor of “RailTel Corporation of India Ltd” payable at concerned Region. This PBG would be released after satisfactory completion of contract including warranty period.

**Note:**

1. Any performance security up to a value of Rs. 5 Lakhs is to be submitted through online transfer only.

RailTel’s Bank Account Details for submission of online PG amount are given as below:

Company Name: RailTel Corporation of India Ltd.

Bank Name: Union Bank of India

Branch Name: Camac Street Branch

Bank IFSC: UBIN0540161

Account Type: Current Account

Account No.: 401601010519491

Address: 1/1, Camac Street, Ground Floor, Kolkata, West Bengal, PIN-700016

2. In case of submission of Performance Guarantee in form of FDR (More than 5 Lakhs), then lien should be created in favor of “RailTel Corporation of India Ltd.”.
3. No Interest shall be paid on the amount of Earnest Money and Performance Security held by RailTel at any stage.

**10 Technical Eligibility/ Evaluation/ Qualification Criteria:**

**10.1** Not used

**10.2 Technical Eligibility of the Bidder :**

The Bidder/OEM {themselves or through reseller(s)}, should have executed project for supply and installation /commissioning of same or similar Category Products during preceding 3 financial years (i.e. current year and three previous financial years) as on opening of bid, as per following criteria:

- (i) Single order of at least 35% of estimated bid value; or
- (ii) Two orders of at least 20% each of estimated bid value; or
- (iii) Three orders of at least 15% each of estimated bid value.

Satisfactory Performance Certificate issued by respective Buyer Organisation for the above Orders should be uploaded with bid. In case of bunch bids, the Category related to primary product having highest bid value should meet this criterion.

**10.3 Definition of similar work:** The work of Supply/ Supply & Installation of Switch / Firewall / Router / Access point/ SFP / Patch Cord for any Government department/ State Government/ PSU/ reputed TELECOs/ public listed companies (as per note below)

**Note:** Work experience certificate from private individual shall not be considered. However, in addition to work experience certificates issued by any Govt. Organization, PSU or any reputed Telecommunications company (TELCO), work experience certificate issued by Public listed company having average annual turnover of Rs 500 crore and above in last 3 financial years excluding the current financial year, listed on National Stock Exchange (NSE) or Bombay Stock Exchange (BSE), incorporated/registered at least 5 years prior to the date of opening of tender, shall also be considered provided the work experience certificate has been issued by a person authorized by the Public listed company to issue such certificates.

**Note-1 :** In case a contract is started prior to 03 (three) years, ending on the date of opening of bid, but completed in last 03 (three) years, ending on the date of opening of bid, the completed work shall be considered for fulfilment of credentials.

**Note-2:** Separate completed works of minimum required values for each component shall also be considered for fulfilment of technical eligibility criteria. In such cases, what constitutes a component in a composite work shall be clearly pre- defined with estimated tender cost of it, as part of the tender document (ATC) without any ambiguity. To evaluate the technical eligibility of tenderer, only components of work as stipulated in tender document (ATC) for evaluation of technical eligibility, shall be considered. The scope of work covered in other remaining components shall be executed by tenderer himself.

In case tenderer submits work experience certificate issued by public listed company, the tenderer shall also submit along with work experience certificate, the relevant copy of work order, bill of quantities, bill wise details of payment received duly certified by Chartered Accountant, TDS certificates for all payments received and copy of final/last bill paid by company in support of above work experience certificate.

**The above Technical Eligibility Criteria is also applicable for Startup Bidder also.**

#### **10.4 Financial Criteria for Bidder:**

The bidder should have minimum cumulative turnover from operations in the previous three financial years and the current financial year, at least 150% of the advertised value of the tender. The tenderers shall submit Certificates to this effect which may be an attested Certificate from the concerned department / client or Audited Balance Sheet duly certified by the Chartered Accountant/Certificate from Chartered Accountant duly supported by Audited Balance Sheet.

The contact details of CA/Statutory Auditor along with UDIN No. shall be mandatorily mentioned on copy of certified Balance Sheet/Certificate.

Credentials if submitted in foreign currency shall be converted into Indian currency i.e., Indian Rupee as under:

The conversion rate of US Dollars into Rupees shall be the daily representative exchange rates published by the Reserve Bank of India for the relevant date. Where, the relevant date shall be as on the last day of month previous to the one on which a tender is invited. In case of any other currency, the same shall first be converted to US Dollars as on the last day of month previous to the one in which tender is invited, and the amount so derived in US Dollars shall be converted into Rupees at the aforesaid rate. The conversion rate of such currencies shall be the daily representative exchange rates published by the International Monetary Fund for the relevant date.

**10.4.1 Financial Criteria for Startups (recognized by Department of Industrial Policy and Promotion DIPP):**

The bidder should have minimum cumulative turnover from operation in the previous three financial years and the current financial year, at least 50% of the advertised value of the tender. The tenderers shall submit Certificates to this effect which may be attested

(Note: Client certificate from other than Govt. Organization should be duly supported by Form 16A/26AS generated through TRACES of Income Tax Department of India).

10.5 Bidder should have authorization specific to this tender from respective OEM as per Annexure-II (for SOR Srl Nos.1 to 17. If OEM directly participating in the bid, self-declaration in this connection required to be submitted.

- I. In the specification wherever support for a feature has been asked for, it will mean that the feature should be available without RailTel requiring any other hardware. Thus, all hardware required for enabling the support/feature shall be included in the offer. The technical specifications are mentioned in Annexure-I.
- II. In case of the bidder is Authorized dealer/ distributor/ Partner/ Trader authorized by OEM specific to this bid, a certificate from the OEM to this effect should be submitted as per the Annexure-II (MAF).
- III. GSTIN ID of vendor should be provided from where goods will be supplied.
- IV. Bidder shall provide duly filled and signed Technical Compliance of the offered material, failing which the bid may get rejected.

10.6 The bidder should not have been banned/ blacklisted by Central Govt./State Govt./CPSU/any Telecom entity in India for the supply of material / security reasons. An undertaking by the Bidder on Company's letter head to be submitted.

The OEM should have proven facilities for Engineering, manufacture, assembly, integration and testing of material and facilities with respect to space, Engineering, Personnel, Test equipment, Manufacture, Training, Repair, Service Centre Supports for at least past three years. In case OEM is located outside India, it should have manufacturing, repair, service centre facilities in India also. The certificates/Undertaking for the same will have to be submitted online at GeM portal

**11. Variation of Quantities at the Time of Award:**

The purchaser reserves the right to increase or decrease the quantity to be ordered up to 25 percent at the time of placement of contract. The purchasers also reserve the right to increase the ordered quantity by up to 25% of the contracted quantity during the currency of the contract at the contracted rates. Bidders are bound to accept the orders accordingly.

**12. Warranty:**

12.1 All the material are to be warranted for the period indicated in SOR shall be warranted from date of delivery to the consignee. The tenderer shall warrant that stores to be supplied shall be new and free from all defects and faults in material, workmanship and manufacturing and shall be of the highest

grade and consistent with the established and generally accepted standards of materials of the type ordered and shall perform in full conformity with the specifications and drawings.

12.2 The supplier shall be responsible for any defects that may develop under the conditions provided by the contract and under proper use, arising from faulty materials, design or workmanship such as corrosion, inadequate quantity of material to meet item requirements, inadequate contact protection, deficiencies in design and/ or otherwise and shall remedy such defects at his own cost when called upon to do so by the Purchaser who shall state in writing in what respect the stores are faulty.

**12.3 Repair**

**12.3.1 Contractor’s Responsibility: -**

The Contractor will take-over the defective material from station/site and hand-over the new/ repaired at the same location.

The following activities will be performed by the contractor:

- I. The received defective material will be got replaced by the contractor within 30 days from the date of receiving and will be handed over to RailTel authorized representative at station/site. The contractor will also give probable reason for failure of material.
- II. All transportation, freight and insurance charges will be borne by the contractor.

**12.3.2 RailTel Responsibility**

RailTel will hand over the equipment to the contractor’s authorized representative at the station/site along with the following relevant information & documentation.

- i. All relevant documentation including failure description, diagnostic tests results.
- ii. Adequate packing material to protect against reasonable risk of damages.
- iii. Not used

12.3.3 If the contractor fails to return the material within 30 days, the following penalties will be imposed:

Item	Duration of repair/ replacement	Deduction/Penalties
Switch/Router/ Firewall/Access point/ Patch cord/ Attenuator/ Adaptor/ SFP/ AC to DC Converter/ DC to AC converter	More than 30 days and up to 40 days (from the date of receipt)	10% of the cost of affected item
	More than 40 days and up to 50 days (from the date of receipt)	25% of the cost of affected item
	More than 50 days and up to 60 days (from the date of receipt)	75% of the cost of affected item
	More than 60 days (from the date of receipt)	Full cost of defective item

### 13. **Payment Terms:**

13.1 Payment will be done after submission of the following documents:

- i. Tax Invoice indicating inter alia description and specification of goods, quantity, unit price, total value etc.
  - ii. Delivery Challan
  - iii. E-way bill
  - iv. Consignee receipt for receipt of goods in good condition
  - v. Certificate of pre-dispatch Inspection by RailTel's representative/nominee
  - vi. Warranty/ guarantee certificate of OEM
  - vii Copy of Performance Bank Guarantee submitted
  - viii. transit Insurance Certificate
  - ix. OEM certificate for the ordered quantity/ material supplied as per specification.
  - x. Packing list
  - xi. Railway/Transporters Receipt/Consignment Note
- a) 100% value on full supply of material of Purchase Order/Sub-Purchase Order on receipt by the consignee at site duly inspected and accompanied with above mentioned documents.
  - b) 80% of the value of the part supply of material of Purchase Order/ Sub-Purchase Order on receipt by the consignee at site duly inspected and accompanied with above mentioned documents. Balance 20% value of the part supply after complete supply of material of Purchase Order/ Sub-Purchase Order.

13.2 **Bill Passing & Bill Paying Authority:** Bill passing Authority is Jt.GM/O&M/Eastern Region and bill paying Authority is Finance Head of Eastern Region. Bills to be submitted through RailTel's Bill Tracking System.

13.3 Any changes in the statutory taxes & duties during the contract period shall be on RailTel account with in the original DOC. Beyond DOC, changes in statutory taxes & duties shall be on RailTel's account only when the delay is an account of RailTel.

14 The tenderers shall submit a notarized affidavit on a non-judicial stamp paper stating that they are not liable to be disqualified and all their statement/documents submitted along with bid are true and factual. **Standard format of the affidavit to be submitted by the bidder is enclosed as Annexure-III. Non submission of a notarised affidavit by the bidder shall result in summarily rejection of his/their bid.** And it shall be mandatorily incumbent upon the tenderer to identify state and submit the supporting documents duly self-attested by which they/he is qualifying the Qualifying Criteria mentioned in the Tender Document. It will not be obligatory on the part of Tender Committee to scrutinize beyond the submitted document of tenderer as far as his qualification for the tender is concerned.

The RailTel (RCIL) reserves the right to verify all statements, information and documents submitted by the bidder in his tender offer, and the bidder shall, when so required by the RailTel (RCIL), make available all such information, evidence and documents as may be necessary for such verification. Any such verification or lack of such verification by the RailTel (RCIL) shall not relieve the bidder of its obligations or liabilities hereunder nor will it affect any rights of the RailTel thereunder.

In case of any wrong information submitted by tenderer, the contract shall be terminated. Performance Guarantee (PG) of contract forfeited and agency barred for doing business on RailTel (RCIL) for 2 (Two) years.

15. **Online submission:**

The bidder is required to upload and submit the following documents on line before due date & time of bid. The due date & time for closing of the bid as per GeM Bid and the bid will be opened as per GeM Bid.

- (i) EMD/Documents in support of exemption from submission of EMD along with Bid Security Declaration.
- (ii) BOQ of the offered equipment.
- (iii) Clause wise compliance along with all mentioned documents/annexures for all clauses of GeM Bid and ATC (Information to bidder) documents.
- (iv) Data Sheet of offered item/equipment.
- (v) Financial (Certified copies of audited balance sheets/annual reports of last three preceding financial years) and Technical Eligibility Criteria documents.
- (vi) Technical Compliance of all Specification of items as per ATC documents.
- (vii) Proof of document required against Eligibility criteria of OEM and Bidder vide para -10 & 23.
- (viii) MAF/OEM Authorization as per **Annexure-II**.
- (ix) Notarized affidavit on a non-judicial stamp paper as per **Annexure-III**.
- (x) **Power of Attorney:** Power of attorney **duly notarized** in favor of the signatory duly authorizing the signatory shall be submitted online before the due date and time of submission of the e-Tender. **Power of Attorney issued by the Company (backed by the resolution of Board of Directors) in favour of the individual to sign the tender.**
- (xi) NIL deviation declarations as per **Annexure- VII**.
- (xii) Self-Certification under preference to “MAKE IN INDIA” Policy as **Annexure-VIII**.
- (xiii) A certificate on their letter heads **Annexure-IX** shall be submitted by the bidder.
- (xiv) The bidder should not have been blacklisted by Central Govt./State Govt./CPSU/any reputed Telecom service provider in India for the supply of material / security reasons. An undertaking as per Annexure-10 to be submitted.

**Offline submission**

The bidder is required to submit the following documents offline to within 07 days of opening of tender in a Sealed Envelope. The envelope shall bear the tender name and the tender number:

AGM/Tender,  
RailTel Corporation of India Ltd., 19th Floor,  
Aurora Waterfront Building, Plot No. 34/1,  
Block GN, Sector-V, Salt Lake City, Bidhannagar,  
Kolkata-700091

- a. Notarized Power of attorney in favor of the signatory duly authorizing the signatory.
- b. Notarized Affidavit as per Annexure-III on stamp paper of Rs.100/- regarding authenticity of the documents submitted/Information provided in the bid, non-submission of an affidavit by the bidder may result in rejection of his/their bid.
- c. Bid Security Declaration (in case of MSE/Startup).

**NOTE: The Bidder has to upload the Scanned copy of all above original documents as Bid-Annexures during Online Bid-Submission.**

**16. Public Procurement Policy (Preference to Make in India):**

The provisions of the Public Procurement (Preference to Make in India) Order 2017 dated June 15, 2017 (or subsequent revisions, if any) by Department of Industrial Policy and Promotion, GoI shall apply to this tender to the extent feasible. Minimum Local Content for SOR items shall be 50% for purchase preference as per the Notification No. 18-10/2017-IP dated 29th August 2018 issued by Department of Telecommunications, Ministry of Communications or as per the latest notification. Bidder shall be required to give a self-certification in his bid that the item offered meets the local content and shall give details of the location(s) at which the local value addition is made. Bidder should submit Self Certification under preference to "MAKE IN INDIA" Policy as **Annexure-VIII**.

In case of any false declaration, action shall be taken in line with the provisions of the PPP- MIII order.

In cases of procurement for a value excess of Rs. 10 crores, the 'Class-I local supplier/ Class-II local supplier' shall be required to provide a certificate from the statutory auditor or cost auditor of the company (in the case of companies) or from a practicing cost accountant or practicing chartered accountant (in respect of suppliers other than companies) giving the percentage of local content.

**17. Purchase preference to Micro and Small Enterprises (MSEs):**

Purchase preference will be given to MSEs as defined in Public Procurement Policy for Micro and Small Enterprises (MSEs) Order, 2012 dated 23.03.2012 issued by Ministry of Micro, Small and Medium Enterprises and its subsequent Orders/Notifications issued by concerned Ministry. If the bidder wants to avail the Purchase preference, the bidder must be the manufacturer of the offered product in case of bid for supply of goods. Traders are excluded from the purview of Public Procurement Policy for Micro and Small Enterprises.

**18. Insurance**

The Contractor shall take out and keep in force a policy or policies of insurance from the date, the delivery of material starts (including the transit portion) against all liabilities of the contractor or the Purchaser. The contractor shall take out and keep in-force a Policy or policies of Insurance for all materials covered in schedule of requirement irrespective of whether used up in the portion of work already done or kept for the use in the balance portion of the work until such material are provisionally handed over to RailTel. The contractor should ensure the stores brought to site, against risks as required under the Emergency Risk (Goods) Insurance Act in force from time to time up to contract value.

It may be noted that the beneficiary of the insurance policy should be RailTel or the policies should be pledged in favor of RailTel. The contractor shall keep the policy/policies current till the item/equipment are handed over to the purchaser.

**19. Power of Attorney:**

**Power of Attorney:** Power of attorney **duly notarized** in favor of the signatory duly authorizing

the signatory shall be submitted online before the due date and time of submission of the e-Tender. **Power of Attorney issued by the Company (backed by the resolution of Board of Directors) in favour of the individual to sign the tender.**

Original copy is needed to be submitted by the successful bidder as per the clause-15 above.

20. **Restrictions under Rule 144(xi) of GFR, 2017:**

Any bidder from a country which shares a land border with India will be eligible to bid in this procurement, if the bidder is registered with the competent authority only, as per GoI guidelines. Office Memorandum F.No.6/18/2019-PPD dated 23.07.2020 by Ministry of Finance, Department of Expenditure, Public Procurement Division shall also apply to this tender. **A certificate on their letterheads as per Annexure-IX shall be submitted by all the bidders regarding their compliance with this order**

If such certificate given by a bidder whose bid is accepted is found to be false, this would be a ground for immediate termination and further legal action in accordance with law. Registration should be valid at the time of submission of bids and at the time of acceptance of bids. In respect of supply otherwise than by tender, registration should be valid at the time of placement of order.

21 **Taxes & Duties:**

1. The price quoted in the offer should be firm, fixed indicating the breakup and inclusive of all taxes & duties like import, custom, Anti-Dumping, CGST, SGST, IGST, UTGST etc. The offer should be inclusive of packing, forwarding, freight up to destination, insurance charges.
2. Bidder shall issue valid tax invoice to RailTel for availing proper credit of CGST/SGST/IGST/UTGST in case of award of Contract. GST will not be reimbursed in the absence of valid tax invoice.
3. For all the taxable supplies made by the vendor, the vendor shall furnish all the details of such taxable supplies in the relevant returns to be filed under GST Act.
4. If the vendor fails to comply with any of the above, the vendor shall pay to purchaser any expense, interest, penalty as applicable under the GST Act.
5. In case of incorrect reporting of the supply made by the vendor in the relevant return, leading to disallowance of input credit to purchaser, the vendor shall be liable to pay applicable interest under the GST Act to the credit of purchaser. The same provisions shall be applicable in case of debit/credit notes.
6. Tenderer shall quote all-inclusive rates, but there shall be break up of basic price and all type of applicable taxes such as SGST/CGST/IGST/UT GST along with respective HSN/SAC Code under GST Law (Including tax under reverse charges payable by the recipient).
7. Wherever the law makes it statutory for the Purchaser to deduct any amount towards GST at sources, the same will be deducted and remitted to the concerned authority.
8. The imposition of any new tax and/or increase/ in the aforesaid taxes, duties levies, after the last stipulated date for the receipt of tender including extensions if any and the bidder there upon necessarily and properly pays such taxes/levies/cess, the bidder shall be reimbursed the amount so paid, provided such payments, if any, is not, in the opinion of RailTel attributable to

delay in execution of work within the control of bidder. The bidder shall, within a period of 30 days of the imposition of any such tax or levy or cess, give a written notice thereof to RailTel that the same is given pursuant to this condition, together with all necessary information including details of input credit relating thereto. In the event of non-payment/default in payment of any of the above taxes, RailTel reserves the right to with-hold the dues/payments of bidder and make payment to state/Central Government authorities as may be applicable. However, if the rates are reduced after the last stipulated date for receipt of tender, bidder has to pass on the benefits to RailTel.

22. **Other Particulars to be enclosed along with tender:**

Following details should also be enclosed along with the tender: -

- (i) Bidder (other than OEM) has to provide the MAF from OEM of Material as per SOR.
- (ii) The material as detailed in SORs of Switches, Firewall, Router, Access point, SFP offered by the bidder should have been satisfactorily working in any Govt. Organization, PSU or any TELCO or Public listed company as define under Note of clause 10.1 above for at least 12 months as on date of opening of tender in India or abroad. The certificates from actual user/s have to be submitted for this purpose along with the bid. Scanned copies of documents to be uploaded on Portal <https://gem.gov.in>.
- (iii) Performance statement of last three years for supply of same or similar items to Railways, BSNL, MTNL, Government PSU's & Telecom Service Providers. This Performance Statement is to be submitted in following format: -

Year	PO No & Date with description of item	Name of the purchaser	Qty. ordered	Date of delivery in the Purchase Order	Qty. Supplied within scheduled date of delivery	Qty. Supplied during 1st extension	Qty. Supplied during 2nd extension	Qty. Supplied during 3rd extension
1	2	3	4	5	6	7	8	9

They may be deprived of any order against this tender if the information furnished is found to be incorrect later on. Correct status/supply position of pending orders, if any, should be invariably indicated. Supporting documents are to be enclosed. Photocopies of the supply/purchase orders along with the Inspection Certificates and Receipt Notes should be enclosed for ready reference, along with tender to substantiate their past performance.

**Complete Tender document (ATC) duly signed & stamped on each page in token of acceptance should be submitted online.**

**Note:** The bidder is required to give acceptance of all the clauses of **GeM bid, ATC** and RailTel's Bid Specific **ATC** document. Any deviation / non-acceptance may lead to rejection of the bid.

- Information to Bidder viz. corrigendum /addendum/ amendments etc. for this bid shall be posted on [www.railtelindia.com](http://www.railtelindia.com) and GeM only.

- This bid is governed by the Specific Additional Terms & Conditions and General Terms & Conditions laid down by the GeM against **GeM Bid No. GEM/2026/B/7319622, Dt. 05.03.2026**
- After opening of the bid no correspondence/submission of document made at the initiative of the bidder will be entertained. However, the purchaser can, if required, ask for clarifications in writing which need to be submitted before a target date. The clarifications submitted as required by the purchaser before the target date will be considered.
- In case, if any contradiction between GeM Bid, Additional Terms & Conditions, RailTel's Bid Specific Additional Terms & Conditions and General Terms & Conditions, RailTel's Bid Specific Additional Terms & Conditions will prevail.

23. The guidelines and directives issued by Department of Telecommunication, Govt. of India regarding procurement of Telecommunication equipment from trusted sources shall be applicable to this tender. The offered equipment shall be "trusted Products".  
**If the OEM/Bidder's proposed product is not listed on the trusted portal, it must be made available during the Proof of Concept (POC) stage.**  
**If the OEM/Bidder fails to provide the required certificate during the Proof of Concept (POC) stage, the Bidder shall be disqualified during the technical evaluation process.**

**Note: Proof of Concept (POC) is applicable for Switch only(SOR-1).**

24. **Marking of Material Supplied:**

The tenderer may indicate the RailTel, Manufacture's Name, Month and Year of manufacturing, Serial numbers by casting/stamping/etching/embossing, at an appropriate place of each piece supplied, without affecting the functional utility and structural stability of the components/material.

**Contact Person for the GeM Bid (in case of any query):**

1. **Sh.Pooran Singh, AGM/Tender**  
Mobile No. 9007044140  
Email ID: pooransingh@railtelindia.com
2. **Sh. Sanjay Kumar, DGM/NOC**  
Mobile No.: 9007044162  
Email ID: sanjaykumar@railtelindia.com

**Note:**

**The offered Switches. Router and Wireless Access point shall comply with Ministry of Communications (Department of Telecommunications) Notification Dt. 21.10.2024**

**Annexure – I**

**1. All Equipments should be:**

- i. Equipped with necessary hardware/software to comply all above required/support features.
- ii. Back-to-Back warranty with respective OEMs for both Hardware and Software. The certificates/Undertaking for the same will have to be submitted along with bid from respective OEM. Hardware and Operating System for Network Devices should be from the same OEM. Disaggregated solution shall not be acceptable.
- iii. OEMs should have their spare depots in India and location & address for same need to be submitted.
- v. OEMs should have 24\*7 TAC support in India. Relevant document in support of the same shall be submitted.
- vi. UL, CE and FCC Certification is not required for PMA. However, they have to produce certificate from standard lab approved/ authorized by Govt. of India that their product are equivalent to UL, CE and FCC and meets all standard and specification of UL, CE and FCC.

**Schedule of Requirements (SOR):**

SOR Item No.	Item Description	UoM	Qty.	Minimum End Life (Yrs.)	Offered Make & Model by Bidder
1	10G Fiber Switch as per technical specification given in Annexure-A1. Warranty: 3 years	Nos.	216	8	
2	1G Access Switch (Non PoE) as per technical specification given in Annexure-A2. Warranty: 3 years	Nos.	126	8	
3	1G Access Switch (PoE) as per technical specification given in Annexure-A3. Warranty: 3 years	Nos.	226	8	
4	Firewall as per technical specification given in Annexure-A4. Warranty: 3 years	Nos.	2	8	
5	Router as per technical specification given in Annexure-A5. Warranty: 3 years	Nos.	20	5	
6	Outdoor Wi-Fi Access Point as per Technical Specification given in Annexure-A6. Warranty: 3 years	Nos.	199	5	
7	10G SFP+ UD, 10 KM as per technical specification given in Annexure-A7. Warranty: 3 years	Nos.	90	5	
8	1G UD SFP 20KM as per technical specification given in Annexure-A8. Warranty: 3 years	Nos.	160	5	
9	1G BiDi SFP 20KM as per technical specification given in Annexure-A9. Warranty: 3 years	Pair	160	5	
10	10G UD SFP+, 20KM as per technical specification given in Annexure-A10. Warranty: 3 years	Nos.	110	5	
11	10G BiDi SFP+, 20KM as per technical specification given in Annexure-A11. Warranty: 3 years	Pair	70	5	
12	10G SFP+ UD, 80 KM as per technical specification given in Annexure-A12. Warranty: 3 years	Nos.	25	5	
13	10G SFP+ BIDI, 40KM as per technical specification given in Annexure-A13. Warranty: 3 years	Pairs	160	5	
14	10G SFP+ BIDI 80KM as per technical specification given in Annexure-A14. Warranty: 3 years	Pairs	31	5	
15	25G SFP+ BIDI 40KM as per technical specification given in Annexure-A15. Warranty: 3 years	Pairs	30	5	
16	40G SFP+ UD 40KM as per technical specification given in Annexure- A16. Warranty: 3 years	Nos.	20	5	

17	1G Electrical SFP as per technical specification given in Annexure-A17. Warranty: 3 years	Nos.	40	5	
18	AC to DC converter as per technical specification given in Annexure-A18. Warranty: 3 years	Nos.	20	8	
19	DC to AC converter as per technical specification given in Annexure-A19. Warranty: 3 years	Nos.	20	8	
20	Single mode SC/PC - LC/PC patch Chord - 01 mtr. Length as per technical specification given in Annexure-A20. Warranty: 1 year	Nos.	100	NA	
21	Single mode SC/PC - LC/PC patch Chord - 03 mtr. Length as per technical specification given in Annexure- A20. Warranty: 1 year	Nos.	100	NA	
22	Single mode SC/PC - LC/PC patch Chord - 05 mtr. Length as per technical specification given in Annexure- A20. Warranty: 1 year	Nos.	300	NA	
23	Single mode SC/PC - LC/PC patch Chord - 10 mtr. Length as per technical specification given in Annexure- A20. Warranty: 1 year	Nos.	350	NA	
24	Single mode SC/PC - LC/PC patch Chord - 15 mtr. Length as per technical specification given in Annexure- A20. Warranty: 1 year	Nos.	150	NA	
25	Single mode SC/PC - LC/PC patch Chord – 20 mtr. Length as per technical specification given in Annexure- A20. Warranty: 1 year	Nos.	303	NA	
26	Single mode LC/PC - LC/PC patch Chord - 01 mtr. Length as per technical specification given in Annexure-A21. Warranty: 1 year	Nos.	550	NA	
27	Single mode LC/PC - LC/PC patch Chord - 02 mtr. Length as per technical specification given in Annexure-A21. Warranty: 1 year	Nos.	100	NA	
28	Single mode LC/PC - LC/PC patch Chord - 03 mtr. Length as per technical specification given in Annexure-A21. Warranty: 1 year	Nos.	500	NA	
29	Single mode LC/PC - LC/PC patch Chord - 05 mtr. Length as per technical specification given in Annexure-A21. Warranty: 1 year	Nos.	500	NA	
30	Single mode LC/PC - LC/PC patch Chord - 10 mtr. Length as per technical specification given in Annexure-A21. Warranty:	Nos.	646	NA	

	1 year				
31	Single mode LC/PC - LC/PC patch Chord - 15 mtr. Length as per technical specification given in Annexure-A21. Warranty: 1 year	Nos.	250	NA	
32	Single mode LC/PC - LC/PC patch Chord - 20 mtr. Length as per technical specification given in Annexure-A21. Warranty: 1 year	Nos.	500	NA	
33	Single mode LC/PC-FC/PC patch Chord 01 mtr. Length as per technical specification given in Annexure-A22. Warranty: 1 year	Nos.	100	NA	
34	Single mode LC/PC-FC/PC patch Chord 03 mtr. Length as per technical specification given in Annexure-A22. Warranty: 1 year	Nos.	100	NA	
35	Single mode LC/PC-FC/PC patch Chord 05 mtr. Length as per technical specification given in Annexure-A22. Warranty: 1 year	Nos.	100	NA	
36	Single mode LC/PC-FC/PC patch Chord 10 mtr. Length as per technical specification given in Annexure-A22. Warranty: 1 year	Nos.	380	NA	
37	Single mode LC/PC-FC/PC patch Chord 15 mtr. Length as per technical specification given in Annexure-A22. Warranty: 1 year	Nos.	176	NA	
38	Single mode LC/PC-FC/PC patch Chord 20 mtr. Length as per technical specification given in Annexure-A22. Warranty: 1 year	Nos.	370	NA	
39	Single mode SC/PC - FC/PC patch Chord 01 mtr. Length as per technical specification given in Annexure-A23. Warranty: 1 year	Nos.	50	NA	
40	Single mode SC/PC - FC/PC patch Chord 03 mtr. Length as per technical specification given in Annexure-A23. Warranty: 1 year	Nos.	150	NA	
41	Single mode SC/PC - FC/PC patch Chord 05 mtr. Length as per technical specification given in Annexure-A23. Warranty: 1 year	Nos.	150	NA	
42	Single mode SC/PC - FC/PC patch Chord - 10 mtr. Length as per technical specification given in Annexure-A23. Warranty: 1 year	Nos.	220	NA	

43	Single mode SC/PC - FC/PC patch Chord - 15 mtr. Length as per technical specification given in Annexure-A23. Warranty: 1 year	Nos.	220	NA	
44	Single mode SC/PC - FC/PC patch Chord - 20 mtr. Length as per technical specification given in Annexure-A23. Warranty: 1 year	Nos.	220	NA	
45	Single mode FC/PC - FC/PC-patch Chord 01 mtr. Length as per technical specification given in Annexure-A24. Warranty: 1 year	Nos.	50	NA	
46	Single mode FC/PC - FC/PC-patch Chord 03 mtr. Length as per technical specification given in Annexure-24. Warranty: 1 year	Nos.	100	NA	
47	Single mode FC/PC - FC/PC-patch Chord 05 mtr. Length as per technical specification given in Annexure-A24. Warranty: 1 year	Nos.	110	NA	
48	Single mode FC/PC - FC/PC-patch Chord 10 mtr. Length as per technical specification given in Annexure-A24. Warranty: 1 year	Nos.	296	NA	
49	Single mode FC/PC - FC/PC-patch Chord 20 mtr. Length as per technical specification given in Annexure-A24. Warranty: 1 year	Nos.	200	NA	
50	Single mode SC/PC - SC/PC patch Chord - 01 mtr. Length as per technical specification given in Annexure-25. Warranty: 1 year	Nos.	100	NA	
51	Single mode SC/PC - SC/PC patch Chord - 03 mtr. Length as per technical specification given in Annexure-A25. Warranty: 1 year	Nos.	150	NA	
52	Single mode SC/PC - SC/PC patch Chord - 05 mtr. Length as per technical specification given in Annexure-A25. Warranty: 1 year	Nos.	150	NA	
53	Single mode SC/PC - SC/PC patch Chord - 10 mtr. Length as per technical specification given in Annexure-A25. Warranty: 1 year	Nos.	270	NA	
54	Single mode SC/PC - SC/PC patch Chord - 15 mtr. Length as per technical specification given in Annexure-A25. Warranty: 1 year	Nos.	110	NA	
55	Single mode SC/PC - SC/PC patch Chord - 20 mtr. Length as per technical specification given in Annexure-A25. Warranty: 1 year	Nos.	100	NA	

56	LCPC Plugin Attenuator - 1dB as per technical specification given in Annexure-A26. Warranty: 1 year	Nos.	220	NA	
57	LCPC Plugin Attenuator - 3dB as per technical specification given in Annexure-A26. Warranty: 1 year.	Nos.	330	NA	
58	LCPC Plugin Attenuator - 5dB as per technical specification given in Annexure-A26. Warranty: 1 year	Nos.	277	NA	
59	LCPC Plugin Attenuator - 6dB as per technical specification given in Annexure-A26. Warranty: 1 year	Nos.	100	NA	
60	LCPC Plugin Attenuator - 8dB as per technical specification given in Annexure-A26. Warranty: 1 year	Nos.	100	NA	
61	LCPC Plugin Attenuator - 9dB as per technical specification given in Annexure-A26. Warranty: 1 year	Nos.	100	NA	
62	LCPC Plugin Attenuator - 10dB as per technical specification given in Annexure-A26. Warranty: 1 year	Nos.	350	NA	
63	LCPC Plugin Attenuator - 13dB as per technical specification given in Annexure-A26. Warranty: 1 year	Nos.	100	NA	
64	LC - LC Adaptor as per technical specification given in Annexure-A27. Warranty: 1 year	Nos.	140	NA	
65	FC/PC Attenuator - 3dB as per technical specification given in Annexure-A28. Warranty: 1 year	Nos.	150	NA	
66	FC/PC Attenuator - 5dB as per technical specification given in Annexure-A28. Warranty: 1 year	Nos.	200	NA	
67	FC/PC Attenuator - 10dB as per technical specification given in Annexure-A28. Warranty: 1 year	Nos.	120	NA	
68	FC/PC Adaptor as per technical specification given in Annexure-A29. Warranty: 1 year	Nos.	180	NA	
69	SC/PC Attenuator - 3dB as per technical specification given in Annexure-A30. Warranty: 1 year	Nos.	100	NA	
70	SC/PC Attenuator - 5dB as per technical specification given in Annexure-A30. Warranty: 1 year	Nos.	100	NA	
71	SC/PC Attenuator - 10dB as per technical specification given in Annexure-A30. Warranty: 1 year	Nos.	220	NA	
72	SC/PC – SCPC Adaptor as per technical specification given in Annexure-A31. Warranty: 1 year	Nos.	180	NA	

**Notes**

Switch and SFP should be compatible to each other.
OEM should have their own repair/replacement/RMA & support centre in India
The OEM/Product should be RoHS or equivalent certified.
The OEM/Product should be CE or equivalent certified.
The guidelines and directives issued by Department of Telecommunication, Govt. of India regarding procurement of Telecommunication equipment from trusted sources shall be applicable to this tender. The offered Switch shall be "Trusted Products".

## **Technical Specifications**

### **SOR-1: 10G Fiber Switch**

### **Annexure-A1**

#### **1. Size**

- 1.1 Switch shall be with Rack Mountable clamps for standard 19-inch rack mountable.
- 1.2 1U height.

#### **2. Interfaces**

- 2.1 The switch should have minimum of ports: 16 Nos. 1G SFP ports, 8 Nos. Combo 10/100/ 1000 Base-T/SFP ports and 4 \*10G Nos. SFP+.

#### **3. Console**

- 3.1 The switch should support RJ-45/USB console port and industry standard CLI.

#### **4. Management Port**

- 4.1 The switch should support RJ-45 management port.

#### **5. Port Standards & Functions**

- 5.1 RJ45 Speed: (IEEE 802.3u 100BASE-TX / IEEE 802.3ab 1000BASE-T) copper interfaces
- 5.2 It shall support for Automatic Negotiation of link speed and duplex to help minimize the configuration & errors.
- 5.3 1G fiber interface SFP ports support:
  - 5.3.1 IEEE 802.3z (1000BASE-SX/LX/LHX/ZX) transceivers.
- 5.4 1G/10G fiber interface SFP+ ports support:
  - 5.4.1 IEEE 802.3ae changeable (10GBASE-SR/LR/ZR/ER).
  - 5.4.2 IEEE 802.3z (1000BASE-SX/LX/LHX/ZX) transceivers.
- 5.5 IEEE 802.3x Flow Control for full-duplex mode, auto-negotiation.
- 5.6 Auto or configurable MDI/MDIX.

#### **6. Performance**

- 6.1 Switching Capacity: Should have at least 128 Gbps full duplex line rate traffic.
- 6.2 Packet Forwarding Method: Store and forward.
- 6.3 Packet Forwarding Rate: 95 Mbps or Higher
- 6.4 Flash Memory : 256 MB or Higher
- 6.5 DRAM:512MBorHigher
- 6.6 The Switch shall support minimum 16K MAC address.
- 6.7 Jumbo Frames: 9K or Higher.
- 6.8 The Switch shall support 1024 static MAC address entries.
- 6.9 Redundancy Feature: Uplink Protection Protocol, Smart Link / Monitor Link

**7. L2 Features**

- 7.1 DDM
  - 7.1.1 Digital Diagnostic Monitoring (DDM) on 1G SFP and 10G SFP+ port Transceiver- threshold current/rx-power/temperature/tx-power/voltage/ high-low alarm and warning
  - 7.1.2 DDM threshold of Tx and Rx should be shown in dBm.
  - 7.1.3 DDM threshold shows data as per SFP wise
  - 7.1.4 In DDM data must show: Ethernet standard, Kilometer, Wavelength, Mode, Vendor, Serial Number, Date, Version
- 7.2 Broadcast/Multicast/ Unknown Unicast Storm Control.
  - 7.2.1 The LAN switch shall have per-port broadcast, multicast, and unicast storm control.
- 7.3 Spanning Tree Protocol:
  - 7.3.1 IEEE 802.1D Spanning Tree Protocol (STP)
  - 7.3.2 IEEE 802.1w Rapid Spanning Tree Protocol (RSTP)
  - 7.3.3 IEEE 802.1s Multiple Spanning Tree Protocol (MSTP), 16 instances
  - 7.3.4 It shall support BPDU filtering feature, to shut down Spanning Tree Protocol Port Fast enabled interfaces when BPDUs are received to avoid accidental topology loops.
  - 7.3.5 It shall support Spanning-Tree Root Guard (STRG) to prevent edge devices not in the network administrator's control from becoming Spanning Tree Protocol root nodes OR alternate solution.
  - 7.3.6 Loopback Detection (LED) or any other industry equivalent protocol.
- 7.4 Non-Spanning Tree Loopback detection.
- 7.5 ITU-T G.8032 Ethernet Ring Protection Switching:
  - 7.5.1 It should support Ethernet Ring Protection Switching for main ring and sub rings: G.8032 ERPS Ring Protection Switching provides loop avoidance with redundancy in Layer-2 Ethernet networks using concept of RPL (Ring Protection Link). The switch completion time (transfer time) for a failure on a ring link shall be less than 50ms.
  - 7.5.2 Should support Multiple instance.
  - 7.5.3 RSTP & ERPS should run simultaneously in the switch.
- 7.6 Link Aggregation:
  - 7.6.1 It shall support Link Aggregation Protocol (LACP) as per IEEE 802.3 ad and minimum 8 groups per device/8 ports per group.
  - 7.6.2 Compliant with 802.1AX and 802.3ad
- 7.7 Port Mirroring:
  - 7.7.1 It should supports one-to-one, many-to-one.
- 7.8 L2PT
  - 7.8.1 It should support L2 Protocol Tunneling for STP and LACP.

**8. L2 Multicasting**

- 8.1 IGMP Snooping:
  - 8.1.1 IGMP v1/v2 N31
  - 8.1.2 Supports 1024 groups
  - 8.1.3 Port/Host-based IGMP Snooping Fast Leave
  - 8.1.4 Report suppression
  - 8.1.5 IGMP authentication
  - 8.1.6 Limited IP Multicast (IGMP filtering)
- 8.2 MLD Snooping:

- 8.2.1 MLD v1, MLD v21
- 8.2.2 Supports 1024 groups
- 8.2.3 Port/Host-based MLD Snooping Fast Leave

## **9. VLAN**

- 9.1 VLANs
  - 9.1.1 Should Supports 4K VLAN.
  - 9.1.2 Port-based VLAN
  - 9.1.3 MAC-based VLAN
  - 9.1.4 GVRP (255 dynamic VLANs)
  - 9.1.5 IEEE 802.1v Protocol-based VLAN
  - 9.1.6 802.1Q tagged VLAN
  - 9.1.7 Hybrid Mode. Tagged VLAN along with Native VLAN.
- 9.2 Q-in-Q
  - 9.2.1 Port-based Q-in-Q
  - 9.2.2 VLAN translation

## **10. Quality of Service (QoS)**

- 10.1 There shall be 8 hardware-based queues per port for flexible QoS management.
- 10.2 The switch should support CoS based on Switch port, 802.1p priority queues, VLAN ID, MAC addresses, IPv4/IPv6 addresses, DSCP, ToS, Protocol type, TCP/UDP ports, IPv6 traffic class.
- 10.3 It shall have supports L2/L3/L4 QoS/Cos solutions help ensure that critical network services such as VoIP, ERP, Intranet, and video conferencing are served with proper priority.
- 10.4 Bandwidth control:
  - 10.4.1 Port-based (ingress, min. granularity 64 Kbps)
  - 10.4.2 Flow-based (ingress, min. granularity 64 Kbps)
  - 10.4.3 Egress queue bandwidth control (min. granularity 64 Kbps)
- 10.5 Queue Handling:
  - 10.5.1 Support Strict Priority Queue (SPQ), Weighted Round Robin (WRR) queue scheduling
  - 10.5.2 SPQ + WRR

## **11. Access Control List (ACL)**

- 11.1 IP Standard ACL
- 11.2 MAC extend ACL
- 11.3 IP extend ACL

## **12. Authentication, Authorization, and Accounting (AAA)**

- 12.1 Should support Radius authentication, accounting.
- 12.2 TACACS +authentication, accounting, authorization
- 12.3 Should support minimum three-level user account. (read-only, Operation, read & write)
- 12.4 Radius should work on CLI, GUI, Console

**13. Security**

- 13.1 SSH (v1 .0/1.5/v2.0) for security Telnet
- 13.2 SSL for HITPS
- 13.3 Port Security
- 13.4 Broadcast/multicast/unicaststorm control.
  - 13.4.1 After broadcast packet threshold cross port should block for 60 sec
  - 13.4.2 Auto resume, manual unblock.
  - 13.4.3 It shall support unknown unicast and multicast port blocking to allow tight control by filtering packets that the switch has not already learned how to forward.
  - 13.4.4 It shall support unicast MAC filtering to prevent the forwarding of any type of packet with a matching MAC address.
- 13.5 IP-MAC-Port Binding (IMPB)
  - 13.5.1 ARP inspection
  - 13.5.2 IP inspection
  - 13.5.3 DHCP snooping
  - 13.5.4 DHCPv6 snooping
- 13.6 DHCP server screening
- 13.7 DHCP client filtering
- 13.8 ARP spoofing prevention
- 13.9 BPDU attack protection
- 13.10 DoS attack prevention
- 13.11 Port isolation

**14. IPv6**

- 14.1 Manual configuration
- 14.2 Remote IPv6 ping
- 14.3 IPv6 Telnet support
- 14.4 HTTP over IPv6
- 14.5 SNMP over IPv6
- 14.6 IPv6 Syslog support
- 14.7 IPv6 TFTP support

**15. Operations, Administration, and Management (OAM)**

- 15.1 It should support IEEE 802.lag Ethernet OAM: Connectivity Fault Management (Support 32 MEPs).
- 15.2 It should support Ethernet OAM compliant with IEEE 802.3ah/Y. 1731.
- 15.3 It shall support Optical Transceiver Digital Diagnostic Monitoring and support 802.3ah link layer remote loopback and discovery
- 15.4 Dying Gasp

**16. Management**

- 16.1 Switch Management:
  - 16.1.1 CLI via console port or Telnet.
  - 16.1.2 Web management
  - 16.1.3 Switch support SNMP v1, v2c, v3 with latest MIBs (Management Information Base) and their object identifiers (OIDs) for monitoring and management, including access levels and any custom MIBs for NMS configuration and its accessibility.

- 16.2 Firmware & Configuration:
  - 16.2.1 Firmware upgrade via TFTP/HTTP/FTP server
  - 16.2.2 Dual images
  - 16.2.3 Configuration file upload/download via TFTP/HTTP/FTP server
  - 16.2.4 Firmware auto upgrade
- 16.3 Scheduled Reboot features
- 16.4 Port last uptime
- 16.5 Syslog
- 16.6 It shall support Simple Network Time Protocol & Network Timing Protocol (SNTP & NTP) to provide an accurate and consistent time stamp to all intranet switches. IPv4/ IPv6
- 16.7 Support LLDP (802.1ab) IPv4/ IPv6
- 16.8 Command logging
- 16.9 Switch should support CPU monitoring, Memory monitoring.
- 16.10 Switch should support password recovery and password encryption.
- 16.11 Switch should support system log, traceroute, PING Size up to 9000 bytes or more.
- 16.12 Should support Optical Transceiver Digital Diagnostic Monitoring for All optical ports.
- 16.13 Switch should support following SNMP traps or syslog
  - 16.13.1 Interface UP & Down
  - 16.13.2 Optical power SFP threshold alarms
  - 16.13.3 STP Topology Changes and New root bridge
  - 16.13.4 LLDP table changes
  - 16.13.5 Command logging. Switch must show which user run which command in system log
  - 16.13.6 ERPS State Change

## **17. Physical/Environmental**

- 17.1 MTBF: 1,00,000 hours or Higher
- 17.2 Noise@25°C(dBA): <55db
- 17.3 Fan Module: 2
- 17.4 Should have AC power supply arrangement as given below in chassis without any external adaptors with redundant power supply (RPS):
  - 17.4.1 AC power supply 100 to 240 V AC with 50 to 60 Hz
  - 17.4.2 DC Power Input (-48~-60 V). DC power supply should work as a redundant power supply to power on the switch in case failure of AC power supply.
- 17.5 Switch should support Surge Protection on power input and on Ethernet ports as per EN61000-4-5 standard and as per requirement at Indian Railway Station.
- 17.6 Minimum Operating Temperature 0 to 50 degree.
- 17.7 Environmental Regulation Compliance: WEEE/RoHS

## **18. Certification**

- 18.1 Switch should have EMC Compliance as per FCC Class A / CE standards
- 18.2 It should have Safety Compliance: CB & Safety Compliance: UL
- 18.3 Proposed product should be MTCTE Certified.
- 18.4 The OEM must be ISO 9000, 14001, 27001, certified to ensure stability and having strong Product, Support and Service. All documentation is to be attached with bid.
- 18.5 Product Should be Approved from TEC under Mandatory Testing and Certification of Telecom Equipment as notified vide Indian Telegraph (Amendment) Rules, 2017 and OEM/Product must be on Trusted Telecom Portal (TIP). **Trusted Product Certificate should be submitted before delivery.**
- 18.6 OEM Warranty (Year) - 3 years minimum.

**SOR-2: 1G Access Switch (Non-PoE)****Annexure-A2**

Srl. No.	Description	Compliance (Y/N)
1	<b>8*10/100/1000 Mbps RJ 45 ports +2*10/100/1000 Mbps Combo ports , LED Based, SFP ports of the switch should be populated with same OEM make one pair of 1G BIDI 20KM SFP</b>	
2	<p>At least 20 Gbps Switching Fabric/Non-Blocking • Fragment-Free Switching</p> <ul style="list-style-type: none"> <li>• Auto MDI/MDIX crossover for all ports</li> <li>• Secure store-and-forward switching scheme</li> <li>• Full/half-duplex for Ethernet/Fast Ethernet speeds</li> <li>• IEEE 802.3x Flow Control</li> <li>• Supports 9,216 bytes Jumbo Frames</li> <li>• Supports IEEE 802.1p QoS (4 Queues, Strict Mode), Port mirroring.</li> </ul>	
3	Port for 802.3x flow control. IEEE 802.3x: Pause Frames/Flow Control.	
4	802.ID spanning tree control/STP/RSTPSupPort, spanning-tree Port Fast guard for fast convergence or similar, IEEE 802.1s: Multiple Spanning Tree Protocol (MSTP). Uplink Protection Protocol & Smart Link/Monitor Link	
5	<p>Management features like Web-based GUI, SNMP V2,V3, TFTP Client, VRRP, Radius Authentication, WebAgent, System Log, DHCP/BootP Client. Dual Images and Optical Transceiver Digital Diagnostic Monitoring including threshold TX RX. Radius and TRTacacs+ authentication. •</p> <ul style="list-style-type: none"> <li>• Web-based GUI (supports 1Pv4/v6)</li> <li>• Command Line Interface (CLI)</li> <li>• Telnet server/client</li> <li>• TFTP client</li> <li>• FTP client (supports 1Pv4)</li> <li>• Command logging</li> <li>• SNMP v1/v2c/v3 (supports 1Pv4)</li> <li>• SNMPTraps</li> <li>• System log</li> <li>• SMTP (supports 1Pv4)</li> <li>•RMONv1:</li> <li>• Supports 1, 2, 3, 9 groups</li> <li>•RMONv2:</li> <li>• Supports Probe Con.fig group</li> <li>• 802.1AB LLDP</li> <li>-LLDP-MED</li> </ul>	

	<ul style="list-style-type: none"> <li>• BootP/DHCP client (supports IPv4)</li> <li>• DNS client</li> <li>• DHCP auto-configuration</li> <li>- Supports Option 6, 66, 67, and 150</li> <li>• DHCP auto-in-lage</li> <li>• DHCP relay</li> <li>• DHCP relay Option 60, 61, and 82</li> <li>• DHCP client Option 12</li> <li>• PPPoE circuit-ID tag insertion</li> <li>• Multiple image</li> <li>• Flash file system</li> <li>• CPU monitoring</li> <li>• Memory monitoring</li> <li>• SNTP (supports IPv4)</li> <li>• Debug command</li> <li>• Password recovery.</li> <li>• Software / Hardware Watchdog</li> <li>• QinQ (802.1ad)</li> <li>• Password encryption</li> <li>• Ping</li> <li>• Traceroute</li> <li>• IPv4)</li> <li>• Zero Touch Provisioning (ZTP)</li> <li>• Flow</li> <li>• (DNA)</li> <li>• PD Alive</li> <li>• Protocol (DDP)</li> </ul>	
6	802.1Q VLAN, 802.1p Priority queues. Port trunking of all Ports. Voice VLAN, VLAN 1 must be removable. Port NLAN based statistics. Management VLAN and Native VLAN. LLDP or similar functionality on any VLAN. GVRP IEEE 802.1Q-compliant facilitating automatic (dynamic) VLAN membership configuration	
7	IEEE 802.3ad: Link Aggregation Control Protocol (LACP), Link Aggregation • 802.3ad (LACP) supPort : - Number of LAGs supPort ed: 50 - Maximum number of Port s per LAG: 4 • Tagged Port s supPort in LAG • Uplink failure detection.	
8	Identification and filtering of L2/L3/L4 based ACL	
9	Console Port , Telnet , SSH, based managements.	
10	IEEE 802.1ad Q-in-Q tunneling, DHCP snooping, DHCP Option 82	
11	at least 8000 entries in the MAC table. • MAC limiting , Allowed MAC addresses-configurable per Port .	
12	IGMP Snooping, IGMP v1/v2/v3 awareness Snooping, Supports 64 Groups & IGMP Snooping Querier Multicastingl.	
14	security features like SSL (HTTPS), Broadcast/Multicast/ Unicast Storm Control, DoS Attack Prevention. Port isolation, Port security, IP+MAC+Port binding.	

15	Quality Of Service (QoS) like Priority Queue, Class of Service (CoS), Rate Limiting (Bandwidth Control), Strict Priority Queue (SPQ), Weighted Round Robin (WRR).	
16	IPV4 + IPv6 dual stack configuration . Static routing, • Maximum number of IPv4 unicast routes in hardware: 250 prefixes, Maximum number of ARP entries: 1,000	
17	Rack mountable clams for standard 19/42U Rack inch Rack for each item.	
18	Operating Temperature of the be min -0 to 50 °C (23 to 113 °f).	
19	Storage Temperature of the be min -40 to 70 °C (14 to 158 °f).	
20	AC Power Supply 100 to 240 V AC with 50 to 60 Hz and equipped with 3 pin plug OR DC Power supply -48V + 10% variation,	
21	Surge Protection to± 2 kV (line-earth) and± 1 kW, (line-line) on Power input and Surge Protection to± 2kV on Ethernet Port s.	
22	"OEM be having valid ISO 9000 & ISO 14000 certification on the date of opening of bid" OR" OEM famred in latest Gartner RePort infield of Ethernet Switches".	
23	EMICERTIFICATE of FCC/IC/ CE.	
24	SAFETY CERTIFICATE of UL	
25	Operations, Administration, and Management (OAM) • Cable diagnostics • 802.3ah Ethernet Link OAM • Dying Gasp • 802.1ag Connectivity fault Management (CfM) Y.1731 OAM	

**SOR-3: IG Access Switch (PoE)****Annexure-A3**

SN	Specification	Compliance (Y/N)	Remarks
1	Switch should support 8 10/100/1000 Base-T PoE and 2 SFP ports, Fanless design.		
2	Switch Should Support Min. 20 Gbps Switching Capacity and Maximum 64 Byte Packet Forwarding Rate is 14.88 MPPS.		
3	Switch Should Support IEEE 802.3af & at compliance (for PoE ports) and 130 W Power Budget.		
4	Switch should support 6KV Surge Protection on all Ethernet Port		
5	Switch should support IGMP Snooping v1, v2 and MID snooping vVv2, Multicast group policy and multicast number limit		
6	Switch shall support IEEE 802.IAB Link Layer Discovery Protocol (LLDP) or LLDP-MED		
7	Switch Should Support 4K VLAN ID's, Min 256 static VLAN,Q-in-Q VLAN, Private VLAN and Voice & Video VLAN.		
8	Switch should support Port Mirroring One to one/Many to One.		
9	Switch should support Quality of Service (QoS), Traffic Policing and Traffic Shaping, 802.Ip, WRED, Strict, Weighted Round Robin (WRR)/ Shaped Round Robin (SRR) scheduling.		
10	Switch should support Access Control List (ACL), Port Base, MAC Base, IP Based, L2 & L3 ACL (IPv4 and IPv6)		
11	Switch Should Support Security Features like Broadcast/Multicast/Unicast Storm Control, Traffic segmentation, TLS, DoS attack prevention, 802.IX Port based Access Control, Port Security, ARP Spoofing Prevention, DHCP Server Screening, IP-MAC-Port Binding, ARP Inspection, DHCP Snooping, 802.IX Authentication local/RADIUS database (IPv4 & IPv6), port-based access control.		
12	Switch Should Support features IPv4 & IPv6 Inspection, SSH v2 feature, Flow Control governed by IEEE 802.3x.		
13	Switch Should Support features IPv4/IPv6 Dual Stack, Static routes, RIP, OSPF Protocols		
14	Switch Should Support SNMP vVv2c/v3, Support RMONv1/v2, SSH2.0		
15	Operating temperature/ Humidity: 0°C to 50°C, 10%-90% non-condensation.		
16	The switch should work on 100-240V AC, 50Hz power supply.		
17	Switch Should Support features Ring Protection 802.ID (STP), 802.IW (RSTP), 802.IS (MSTP), ERPS, BPDU protection, root protection and loop protection		

18	Switch Should Support Management thru console Port, Web-based and CLI.		
19	Switch should have EMI CERTIFICATE as per EN/FCC/IC/CE		
20	Switch should have SAFETY CERTIFICATE as per <i>UIJ</i> IEC/EN 60950.		
21	OEM Should be International certification for the Information Security Management System: ISO 27001, ISO 9001 Quality Management System, ISO 14001 Environmental Management System		
	Note:- In the specification wherever support for a feature has been asked for, it will mean that the feature should be available without RailTel requiring any other hardware/software/licenses. Thus, all hardware/software/licenses required for enabling the support/feature shall be included in the offer.		

**SOR-4: Firewall****Annexure-A4**

Specification	Compliance (Yes/No.)
64 bit dual-core process with specialized gigabit ASIC switching chip and FPGA components, with enables the whole hardware platform to nm on the high-speed Ethernet frame. Super processing capability, providing a guarantee for upper-layer software functions.	
<b>High Expandability</b>	
Must built on the basis of switching core, can expand their external interfaces without any limitation from the total dual CPU resources. The switching chip must guarantees that the firewall must provided with sufficient and broadband internal channels.	
<b>Excellent Power-saving ability</b>	
Must adopts the new generation hardware chip inconsideration of energy saving while guaranteeing its strong processing capacity. Compared with the mainstream devices in the industry, power consumption of the firewall reduced by15% to 20%, which both reduces the device maintenance cost and accords with the low-carbon idea. Must equipped with friendly maglev mute fan.	
<b>Various Protocol Support</b>	
Must supports Layer 2 link protocols including PPP and dot1q; static routing; policy routing; and dynamic routing such as RIP, OSPF and BGP. Routing protocol must compatible with the devices manufactured by the mainstream vendors in the industry. Must Support integration of multiple services such as routing, switching, voice, safety and wireless, with requirement of complicated network construction.	
<b>New Service</b>	
Must supports the MPLS characteristics and the MPLS-based layer 2/ layer-3 VPN technology, which realize the transparent Ethernet transmission service and the flexible enterprise interconnection. supports IPv6 data forwarding, Routing protocols and multicast routing protocols, also supports the IPv4/IPv6 protocol stack and the interconnection technology, which makes the existing networks smoothly upgrade to IPV6.	
<b>Secure Service Access</b>	
Supports selective ACL firewall filtration technology, NAT, VPNs such as IPSec/L2TP/IPsec/GRE, and security technologies such as AAA, Radius, PAP/CHAP.	
supports its self-developed traffic control and service management policy (GBSC) which can better real-time arrange and monitor your data traffic.	
in managing and monitoring the network by using the in-band and out-band management tools such as Console, Telnet, SSH and SNMP;	
<b>Complete Layer-2 Switching Capacity</b>	
Layer 2 switching with the built-in high performance switching chip. It supports layer-2 protocols including STP/RSTP/MSTP, MAC learning and filter, anti-attack based on the chip, storm control and port mirroring.	
<b>Interface</b>	
Console	1
USB2.0	1
WAN	2xGE-TX & 2xGE Combo (TX/SFP)
LAN	8xGE-TX
POE	1

SLOT	<i>I</i>	
RST	1	
Encryption Engine	Built-in	
Performance		
Throughput	2MPPS	
Flash	32MB	
DRAM	1GB	
NAT Concurrent Sessions	<300K	
Consumption :No Load/Full Load	s26W	
Total output BTU (note:3000 BTU/hr=293W)	105.09	
FAN	1	
Noise@25°C (dBA)	22	
Power Supply	100--240VAC	
Software Feature		
LAN	ARP, ARP proxy, Gratuitous ARP	
WAN	PPP, PPPoE (Client/Server)	
Routing	Static route, default route	
	RIPv1/v2, OSPFv2, BGPv4	
	Fast Switch, LOBd-Balance	
	PBR (Policy BaSRd Routing)	
Multicast	IGMP, PIM-DM, PIM-SM	
IPv6	IPv6ND, IPv6 PMTIJ, IPv6 FIB, IPv6 ACL, 1Pv6 (Authenticate through IPv6 Phasell)	
	IPv6QoS	
	IPv6 transition: NAT-PT, IPv6 tunnel, 4over6	
	IPv6 tunnel: IPSec v6, GRE, 6tD4,	
	ISATAP	
	IPv6 route: IPv6 static route, RIPng, OSPFv3, BGP4+	
MPLS	VPLS, MP-BGP, VRF	
	L2VPN, L3VPN	
IP Service	ICMP, TCP, UDP, IP OptiDn	
	NAT, PAT, Port-MAP, Private- Service, ALG	
	Ping, Trace Route, Nslookup	
	IP ACL, IMP filter, Fast-Access	
	DHCP Client/Serv/Relay	
	DNS, DNS host, DNS Proxy, DDNS (Peanut <u>Huh/DvnDNS/CTC</u> )	
	Helper-Address, UDP Helper	

	IP unnumber, DDR	
	Keep alive, PDP (compatible with CISCO)	
	NetFlow, IP Accounting, IP SLA	
	TFTP Client/Serv, FTP Client	
	SNTP/NTP, job/schedule	
	PNP	
	ALIAS	
	Reverse telnet, VTY binding	
Switching	802.lp CaS, 802.IQ VLAN	
	STP,RSTP	
	Keep alive, port mirror, broadcast/ multicast stDrm	
	Control	
	PTP, IEEE1588v2 (Optional)	
Network Safety	AAA (Authentication, Authorization, Accounting)	
	enable, local, Radius, Tacacs+	
	PAP, CHAP, MS-CHAP	
Network Security/Firewall/VPN	ACL,NAT	
	ASPF state detection	
	SYN flood, UDP flood or ICMP flood	
	ARP attack protection, ARP-SCAN and DHCP-Snooping	
	Prevention of Ping of Death, Tear-drop, Land-Based,	
	WinNuke, PingSweep, ARP attack and IP-Spoofing	
	IKE, IPSec, DMVPN, EZVPN	
	L2TP,PPTP, GRE, EoGRE	
	VPN Stacking	
Reliability : Backup Function/BFD	Interface backup	
	Route backup	
	E-Backup, Keep alive Ethernet remote monitoring	
	VRRP,HSRP	
	Bandwidth based load sharing and backup Traffic based load balancing and backup	
	BFD for RIP, OSPF, BGP, MPLS And VRRP	
QOS : i) Congestion management/Congestion avoidance/Traffic shaping/Others, ii) Traffic classification	ACL	
	IP Precedence	
	DSCP	
	MAC	

	802.lp	
Management	Console, Telnet, SSH, HTTP/HITPS, SSL	
	SNMP V1N2N3, SYSLOG, RMON,ZTP	
Chassis : Dimensions mm(W x D x H)/Weight(kg, empty)	300x200x44	
	21	
Package : Dimensions mm (WxDxH)/Weight (kg, empty)	400x400x80	
	3.1	
Operating : Temperature/ Humidity	-10°C"50°C	
	10%"85% (non-condensing)	
Storage: Temperature/ Humidity	-40°C'85°C	

**SOR-5: Router****Annexure-A5**

<b>Router (300 Mbps Throughput)</b>			
<b>Technical Specification</b>		<b>Compliance Yes/No</b>	<b>Remarks</b>
Console	1		
USB2.0	1		
WAN	Minimum 2 X 1G (Optical & Electrical)		
LAN	8 Ports (Minimum 4 X 1G Optical & 4 X 1G Electrical) or 8 Electrical Port ( Base 10/100/1000 Mbps)		
RST	1		
Encryption Engine	Built-in		
Throughput	>= 2.5 MPPS or Equivalent GBPS		
Flash	32MB to 2GB or above		
DRAM	512 to 1GB or above		
NAT Concurrent Sessions	>= 64K or above		
Full Load	15W to 32W		
Power Supply	100-240VAC		
LAN	ARP, ARP proxy, Gratuitous ARP		
WAN	PPP, PPPoE (Client/Server)		
Routing	Static route, default route		
	RIPv1/v2, OSPFv2, BGPv4JS-IS		
	Fast Switch, Load-Balance		
	PBR (Policy Based Routing)		
Multicast	IGMP V1, V2, V3		
	PIM-DM, PIM-SM		
IPv6	IPv6 ND, IPv6PMTU, IPv6 FIB, IPv6 ACL, IPv6 (authenticate through IPv6 Phasell)		
	IPv6QoS		
	IPv6 transition: NAT-PT, IPv6 tunnel, 4over6		
	IPv6 tunnel: IPSec v6, GRE, 6to4,		
	ISATAP		
MPLS	IPv6 route: IPv6 static route, RIPng, OSPFv3, BGP4+		
	VPLS, MP-BGP, VRF		
IP Service	L2VPN, L3VPN		
	ICMP, TCP, UDP, IP Option		
	NAT, PAT, Port-MAP, Private- Service, ALG		
	Ping, Trace Route, Nslookup		
	IP ACL, IMP filter, Fast-Access		
	DHCP Client/Serv/Relay		
	DNS, DNS host, DNS Proxy, DDNS (Peanut Hull/DynDNS/CTC)		
Helper-Address, UDP Helper			

	IP unnumber, DDR		
	Keepalive, PDP (compatible with CISCO)		
	NetFlow, IP Accounting, IP SLA or RPM Prob		
	TFTP Client/Serv, FTP Client		
	SNTP/NTP, job/schedule		
	PNP		
	ALIAS		
Switching	Reverse telnet, VTY binding		
	802.Ip Cos, 802.IQ VLAN		
	STP, RSTP		
	Keepalive, port mirror, broadcast/ multicast storm control		
Network Safety	PTP, IEEE1588v2 (Optional)		
	Authentication, Authorization, Accounting		
	enable, local, Radius, Tacacs+		
Network Security	PAP, CHAP, MS-CHAP		
	ACL, NAT		
	ASPF state detection		
	SYN flood, UDP flood or ICMP flood		
	ARP attack protection, ARP-SCAN and DHCP-Snooping		
	Prevention of Ping of Death, Tear-drop, Land-Based, WinNuke, PingSweep, ARP attack and IP-Spoofing		
	IKE, IPsec, DMVPN, EZVPN		
	L2TP, PPTP, GRE, EoGRE		
Reliability	VPN Stacking		
	Interface backup		
	Route backup		
	E-Backup, Keep alive Ethernet remote monitoring		
	VRRP, HSRP		
	Bandwidth based load sharing and backup		
	Traffic based load balancing and backup		
QOS	BFD for RIP, OSPF, BGP, MPLS and VRRP		
	FIFO, PQ, CQ, WFQ, CBWFQ		
	WRED/RED		
	GTS (Generic Traffic Shaping)		
	GBSC, Layer7 filter		
	ACL		
	IP Precedence		
	DSCP		
Management	MAC		
	802.Ip		
Dimensions mm	Console, Telnet, SSH, HTTP/HTTPS, SSL		
	SNMP V1/V2/V3, SYSLOG, RMON, ZTP		

(WxDxH)			
Weight (kg,empty)	2.1		
Operating Temperature	10°C-40°C		
Operating Humidity	10%-85% (non-eondensing)		
Storage Temperature	-40°C. __,ss <sup>0</sup> c		
Storage Humidity	10%---95% (non-condensing)		

**SOR-6: Outdoor WiFi Access Point****Annexure-A6**

Reference	Parameters	Technical specification	Compliance (Yes/No)
CT2HW1	Hardware	Access Points proposed must include radios for both 2.4 GHz and 5 GHz.	
CT2HW2	Hardware	Must have a robust design for durability, without visible vents	
CT2HW3	Hardware	Must include dual band antennas to support both the 2.4GHz and 5GHz operations simultaneously.	
CT2HW4	Hardware	The controller must be set up with a Hotspot 2.0 WLAN profile and appropriate identity provider profiles to enable cellular-subscriber offload via Wi-Fi	
CT2HW5	Hardware	Mounting kit should be standard which shall be used for mounting access point	
CT2HW6	Hardware	"Must support Operating Temperature -20°C to 65°C and Operating Humidity Up to 95%, non-condensing"	
CT2WS1	wireless Standard	Must support 2X2 multiple-input multiple-output (MIMO) with TWO spatial streams	
CT2WS2	wireless Standard	"Must support simultaneous IEEE 802.11a/b/g/n/ac/ax standard"	
CT2WS3	wireless Standard	Must support data rates unto 1200 Mbps on 5Ghz radio and 574 mbps on2.4Ghz radio.	
CT2WS4	wireless Standard	Must support 40 MHz and 80 MHz wide channels in 5 GHz.	
CT2WS5	wireless Standard	Antenna Gain of Access Points must be +3dBm or better. Must support following minimum transmit power for both 2.4Ghz and 5Ghz radios. (i) 2.4-Ghz band: +25dBm (ii) 5.0-Ghz band: +25dBm	
CT2WS6	wireless Standard	AP should support VLAN trunking (802.1q) and VLAN based SSID for user traffic.	

CT2RF1	RF	The Wireless AP should have the technology to improve downlink performance.	
CT2RF2	RF	Must have -90dB to-100dB or better Receiver Sensitivity.	
CT2RF3	RF	Must incorporate radio resource management for power, channel, coverage hole detection and performance optimization	
CT2RF4	RF	Should support configurable carrier sense threshold	
CT2MI	Mesh	The Wireless Backhaul shall operate in 5Ghz	
CT2M2	Mesh	Support Encrypted and authenticated connectivity between all backhaul components	
CT2M3	Mesh	The AP should have 1 x IGbE port, RJ-45 PoEIn - 802.3at Class 4	
CT2RI	Roaming	Must support Proactive Key Caching and/or other methods for Fast Secure Roaming.	
CT2SI	Security	Must support Management Frame Protection.	
CT2S2	Security	Should support locally-significant certificates on the APs using a Public Key Infrastructure (PKI) or preinstalled certs on AP for authentication	
CT2S3	Security	Provision of Wireless IPS to filter malicious traffic	
CT2EI	Encryption	Access Points must support a distributed encryption/ decryption model.	
CT2E2	Encryption	Access Points must support hardware or software based encryption	
CT2MI	Monitoring	Must support the ability to serve clients or monitor the RF environment.	
CT2M2	Monitoring	AP model proposed must be able to be both a client-serving AP and Parallely monitor- Intrusion Prevention services.	
CT2F1	Flexibility:	Should support mesh capabilities for temporary connectivity in areas with no Ethernet cabling.	
CT2F2	Flexibility:	Should support QoS for voice over wireless.	
CT2F3	Flexibility:	Must support Controller-based and standalone (autonomous) deployments	
CT2F4	Flexibility:	Must support 16 WLANs per AP for SSID deployment flexibility.	
CT2O1	Operational:	Must support telnet or SSH or console login to APs directly for trouble shooting flexibility.	

CT202	Operational:	Must support automatic detection of dropped connection to controller,	
CT203	Operational:	Must support automatic failover to secondary controller, upon detecting lost connection to controller	
CT204	Operational:	Must support DHCP Option 82, defined in RFC 3046, including support for Sub-option 01 (Circuit-Id) and Sub-option 02 (Remote Id) fields.	
CT205	Operational:	With Controller APs (from a data-plane perspective) must support:	
		Ethernet over GRE IPv6 tunnel	
		- Automatic detection of failed tunnel termination, with configurable connection retry and timeout. - Automatic failover to secondary tunnel termination address.	
CT206	Operational:	Support for basic AP monitoring statistics for each radio: Bytes Sent, Bytes Received, Packets Sent, Packets Received,	
		Radio Channel Utilization, Noise.	
CT207	Operational:	Must support data-plane split tunneling in which ACLs may be configured to enable a range of destination net blocks and/or IPs to bypass the data-plane tunnel and be bridged on the wired interface.	
CT208	Operational:	AP should have capability to split tunnel for both IPv4 and IPv6 tunnel to segregate the management and data traffic.	
CT209	Operational:	AP should have capability to split tunnel for specific destination IP/Subnet (For implementing policy based Caching solutions) using local NAT and forward user traffic.	
CT2010	Operational:	The AP shall support 400 concurrent Clients per AP	
CT2011	Operational:	APs shall support SNMP v1 Or higher (v2N3)	
CT2P1	Power:	Must support Power over Ethernet/PoE+/UPoF/Power Injector/AC/DC .	
CT2Q1	Quality of Service:	shall have the support of 802.11e and WMM	
CT2Q2	Quality of Service:	Should be Wi-Fi Alliance certified and WPC Approved and ETA Certified	
CT2Q3	Quality of Service:	Must support QoS to prioritize video , voice and Data traffic	
CT2EES1	Environmental and Electrical Specifications	Must support QoS and Video Call Admission Control capabilities.	

CT2EES2	Environmental and Electrical Specifications	Access point shall support powering from POE/PoE+/UPoE/Power Injector/AC/DC.	
CT2EES3	Environmental and Electrical Specifications	Access point shall support pole, wall, and roof mounting options	
CT2EES4	Environmental and Electrical Specifications	Geographic orientation flexibility- tilt angle for pole, wall, and roof mounting units	
CT2EES5	Environmental and Electrical Specifications	The equipment shall support Wind Survivability Up to 266km/h(165 mph)	
CT2EES6	Environmental and Electrical Specifications	The Access point shall be IP67 certified.	
CT2EES7	Environmental and Electrical Specifications	The Access point shall be rated for operation over an ambient temperature range of OC to+55 C	
CT2EES8	Environmental and Electrical Specifications	Should Support Surge Protection on Ethernet Ports to meet the requirement at High Voltage Transmission Line running across the Railway Platform If any OEM/Bidder can't provide inbuilt surge protection in AP, external surge protection must be proposed. Surge protection of+ 2 kV on conner Ethernet ports.	

**Srl. No. 7: 10G SFP+ UD, 10 KM**

**Annexure-A7**

Srl. No.	Technical Specification	Compliance (Complied/ Not complied)
1	SFP modules should comply with multi-source agreement (MSA), enabling compatibility with other vendors equipment Cisco, Juniper, Nokia, D-Link, Zyxel, Edge Core, Extreme etc.	
2	.Optical distance-10Km. to 40Km.	
3	Type of connector : LC	
4	Optical Power Budget: 24dB on 1310nm.	
5	Fiber Type-duel fiber on Single mode fiber.	
7	Should support DDMI feature.	
8	Ethernet capacity-10Gbps	
9	OEM should be having valid ISO 9000 & ISO 14000 certification on the date of opening of bid.	
10	Should have CE and FCC regulatory compliances.	

**SOR- 8: 1G SFP UD, 20 KM****Annexure-A8**

Srl. No.	Technical specification	Compliance (yes/ No)
1	Should be Multi-vendor MSA compatible with OEM equipment of Cisco, Juniper, D Link, Nokia, Ciena etc.	
2	Should support 10 - 20 km. optical distance on dual fiber	
3	Should have LC type connector	
4	Should have 1 Gigabit Ethernet capacity on single mode fiber	
5	Should support Digital Diagnostic Monitoring feature with following operating parameters: Transceiver temperature" 0 ~ 70 degC Laser bias current Transmitted optical power: 0 ~ -5dBm Received optical power: -13dBm Transceiver supply voltage: 3.3V It also provides a sophisticated system of alarm and warning flags	
6	OEM should be having valid ISO 9000 Certificate	
7	Should have CE and FCC and UL regulatory Certificate	
8	Operating temperature of the SFP should be minimum 0 to 70°C (23 to 149 °F)	
9	Complies with SFF-8431 SFP+ MSA (Multi-Source Agreements Standards)	
10	Complies with 1310nm DFB laser transmitter & CPRI Option 7, 8	

**Srl. No. 9: 1G SFP BiDi, 20 KM****Annexure-A9**

Srl. No.	Technical Specification	Compliance (Complied/ Not complied)
1	Multi-Vendor MSA Compatible with OEM Equipment of CISCO, Juniper, D-Link, Nokia, Ciena etc.	
2	Should support 10 – 20 km optical distance on single fiber	
3	Should have LC type connector	
4	Should quote rate in pair (BX U & D)	
5	Should have 01 Gigabit Ethernet capacity on single mode fiber.	
6	Should support Digital Diagnostic Monitoring feature with following operating parameters: Transceiver temperature" 0 ~ 70 degC Laser bias current Transmitted optical power: 0 ~ -5dBm Received optical power: -17	

	dBm Transceiver supply voltage: 3.3V It also provides a sophisticated system of alarm and warning flags	
7	OEM should be having valid ISO 9000 Certificate	
8	Should have CE and FCC and UL or equivalent regulatory Certificate	
9	Operating temperature of the SFP should be minimum 0 to 70°C (23 to 149 °F)	
10	Complies with SFF-8431 SFP+ MSA (Multi-Source Agreements Standards)	
11	Complies with 1310nm/1550nm DFB laser transmitter & CPRI Option 7, 8	
12	Should support 1G to 1.25Gb/s Multi-Rate & 2-wire interface for management and diagnostic monitor compliant with SFF- 8472	

**Srl. No. 10: 10G SFP+ UD, 20 KM****Annexure-A10**

Srl. No.	Technical specification	Compliance (Yes/No)
1	Should be Multi-vendor MSA compatible with OEM equipment of Cisco, Juniper, D Link, Nokia, Ciena etc.	
2	Should support 10 - 20 km. optical distance on dual fiber	
3	Should have LC type connector	
4	Should have 10 Gigabit Ethernet capacity on single mode fiber	
5	Should support Digital Diagnostic Monitoring feature with following operating parameters: Transceiver temperature" 0 ~ 70 degC Laser bias current Transmitted optical power: 0 ~ -5dBm Received optical power: -13dBm Transceiver supply voltage: 3.3V It also provides a sophisticated system of alarm and warning flags	
6	OEM should be having valid ISO 9000 Certificate	
7	Should have CE and FCC and UL or equivalent regulatory Certificate	
8	Operating temperature of the SFP should be minimum 0 to 70°C (23 to 149 °F)	
9	Complies with SFF-8431 SFP+ MSA (Multi-Source Agreements Standards)	
10	Complies with 1310nm DFB laser transmitter & CPRI Option 7, 8	

11	Should support 9.83G to 11.32Gb/s Multi-Rate & 2-wire interface for management and diagnostic monitor compliant with SFF-8472	
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**Srl. No. 11: 10G SFP+, BiDi, 20 KM****Annexure-A11**

Srl. No.	Technical Specification	Compliance (Complied/ Not complied)
1	SFP module should comply with multi-source agreement (MSA), enabling compatibility with equipment of CISCO, Juniper, D- Link, Nokia, Ciena etc.	
2	Should support 10 - 20km. optical distance on single fiber	
3	Should have LC type connector	
4	Transmitted Optical Power range : 0.00 dBm. ~- 4.00 dBm. Received Optical Power : - 16 dBm.	
5	Should quote rate in pair (BX U & D)	
6	Should have 10 Gigabit Ethernet capacity on single mode fiber.	
7	Should support Digital Diagnostic Monitoring feature with following operating parameters: Transceiver temperature" 0 ~ 70 degC Laser bias current Transceiver supply voltage: 3.3V It also provides a sophisticated system of alarm and warning flags	
8	OEM should be having valid ISO 9000 Certificate	
9	Should have CE and FCC and UL or equivalent regulatory compliances	
10	Operating temperature of the SFP should be minimum 0 to 70°C (23 to 149 °F)	
11	Complies with SFF-8431 SFP+ MSA (Multi-Source Agreements Standards)	
12	Complies with 1270nm & 1330nm DFB laser transmitter & CPRI Option 7, 8	

**Srl. No. 12: 10G SFP+, UD, 80 KM****Annexure-A12**

S No.	Technical Specification	Compliance Yes/No
1	SFP modules should comply with multi-source agreement (MSA), enabling compatibility with other vendors equipment. of CISCO, Juniper, D-Link, Techroutes, Nokia, Ciena, Zyxel, Edge Core and Extreme. etc.	
2	Should support minimum 80 km optical distance on dual fiber (ITU-G 652D)	
3	Should have LC type connector.	
4	Should have 10 Gigabit Ethernet throughput on single mode fibre.	
5	Important Parameters:	
	A. Link Budget (Max Tx Power- Receiver Sensitivity) 28 dB or better.	
	B. Transceiver supply voltage: 3.3 V (Nominal)	
	C. The case operating temperature -0 Degree Centigrade to +70 Degree Centigrade.	
	D. The storage Temp: -40 Degree Centigrade to +85 Degree Centigrade	
	E. Wavelength- 1270/1330 or 1310/1550 or 1490/1550 (Nominal)	
6	Should support Digital Diagnostic Monitoring (MSA-SFF 8472 Compliant) feature with following operating parameters:	
	A. Transceiver temperature	
	B. Laser bias current	
	C. Launch Optical Power	
	D. Received optical power	
	E. Transceiver supply voltage:	
	F. It will provide alarm and warning flags to alert the user when particular operating parameters are outside of a factory set normal range.	
7	Complies with SFF-8431/8432 SFP+ MSA (Multi-Source Agreements Standards)	
8	Applications- 10 Gbps Ethernet	
9	Regulatory Compliance	
	A. EMI/EMC compatible with FCC/EN/IEC	
	B. Laser Safety compatible with FDA/EN/IEC	
	C. RoHS compliant	

**SOR- 13: 10G SFP+ BiDi, 40 KM****Annexure-A13**

Srl. No.	Technical Specification	Compliance (Complied/ Not complied)
1	SFP modules should comply with multi-source agreement (MSA), enabling compatibility with other vendors equipment Cisco, Juniper, Nokia, D-Link, Zyxel, Edge Core, Extreme etc.	
2	.Optical distance-40Km. to 60 Km.	
3	Type of connector : LC	
4	Optical Power Budget: 24dB on 1310nm.	
5	Fiber Type-Single fiber on Single mode fiber.	
6	Should provide SFPs in Pair (BX U & D)	
7	Should support DDMI feature.	
8	Ethernet capacity-10Gbps	
9	OEM should be having valid ISO 9000 & ISO 14000 certification on the date of opening of bid.	
10	Should have CE and FCC regulatory compliances.	
11	Operating Temperature of the SFP Should be mini 0° to 70 °C	

**SOR-14: 10G SFP+ BiDi, 80 KM****Annexure-A14**

S No.	Technical Specification	Compliance Yes/No
1	SFP modules should comply with multi-source agreement (MSA), enabling compatibility with other vendors equipment. of CISCO, Juniper, D-Link, Techroutes, Nokia, Ciena, Zyxel, Edge Core and Extreme. etc.	
2	Should support minimum 80 km optical distance on Single Fiber (ITU-G 652D) (Bi Directional on Single Mode Fiber).	
3	Should have LC type connector.	
4	Should provide quantity in such a way that matching pair (BX U & D) can be achieved.	
5	Should have 10 Gigabit Ethernet throughput on single mode fiber.	
6	Important Parameters:	
	A. Link Budget (Max Tx Power- Receiver Sensitivity) 28 dB or better.	
	B. Transceiver supply voltage: 3.3 V (Nominal)	

	C. The case operating temperature -0 Degree Centigrade to +70 Degree Centigrade.	
	D. The storage Temp: -40 Degree Centigrade to +85 Degree Centigrade	
	E. Wavelength- 1270/1330 or 1310/1550 or 1490/1550 (Nominal)	
7	Should support Digital Diagnostic Monitoring (MSA-SFF 8472 Compliant) feature with following operating parameters:	
	A. Transceiver temperature	
	B. Laser bias current	
	C. Launch Optical Power	
	D. Received optical power	
	E. Transceiver supply voltage:	
	F. It will provide alarm and warning flags to alert the user when particular operating parameters are outside of a factory set normal range.	
8	Complies with SFF-8431/8432 SFP+ MSA (Multi-Source Agreements Standards)	
9	Applications- 10 Gbps Ethernet	
10	Performance Certificate: The bidder will submit a satisfactory performance certificate from Telecom Service Provider/ISP/Govt/PSU for the offered make of the SFP.	
11	Regulatory Compliance	
	A. EMI/EMC compatible with FCC/EN/IEC	
	B. Laser Safety compatible with FDA/EN/IEC	
	C. RoHS compliant	
12	SFP should support all OEM Vendors devices and open all optic ports	

**SOR- 15: 25G SFP+ BiDi, 40 KM****Annexure-A15**

Srl. No.	Technical Specification	Compliance (Complied/ Not Complied)
1	SFP modules should comply with multi-source agreement (MSA), enabling compatibility with other vendors equipment Cisco, Juniper, Nokia, D-Link, Zyxel, Edge Core, Extreme etc.	
2	.Optical distance-40Km.	
3	Type of connector : LC	
4	Optical Power Budget: 24dB on 1310nm.	
5	Fiber Type-Single fiber on Single mode fiber.	
6	Should provide SFPs in Pair (BX U & D)	
7	Should support DDMI feature.	
8	Ethernet capacity-25Gbps	

9	OEM should be having valid ISO 9000 & ISO 14000 certification on the date of opening of bid.	
10	Should have CE and FCC regulatory compliances.	

**SOR-16: 40G SFP+ UD, 40 KM****Annexure-A16**

Srl. No.	Technical Specification	Compliance (Complied/ Not complied)
1	SFP modules should comply with multi-source agreement (MSA), enabling compatibility with other vendors equipment Cisco, Juniper, Nokia, D-Link, Zyxel, Edge Core, Extreme etc.	
2	.Optical distance-40Km.	
3	Type of connector : LC	
4	Optical Power Budget: 24dB on 1310nm.	
5	Fiber Type-duel fiber on Single mode fiber.	
6	Should provide SFPs in Pair (BX U & D)	
7	Should support DDMI feature.	
8	Ethernet capacity-40Gbps	
9	OEM should be having valid ISO 9000 & ISO 14000 certification on the date of opening of bid.	
10	Should have CE and FCC regulatory compliances.	

**SOR-17: 1G Electrical SFP****Annexure-A17**

SN	Description	Compliance (Yes/ No)
1	SFP-GB-GE-T 1000BASE-T Copper Small Form Pluggable (SFP) modules are based on the SFP Multi Source Agreement (MSA). It is compliant with the Gigabit Ethernet and 1000BASE-T standards as specified in IEEE STD 802.3 and 802.3ab.	
2	SFP-GB-GE-10/100/1000BASE-TS FP Copper RJ-45 100m Transceiver.	
3	LAN1000Base-T	
4	Gigabit Ethernet over Cat6/Cat6a Cable	
5	Switch to Switch Interface	
6	Router/Server Interface	
7	Support RX_LOS as Link indication function	

8	Fully Metallic Enclosure for Low EMI	
9	Low Power Dissipation(1.05W Typical)	
10	Compact RJ-45 Connector Assembly 1000BASE-TSFP COPPER RJ-45 100M TRANSCEIVER	
11	For 100m Reach Over UTP Cat6/Cat6a Cable	
12	Hot-Pluggable SFP Footprint	
13	Support 1000BASE-T Operation in Host Systems	
14	Access to Physical Layer IC via 2-Wire Serial Bus	
15	Compliant with MSA SFP	
16	Detailed Product Information in EEPROM	
17	Compliant with IEEE Std 802.3-2002	
18	Commercial Temperature Range: 0~70°C Extended Temperature Range: -5~85°C Industrial	

**Srl. No.18: AC to DC converter****Annexure-A18****AC to DC converter 10A 230V I/P 48V O/P:**

<b>Sri. No.</b>	<b>Features</b>	<b>Compliance (Yes/No.)</b>
1	Protections- Short circuit Overload/ Over voltage/ Over temperature	
2	Forced air cooling by built-in DC fan	
3	Withstand 300VAC surge input for 5 seconds	
4	Built-in cooling fan Off-On control	
5	Built-in constant current limiting circuit	
6	100% full load burn in test.	
7	Led indicator for power on.	
8	Fixed switching frequency at 900KHz	
9	High reliability	
10	OUTPUT DC Voltage- 48V	
11	Rated Current- 7.3A	
12	Rated Power- 350.4W	
13	Setup Rise Time - 1000ms, 50ms/230VAC 1000ms, 50ms/ 115VAC at full load	
14	INPUT Voltage Range- 90 - 132VAC / 180- 264VAC by switch 254 -	

	370VDC	
15	Efficiency- 87.5% : Frequency Range- 47 - 63Hz	
16	AC Current - 7A/115VAC 4A/230VAC : Leakage Current- <3.5mA /240VAC	
17	Overload- 105 - 135% rated output power	
18	Protection type - Constant current limiting, recovers automatically after fault condition is removed	
19	Over Voltage- 57.6 - 67.2V	
20	Over Temperature- 90°C•}5°C(3.3-7.5V); 85°C•}5°C(12-15V); 80°C•}5°C(24V);75°C•}5°C(27-48V) (TSW1) Detect on case	
21	Function- Fan off/on control - RTH2;;;50°C FAN ON.45°C FAN OFF (3.3 - 7.5V)	
22	Working Temperature- -20 - +60°C(Refer to output load rating curve)	
23	Working Humidity - 20 - 90% RH non-condensing	
24	Safety Standards - UL60950-1 equivalent	
25	Warranty: 3 year	

**Srl. No.19 DC to AC converter**

**Annexure-A19**

SI. No.	Parameter	Specified limit	Compliance (Yes/No)	
1	AC Output	Rated Power (Continuous)	250W	
2		Over Rated Power (3 Min.)	287.5W	
3		Peak Power (10 Sec.)	375W	
4		Surge Power (30 Cycles)	500W	
5		AC Voltage	Default setting set at 230VAC	
6			200/220/230/240Vac selectable by DIP S.W	
7		Frequency	Default setting set at 50Hz ± 0.1Hz 50/60Hz selectable by DIP S.W	
8	Waveform	True sine wave (THD<3%)		
9		AC Regulation	±3.0% at rated input voltage	
10		DC voltage	48V	
11		Voltage Range (Typ.)	40-66Vdc	

12	DC Input	DC Current (Typ.)		?A	
13		Off Mode Current Draw		<1mA at battery - DC input must be disconnected	
14		Efficiency (typ.)		93%	
15	Protection	AC Output	Over Temperature	Protection type: Shut down o/p voltage, re-power on to recover	
16			Output Short	Protection type: Shut down o/p voltage, re-power on to recover	
17			Over Load (Typ.)	105-115% load for 180 sec., 115%-150% load for 10 sec.	
18				Protection type: Shut down o/p voltage, re-power on to recover	
19	Function	Remote Control		Power ON-OFF remote control by front panel dry contact connector (by RELAY), Open : Normal work; Short : Remote off	
20		Tx/Rx		Support Tx/Rx for monitoring power inverter status	
21	Environment	Working Temp.		-20 - +70°C (Refer to "Derating curve")	
22		Working Humidity		20% - 90% RH non-condensing	
23		Storage Temp., Humidity		-30 - +70°C / -22 - +158°F, 10 - 95% RH non-condensing	
24	Safety & EMC	Safety Standards		CB IEC62368-1 for all models; E13, EAC TPTC004, AS/NZS 62368.1 for NTS-250P-212/224/248 approved	
25		EMC Emission	Radiated	FCC for 112, 124, 148 only ( Test Level: Class A)	
26	Warranty		3 years		

**SOR-20-25 : Single mode SC/PC-LC/PC patchcord 01mtr. /03mtr, /05mtr. /10mtr. /15 mtr./ 20 mtr. length.**

**Annexure-A20**

Srl. No	Parameter	Specification	Compliance (Yes/No.)
1	Connector type, Connector End A	SC/PC	
2	Connector type, Connector End B	LC/PC	
3	/PC	Simplex	
4	Fiber type	Single Mode 9/125 micron	
5	Cable Size, Outer dia (in mm)	3	

6	Cord Length (in m)	20/15/10/5/3/1	
7	Jacket material (Sheath material)	LSZH / PVC	
8	Cable colour	Yellow	
9	Operating temperature	-10 deg.C to +60 deg C	
10	Connector Insertion loss, Max. (in dB)	0.3	
11	Connector Return loss , Min. (in dB)	50	
12	Material of Ferrule	Zirconia Ceramic, Pre Radiused and pre polished	
13	Durability	500Mating cycle	

**SOR-26 : 32 : Single mode LC/PC-LC/PC patchcord 01mtr./ 02mtr./ 03mtr./ 05mtr./ 10mtr./ 15mtr./ 20 mtr. length.**

**Annexure-A21**

Srl. No	Parameter	Specification	Compliance (Yes/No)
1	Connector type, Connector End A	LC/PC	
2	Connector type, Connector End B	LC/PC	
3	Cable type	Simplex	
4	Fiber type	Single Mode 9/125 micron	
5	Cable Size, Outer dia (in mm)	0.9 / 3	
6	Cord Length (in m)	20/15/10/5/3/2/1	
7	Jacket material (Sheath material)	LSZH / PVC	
8	Cable colour	Yellow	
9	Operating temperature	-10 deg C to +60 deg C	
10	Connector Insertion loss, Max. (in dB)	0.2 / 0.3	
11	Connector Return loss , Min. (in dB)	50 / 55	
12	Material of Ferrule	Zirconia Ceramic, Pre Radiused and pre polished	
13	Durability	200 Mating cycle	

**SOR-33:38: Single mode LC/PC-FC/PC patchcord 01mtr. /03mtr. /05mtr. /10mtr. /15mtr. /20 mtr. length.**

**Annexure-A22**

Srl. No	Parameter	Specification	Compliance (Yes/No)
1	Connector type, Connector End A	FC/PC	
2	Connector type, Connector End B	LC/PC	
3	Cable type	Simplex	
4	Fiber type	Single Mode 9/125 micron	
5	Cable Size, Outer dia (in mm)	3	
6	Cord Length (in m)	20/15/10/5/3/1	
7	Jacket material (Sheath material)	PVC	
8	Cable colour	Yellow	

9	Operating temperature	-10 deg.C to +60 deg C	
10	Connector Insertion loss, Max. (in dB)	0.3	
11	Connector Return loss , Min. (in dB)	50	
12	Material of Ferrule	Zirconia Ceramic, Pre Radiused and pre polished	
13	Durability	500 Mating cycle	

**SOR.39-44 : Single mode SC/PC-FC/PC patchcord 01mtr./03mtr. /05 mtr. /10mtr. /15mtr. /20 mtr. length.**

**Annexure-A23**

Srl. No	Parameter	Specification	Compliance (Yes/No)
1	Connector type, Connector End A	SC/PC	
2	Connector type, Connector End B	FC/PC	
3	Cable type	Simplex	
4	Fiber type	Single Mode 9/125 micron	
5	Cable Size, Outer dia (in mm)	3/1.2	
6	Cord Length (in m)	20/15/10/5/3/1	
7	Jacket material (Sheath material)	LSZH / PVC	
8	Cable colour	Yellow	
9	Operating temperature	-10 deg.C to +60 deg C	
10	Connector Insertion loss, Max. (in dB)	0.3	
11	Connector Return loss , Min. (in dB)	50	
12	Material of Ferrule	Zirconia Ceramic, Pre Radiused and pre polished	
13	Durability	200 Mating cycle	

**SOR-45:49 : Single mode FC/PC-FC/PC patchcord 01mtr. /03mtr./ 05mtr. /10mtr. /20 mtr. length.**

**Annexure-A24**

Srl. No	Parameter	Specification	Compliance (Yes/No)
1	Connector type, Connector End A	FC/PC	
2	Connector type, Connector End B	FC/PC	
3	Cable type	Simplex	
4	Fiber type	Single Mode 9/125 micron	
5	Cable Size, Outer dia (in mm)	0.9 / 3	
6	Cord Length (in m)	20/10/5/3/1	
7	Jacket material (Sheath material)	LSZH / PVC	
8	Cable colour	Yellow	
9	Operating temperature	-10 deg C to +60 deg C	
10	Connector Insertion loss, Max. (in dB)	0.2 / 0.3	

11	Connector Return loss , Min. (in dB)	50 / 55	
12	Material of Ferrule	Zirconia Ceramic, Pre Radiused and pre polished	
13	Durability	200 Mating cycle	

**SOR-.50:55 : Single mode SC/PC-SC/PC patchcord 01/mtr./03mtr. /05mtr. /10mtr. /15mtr. /20 mtr. length.**

**Annexure-A25**

Srl. No	Parameter	Specification	Compliance (Yes/No)
1	Connector type, Connector End A	SC/PC	
2	Connector type, Connector End B	SC/PC	
3	Cable type	Simplex	
4	Fiber type	Single Mode 9/125 micron	
5	Cable Size, Outer dia (in mm)	0.9/1.2/1.6/2/3	
6	Cord Length (in m)	20/15/10/5/3/1	
7	Jacket material (Sheath material)	LSZH / PVC	
8	Cable colour	Yellow	
9	Operating temperature	-10 deg.C to +60 deg C	
10	Connector Insertion loss, Max. (in dB)	0.3	
11	Connector Return loss , Min. (in dB)	50 / 55	
12	Material of Ferrule	Zirconia Ceramic, Pre Radiused and pre polished	
13	Durability	200 Mating cycle	

**SOR-56:63 : LCPC plugin fixed attenuator 1dB/ 3dB/ 5dB/ 6dB/ 8dB/ 9dB/ 10dB/ 13dB:**

**Annexure-A26**

Srl. No	Parameter	Specification	Compliance (Yes/No)
1	Connector First End	LC, Male	
2	Connector Second End	LC, Female	
3	Attenuation	1dB/ 3dB/ 5dB/ 6dB/ 8dB/ 9dB/ 10dB/ 13dB	
4	Cable Mode	Simplex	
5	Media	SMF	
6	Standard	OS1	
7	Compatible OEM	Industry standard	

**SOR-64 : LCPC – LCPC adaptor**

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**Annexure-A27**

Srl. No	Parameter	Specification	Compliance (Yes/No)
1	Operating Temperature	-40°C to +85°C -40°C	
2	Connection Durability	500 Mating	
3	Insertion Loss	< 0.3 dB	

**SOR 65-67 : FCPC Attenuator 03 dB/ 05 dB/ 10 dB****Annexure-A28**

Srl. No	Parameter	Specification	Compliance (Yes/No)
1	Fiber Connector	FC/PC	
2	Fiber type	Single mode	
3	Operating Wavelength Range	1240 - 1620 nm	
4	Key Size	Universal (Female 2.2 mm Wide-Key Input, Male 2.0 mm Narrow-Key Output)	
5	Attenuation (in dB)	10dB / 5dB /3dB	
6	Transmission	10.0 ± 1.8% / 31.6 ± 3.9% / 50.1 ± 6.1%	
7	Return Loss	≥40 dB	
8	Maximum Input Power	1 W	
9	Polarization Dependent Loss (PDL)	≤0.1 dB	
10	Operating Temperature	-40 to 85 °C	

**Srl. No.68 : FCPC-FCPC Adaptor****Annexure-A29**

Srl. No	Parameter	Specification	Compliance (Yes/No)
1	Connectors	FC (female) to FC (female)	
2	Body material	Metal	
3	Mounting	Free standing or bulkhead 8.5mm hole (.34in)	
4	Alignment sleeve material	Zirconia Ceramic	
5	Channels	Simplex	
6	Precision	Single mode	
7	Colour	Metal	

8	Insertion Loss (IL)-	<0.2dB	
9	Durability	- <0.1dB change after 500 mating	
10	Operating Temperature	-4 ° C to +75 ° C (+25 ° F to +165 ° F)	

**SOR-69:71 : Fixed Attenuator SCPC-SCPC 03dB/ 05dB/ 10dB****Annexure-A30**

Srl. No	Parameter	Specification	Compliance (Yes/No)
1	Mode type	Single Mode	
2	Operation Wave length	1310nm or 1550 nm.	
3	Connector on First End	1 x SC/PC Male	
5	Connector on Second End	1 x SC/PC Female	
6	Attenuation	10dB, 5dB, 3dB	
8	Return Loss	:≥50 dB	
9	Operating Temperature	-40°C to +85°C -40°C	

**SOR-72 : SCPC – SCPC Adaptor**

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**Annexure-A31**

Srl. No	Parameter	Specification	Compliance (Yes/No)
1	Configuration	Simplex	
2	FO Connector	SC/PC	
4	Fiber Mode	Single Mode (SM)	
5	Attenuation Tolerance	±0.5dB	
6	Return Loss	:≥55dB	
7	Sleeve material	Zirconia-Ceramic / Phosphor-Bronze	
8	Warranty	1 Year	

**Annexure-II**

**Format of Manufacturer Authorisation form (MAF)**

**(it should be submitted for SOR Items Nos. 1 to 17 separately as applicable)**

Group General Manager(Project),  
RailTel Corporation of India Ltd. Eastern  
Region,19th Floor,  
Aurora Waterfront Building,  
Plot No. 34/1, Block GN, Sector-V,  
Salt Lake City, Bidhannagar,  
Kolkata-700091.

**Dt.** \_\_\_\_\_

**Subject: Manufacturer Authorisation form (MAF) to M/s ..... for .....**

**Ref: GeM Bid No. GEM/2026/B/7319622, dated. 05.03.2026**

Dear Sir,

We, M/s....., are established and reputed manufacturer and service provider of  
..... (products details), having our registered office at  
.....

We hereby authorise M/s ..... (bidder name), Office  
..... to participate in bid and subsequently upon award of  
the bid to execute \_\_\_\_\_(Name of work) our range of products against your above said bid.

We further extend our warranty for .....months for our range of products offered by M/s  
.....against the above-said bid.

Thanking you, Best  
regards,

**Authorised Signatory**

\*\*\*\*\*

**FORMAT FOR AFFIDAVIT TO BE UPLOADED BY TENDERER ALONG WITH THE TENDER****DOCUMENTS**

(To be executed in presence of Public notary on non-judicial stamp paper of the value of Rs.100/-  
 . The stamp paper has to be in the name of the tenderer)\*\*

I..... (Name and designation)\*\* appointed as the attorney/authorized signatory of the tenderer (including its constituents),  
 M/s. \_\_\_\_\_ (hereinafter called the tenderer) for the purpose of the Tender documents for the work of \_\_\_\_\_ as per the tender No. \_\_\_\_\_ of RailTel Corporation of India Ltd., Eastern Region, do hereby solemnly affirm and state on the behalf of the tenderer including its constituents as under:

- (i) I/We the tenderer (s) am/are signing this document after carefully reading the contents.
- (ii) I/we the tenderer(s) also accept all the conditions of the tender and have signed all the pages in confirmation thereof.
- (iii) I/We hereby declare that I/We have downloaded the tender documents from electronic tender portal. I/We have verified the content of the document from the website and there is no addition, no deletion or no alteration to the content of the tender document. In case of any discrepancy noticed at any stage i.e. evaluation of tenderer's, execution of work or final payment of the contract, the master copy available with the RailTel Administration shall be final and binding upon me/us.
- (iv) I/We declare and certify that I/we have not made any misleading or false representation in the forms, statements and attachments in proof of the qualification requirements.
- (v) **I/We also understand that my/our offer will be evaluated based on the documents/credentials submitted along with the offer and same shall be binding upon me/us.**
- (vi) **I/We declare that the information and documents submitted along with the tender by me/us are correct and I/we are fully responsible for the correctness of the information and documents submitted by us.**
- (vii) I/We undersigned that if the certificates regarding eligibility criteria submitted by us are found to be forged/false or incorrect at any time during process for evaluation of tenders, it shall lead to forfeiture of the tender EMD besides banning of business for five years on entire RailTel Corporation of India Limited. Further, I/we (*insert name of the tenderer*) \*\* \_\_\_\_\_ and all my/our constituents understand that my/our offer shall be summarily rejected.
- (viii) I/we also understand that if the certificates submitted by us are found to be false/forged or incorrect at any time after the award of the contract, it will lead to termination of the contract, alongwith forfeiture of EMD and Performance Guarantee besides any other action provided in the contract including banning of business for five years on entire RailTel Corporation of India Limited.

**DEPONENT  
 SEAL AND SIGNATURE OF THE TENDERER**

VERIFICATION

I/We above named tenderer do hereby solemnly affirm and verify that the contents of my/our above affidavit are true and correct. Nothing has been concealed and no part of it is false.

**DEPONENT  
SEAL AND SIGNATURE OF THE TENDERER**

Place:

Dated:

\*\* The contents in Italics are only for guidance purpose. Details as appropriate are to be filled in suitably by tenderer. Attestation before Magistrate/Notary Public.

**PROFORMA FOR PERFORMANCE BANK GUARANTEE BOND**

(to be in accordance with stamp act)

(To be used for performance Guarantee Beyond Rs. 5 Lacs from approved Scheduled Commercial Banks and not from any Cooperative Bank or NBFC)

1. In consideration of the RailTel Corporation of India Limited, 19th Floor, Aurora Water Front Building, GN. 34/1, Block GN, Sector-V, Salt Lake City, Bidhannagar, Kolkata- 700091 (Herein after called RailTel) having agreed to exempt .....  
 .....(Hereinafter called “the said Contractor(s)”) from the demand, under the terms and conditions of an Purchase Order/LOA No.....dated.....made between.....  
 .....and..... for (hereinafter called “ the said Agreement”) of security deposit for the due fulfillment by the said Contractor (s) of the terms and conditions contained in the said Agreement, on production of a Bank Guarantee for Rs. ....(Rs ..... only). We ..... (indicate the name of the Bank) hereinafter referred to as “the Bank”) at the request of ..... Contractor(s) do hereby undertake to pay the RailTel an amount not exceeding Rs..... against any loss or damage caused to or suffered or would be caused to or suffered by the RailTel by reason of any breach by the said Contractor(s) of any of the terms or conditions contained in the said Agreement.
2. We ,.....Bank and our local branch at Kolkata (indicate detail address of local Kolkata branch with code no.) do hereby undertake to pay the amounts due and payable under this Guarantee without any demur, merely on demand from the RailTel stating that the amount is claimed is due by way of loss or damage caused to or would be caused to or suffered by the RailTel by reason of breach by the said Contractor(s) of any of terms or conditions contained in the said Agreement or by reason of the Contractor(s) failure to perform the said Agreement. Any such demand made on the Bank shall be conclusive as regards the amount due and payable by the Bank under this guarantee. However, our liability under this guarantee shall be restricted to an amount not exceeding Rs . .....
3. We, ..... bank undertake to pay to the RailTel any money so demanded notwithstanding any dispute or disputes raised by the Contractor(s) / Bidder(s) in any suit or proceedings pending before any court or Tribunal relating thereto our liability under this present being, absolute and unequivocal. The payment so made by us under this Bond shall be a valid discharge of our liability for payment there under and the Contractor(s) / Bidder(s) shall have no claim against us for making such payment.
4. We,..... Bank further agree that the Guarantee herein contained shall remain in full force and effect during the period that would be taken for the performance of the said Agreement and that it shall continue to be enforceable till all the dues of the RailTel under or by virtue of the said Agreement have been fully paid and its claims satisfied or discharged or till RailTel certifies that the terms and conditions of the said Agreement have been fully and properly carried out by the said Contractor(s) and accordingly discharges this Guarantee. Unless a demand or claim under the



**Annexure -V**

*Note: Bidders exempted from submission of bid security are required to submit this form duly filled, signed and stamped.*

**Bid Securing Declaration**  
(on Company Letter-head)

Bidder's Name \_\_\_\_\_  
[Address and Contact Details]

To  
Group General Manager(Project),  
RailTel Corporation of India Ltd., 19th Floor,  
Aurora Waterfront Building, Plot No. 34/1, Block GN,  
Sector-V, Salt Lake City, Bidhannagar, Kolkata-700091.

Ref: GeM Bid No. GEM/2026/B/7319622, Dt. 05.03.2026

Sir/ Madam

We, the undersigned, solemnly declare that:

We understand that according to the conditions of this Tender Document, the bid must be supported by a Bid Securing Declaration in lieu of Bid Security.

We unconditionally accept the conditions of this Bid Securing Declaration. We understand that we shall stand automatically suspended from being eligible for bidding in any tender in RailTel Corporation of India Ltd for 2 years from the date of opening of this bid if we breach our obligation(s) under the tender conditions if we:

- 1) withdraw/ amend/ impair/ derogate, in any respect, from our bid, within the bid validity; or
- 2) being notified within the bid validity of the acceptance of our bid by the Procuring Entity:
- 3)
  - a. refused to or failed to produce the original documents for scrutiny or the required Performance Security within the stipulated time under the conditions of the Tender Document.
  - b. Fail or refuse to sign the contract.

**We know that this bid-Securing Declaration shall expire if the contract is not awarded to us, upon:**

- 4) receipt by us of your notification
  - a. of cancellation of the entire tender process or rejection of all bids or
  - b. of the name of the successful bidder or
- 5) Ninety days after the expiration of the bid validity or any extension to it.

(Signed by the Authorized Representative of Firm)

Name of Authorized Representative:  
Name of Firm:  
Date:

## Annexure – VI

**Staggered Delivery of materials to Kolkata Store:**

SOR Item No.	Item Description	UoM	Total Qty.	1st Lot to be delivered within 30-45 days	2 <sup>nd</sup> Lot to be delivered within 2 years
1	10G Fiber Switch	Nos.	216	108	108
2	1G Access Switch (Non PoE)	Nos.	126	63	63
3	1G Access Switch (PoE)	Nos.	226	113	113
4	Firewall	Nos.	2	2	--
5	Router	Nos.	20	10	10
6	Access Point	Nos.	199	100	99
7	SFP+ 10G UD, 10 KM	Nos.	90	45	45
8	SFP 1G ,UD, 20KM	Nos.	160	80	80
9	SFP 1G, BiDi ,20KM	Pair	160	80	80
10	SFP+ 10G UD 20KM	Nos.	110	55	55
11	SFP+10G BiDi 20KM	Pair	70	35	35
12	SFP+ 10G UD, 80 KM	Nos.	25	13	12
13	SFP+ 10G BIDI, 40KM	Pair	160	80	80
14	SFP+ BIDI 10G 80KM	Pair	31	16	15
15	SFP+ 25G BIDI 40KM	Pairs	30	15	15
16	SFP+ 40G, UD 40KM	Nos.	20	10	10
17	Electrical SFP 1G	Nos.	40	20	20
18	AC to DC converter	Nos.	20	10	10
19	DC to AC converter	Nos.	20	10	10
20	Single mode SC/PC - LC/PC patch Chord - 01 mtr.	Nos.	100	50	50
21	Single mode SC/PC - LC/PC patch Chord - 03 mtr.	Nos.	100	50	50
22	Single mode SC/PC - LC/PC patch Chord - 05 mtr.	Nos.	300	150	150
23	Single mode SC/PC - LC/PC patch Chord - 10 mtr.	Nos.	350	175	175
24	Single mode SC/PC - LC/PC patch Chord - 15 mtr.	Nos.	150	75	75
25	Single mode SC/PC - LC/PC patch Chord – 20 mtr.	Nos.	303	152	151
26	Single mode LC/PC - LC/PC patch Chord - 01 mtr.	Nos.	550	275	275
27	Single mode LC/PC - LC/PC patch Chord - 02 mtr.	Nos.	100	50	50
28	Single mode LC/PC - LC/PC patch Chord - 03 mtr.	Nos.	500	250	250
29	Single mode LC/PC - LC/PC patch Chord - 05 mtr.	Nos.	500	250	250
30	Single mode LC/PC - LC/PC patch Chord - 10 mtr.	Nos.	646	323	323
31	Single mode LC/PC - LC/PC patch Chord - 15 mtr.	Nos.	250	125	125
32	Single mode LC/PC - LC/PC patch Chord - 20 mtr.	Nos.	500	250	250
33	Single mode LC/PC-FC/PC patch Chord 01 mtr.	Nos.	100	50	50

34	Single mode LC/PC-FC/PC patch Chord 03 mtr.	Nos.	100	50	50
35	Single mode LC/PC-FC/PC patch Chord 05 mtr.	Nos.	100	50	50
36	Single mode LC/PC-FC/PC patch Chord 10 mtr.	Nos.	380	190	190
37	Single mode LC/PC-FC/PC patch Chord 15 mtr.	Nos.	176	88	88
38	Single mode LC/PC-FC/PC patch Chord 20 mtr.	Nos.	370	185	185
39	Single mode SC/PC - FC/PC patch Chord 01 mtr.	Nos.	50	25	25
40	Single mode SC/PC - FC/PC patch Chord 03 mtr.	Nos.	150	75	75
41	Single mode SC/PC - FC/PC patch Chord 05 mtr.	Nos.	150	75	75
42	Single mode SC/PC - FC/PC patch Chord - 10 mtr.	Nos.	220	110	110
43	Single mode SC/PC - FC/PC patch Chord - 15 mtr.	Nos.	220	110	110
44	Single mode SC/PC - FC/PC patch Chord - 20 mtr.	Nos.	220	110	110
45	Single mode FC/PC - FC/PC-patch Chord 01 mtr.	Nos.	50	25	25
46	Single mode FC/PC - FC/PC-patch Chord 03 mtr.	Nos.	100	50	50
47	Single mode FC/PC - FC/PC-patch Chord 05 mtr.	Nos.	110	55	55
48	Single mode FC/PC - FC/PC-patch Chord 10 mtr.	Nos.	296	148	148
49	Single mode FC/PC - FC/PC-patch Chord 20 mtr.	Nos.	200	100	100
50	Single mode SC/PC - SC/PC patch Chord - 01 mtr..	Nos.	100	50	50
51	Single mode SC/PC - SC/PC patch Chord - 03 mtr.	Nos.	150	75	75
52	Single mode SC/PC - SC/PC patch Chord - 05 mtr.	Nos.	150	75	75
53	Single mode SC/PC - SC/PC patch Chord - 10 mtr.	Nos.	270	135	135
54	Single mode SC/PC - SC/PC patch Chord - 15 mtr.	Nos.	110	55	55
55	Single mode SC/PC - SC/PC patch Chord - 20 mtr.	Nos.	100	50	50
56	LC/PC Plugin Attenuator - 1dB	Nos.	220	110	110
57	LC/PC Plugin Attenuator - 3dB	Nos.	330	165	165
58	LC/PC Plugin Attenuator - 5dB	Nos.	277	139	138
59	LC/PC Plugin Attenuator - 6dB	Nos.	100	50	50
60	LC/PC Plugin Attenuator - 8dB	Nos.	100	50	50
61	LC/PC Plugin Attenuator - 9dB	Nos.	100	50	50
62	LC/PC Plugin Attenuator - 10dB	Nos.	350	175	175
63	LC/PC Plugin Attenuator - 13dB	Nos.	100	50	50
64	LC/PC – LC/PC Adaptor	Nos.	140	70	70
65	FC/PC-FC/PC Attenuator - 3dB	Nos.	150	75	75
66	FC/PC-FC/PC Attenuator - 5dB	Nos.	200	100	100
67	FC/PC-FC/PC Attenuator - 10dB	Nos.	120	60	60
68	FC//PC -FC/PC Adaptor	Nos.	180	90	90
69	SC/PC -SC/PC Attenuator - 3dB	Nos.	100	50	50
70	SC/PC-SCPC Attenuator - 5dB	Nos.	100	50	50
71	SC/PC-SC/PC Attenuator - 10dB	Nos.	220	110	110
72	SC/PC – SCPC Adaptor	Nos.	180	90	90

**Annexure-VII****PROFORMA FOR Nil Deviation Component Compliance Undertaking  
Letter**

(TO BE SIGNED BY BIDDER)

To,  
 Group General Manager(Project),  
 Region RailTel Corporation of India Ltd.,  
 Eastern Region, 19th Floor,  
 Aurora Waterfront Building, Plot No. 34/1, Block  
 GN, Sector-V, Salt Lake City, Bidhannagar,  
 Kolkata-700091

Sub: NIL Deviation Compliance for GeM Bid No. GEM/2026/B/7319622, Dt. 05.03.2026

Dear Sir,

Over and above all our earlier conformations and submissions as per your requirements of the bid, we confirm that,

We will ensure our unconditional compliance of all the terms and conditions as mentioned in the Tender document. In case of any deviation, the same should be attached as an Annexure (as per Format given below) to this form. In case of any deviation, RailTel reserves the right to reject the bid without giving any justification.

Format of Annexure (Deviation Statement)

S. No.	Clause No. & Chapter No.	Existing Clause of Tender	Proposed Clause	Remarks, if any

All the proposed items to be supplied as per SOR for the technical specifications as mentioned in Annexure-I of Bid.

We hereby certify that the items/materials mentioned in our offer are complete.

We confirm that there is no requirement of any other hardware and software to fulfil requirements as per scope against the bid. If any additional hardware and software is required to meet in scope requirements, then it would be provided by us at no extra cost to RailTel.

Place:

Date:

Seal and signature of the bidder

(to be printed on company's letterhead)

**Self-Certification under Preference to “MAKE IN INDIA” Policy**

**DECLARATION OF LOCAL CONTENT**

No \_\_\_\_\_,

Date: \_\_\_\_\_

To,

\_\_\_\_\_

**Subject:** Declaration regarding local content

Reference : (1) DPIIT(PPE), Ministry of Commerce, GoI, notification no. P-45021/102/2019-PP(BE- II) (E-29930) dated 26.11.2020 , 4 March 2021 (and any amendment thereof)

(2) GeM Bid No. \_\_\_\_\_ dated \_\_\_\_\_

(3) Our quotation No. \_\_\_\_\_ dated \_\_\_\_\_

Dear Sir,

With reference to the above notifications of DPIIT, we hereby declare the following -

1. We are the manufacturer / we have done value addition to the product quoted vide referred quote (*bidder to select only one option*)

2. We have authorized Mr./Ms \_\_\_\_\_ (name) \_\_\_\_\_ designation \_\_\_\_\_ of our company for giving declaration regarding local content w.r.t. the referred DPIIT notification(s) and any amendment thereon. Our company owns the responsibility for the signature of above official regarding local content being declared herewith. Now onward above mentioned signatory will correspond with your department regarding local content. We understand that the local content is not claimed by us on the basis of *profit, warehousing, marketing, logistics, freight, transportation, insurance, installation, commissioning, training, after sales services, AMC/CAMC etc. as local value addition.*

3. The local content in our referred item's quote is \_\_\_\_\_% as per above notification of DPIIT.

4. We are Class (I or II) (*bidder to choose either one*) supplier as per DPIIT Notifications.

5. Local content value addition is at place \_\_\_\_\_

6. We understand that false declaration of local content %age w.r.t. above DPIIT order will be in breach of the code of integrity under rule 175(1)(i)(h) of the General Financial Rules (GFR)2017 for which the bidder or its successors can be debarred for upto two years as per Rule 151(iii) of GFR alongwith such other action as may be permissible under law.

Date:

Place:

Thanking you.

Yours faithfully

Name : \_\_\_\_\_

Signature \_\_\_\_\_

Company seal \_\_\_\_\_

## Annexure-IX

**GUIDLINES REGARDING PROVISION FOR PROCUREMENT FROM A BIDDER  
WHICH SHARES A LAND BORDER WITH INDIA**

- I. Any bidder from a country which shares a land border with India will be eligible to bid in this tender only if the bidder is registered with the Competent Authority [The Competent Authority for the purpose of registration under this Order shall be the Registration Committee constituted by the Department for Promotion of Industry and Internal Trade (DPIIT)].
- II. "Bidder" (including the term 'tenderer', 'consultant' or 'service provider' in certain contexts) means any person or firm or company, including any member of a consortium or joint venture (that is an association of several persons, or firms or companies), every artificial juridical person not falling in any of the descriptions of bidders stated hereinbefore, including any agency branch or office controlled by such person, participating in a procurement process.
- III. "Bidder from a country which shares a land border with India" for the purpose of this Order means:
- a. An entity incorporated, established or registered in such a country; or
  - b. A subsidiary of an entity incorporated, established or registered in such a country; or
  - c. An entity substantially controlled through entities incorporated, established or registered in such a country; or
  - d. An entity whose beneficial owner is situated in such a country; or
  - e. An Indian (or other) agent of such an entity; or
  - f. A natural person who is a citizen of such a country; or
  - g. A consortium or joint venture where any member of the consortium or joint venture falls under any of the above.
- IV. The beneficial owner for the purpose of (III) above will be as under:
1. In case of a company or Limited Liability Partnership, the beneficial owner is the natural person(s), who, whether acting alone or together, or through one or more juridical person, has a controlling ownership interest or who exercises control through other means. Explanation-
    - a. "Controlling ownership interest" means ownership of or entitlement to more than twenty-five per cent. of shares or capital or profits of the company;
    - b. "Control" shall include the right to appoint majority of the directors or to control the management or policy decisions including by virtue of their shareholding or management rights or share holders agreements or voting agreements;
  2. In case of a partnership firm, the beneficial owner is the natural person(s) who, whether acting alone or together, or through one or more juridical person, has ownership of entitlement to more than fifteen percent of capital or profits of the partnership;
  3. In case of an unincorporated association or body of individuals, the beneficial owner is the natural person(s), who, whether acting alone or together, or through one or more juridical person, has ownership of or entitlement to more than fifteen percent of the property or capital or profits of such association or body of individuals;
  4. Where no natural person is identified under (1) or (2) or (3) above, the beneficial owner is the relevant natural person who holds the position of senior managing official;
  5. In case of a trust, the identification of beneficial owner(s) shall include identification of the

author of the trust, the trustee, the beneficiaries with fifteen percent or more interest in the trust and any other natural person exercising ultimate effective control over the trust through a chain of control or ownership.

- V. An Agent is a person employed to do any act for another, or to represent another in dealings with third person.
- VI. The successful bidder shall not be allowed to sub-contract works to any contractor from a country which shares a land border with India unless such contractor is registered with the Competent Authority.

**Certificate to be given by the Tenderer:**

"I have read the clause regarding restrictions on procurement from a bidder of a country which shares a land border with India; I certify that I am not from such a country or, if from such a country, I have been registered with the Competent Authority. I hereby certify that I fulfill all requirements in this regard and I am eligible to be considered. [Where applicable, evidence of valid registration by the Competent Authority shall be attached.]"

**Certificate to be given by Tenderer for Works involving possibility of sub-contracting:**

"I have read the clause regarding restrictions on procurement from a bidder of a country which shares a land border with India and on sub-contracting to contractors from such countries; I certify that I am not from such a country or, if from such a country, I have been registered with the Competent Authority and will not sub-contract any work to a contractor from such countries unless such contractor is registered with the Competent Authority. I hereby certify that I fulfill all requirements in this regard and I am eligible to be considered. [Where applicable, evidence of valid registration by the Competent Authority shall be attached.]"

**OEM’S UNDERTAKING ON LETTER HEAD FOR PROVEN FACILITY, BLACKLISTING, MALICIOUS CODE, IPR & RESTRICTION ON COMPANIES FROM LAND BORDER SHARING COUNTRIES WITH INDIA**

(To be signed by the OEM)

To

Group General Manager(Project),  
RailTel Corporation of India Limited,  
19<sup>th</sup> Floor, Aurora Waterfront Building,  
Plot No.34/1, Block-GN, Sector-V,  
Salt Lake City,  
Kolkata – 700 091.

E-Tender No. GEM/2026/B/7319622 dated: 05.03. 2026

Sub: OEM undertaking

Dear Sir,

Over and above all our earlier conformations and submissions as per your requirements of the RFP, we confirm that,

A. I/We undertake/Certify that

“I/We have proven facilities at..... (Complete Address along with Pin Code) for Engineering, manufacture, assembly, integration, testing and basic facilities with respect to space, Engineering, Personnel, Test equipment, Manufacture, Training, Logistic Supports for at least past three years in the country from where the proposed equipment are planned to be supplied.”

“In case OEM is located outside India, we have training, repair and service centre facilities in India at .....(Complete Address along with Pin Code) also.”

B. I/We have not been black-listed or debarred currently by Central Govt./State Govt./CPSU in India or anywhere globally by Government for security reasons either in Individual capacity or as a member of partnership firm/LLP/JV/Society/Trust.

C. I/We Certify that,

- (i) All proposed hardware and software components in scope of supplies when shipped by \_\_\_\_\_, does not contain embedded malicious code that would activate procedures to: -
- a. Inhibit the desired and designed function of the equipment.
  - b. Cause physical damage to the user or equipment during the exploitation.
  - c. Tap information resident or transient in the equipment/networks.

- (ii) I/We, \_\_\_\_\_ will be considered to be in breach in case physical damage or malfunctioning is caused due to activation of any such malicious code in embedded software and thus be liable to repair, replace or refund the price of the infected software if reported (or, upon request, return) to the

party supplying the software to Customer, if different than \_\_\_\_

- (iii) Security breach or damages to system, if any, so caused by any embedded malicious code or otherwise, due to the act of either OEM or bidder or both, the OEM as well as the bidder would be considered liable jointly or severally and shall be banned for conducting any business with RailTel. Also the present contract, may liable to be terminated by the purchaser.

D. I/We have read the clause regarding restrictions on procurement from a OEMs of a country which shares a land border with India; I certify that I/We is/are not from such a country or, if from such a country, has been registered with the Competent Authority, I/We hereby certify that I/We fulfils all requirements in this regard and is eligible to be considered.

E. Offered Hardware and Software (Switches, Firewall, Router, Access Point, SFP's, AC to DC converter and DC to AC converter) are having End of Life (EOL) not less than years from the date of Supply as prescribed in Annexure - I i.e., SOR item Nos.1-17, \_\_\_for not less than \_\_\_years & Item No. \_\_\_for not less than \_\_\_years.

Place: Seal and signature of the authorized representative of  
Date: OEM Name and Designation of the authorized representative of OEM

**Check list**

<b>SN</b>	<b>Have you submitted the following documents?</b>	<b>Submitted/ Complied or not</b>	<b>Page No/ ref no. of Offer</b>
1	Proof of payment of EMD as per Clause-7 of ITB/ Documentary proof of exemption of EMD		
2	Clause-wise compliance along with all mentioned documents/Annexures for all clauses of GeM Bid and ATC documents as per clause no. 15(iii)		
3	Datasheet of the offered equipments as per clause-15(iv)		
4	Financial (Certified copies of audited balance sheets/annual reports of last three preceding financial years) and Technical Eligibility Criteria documents. As per clause 10 of ITB.		
5	Technical compliance of all specifications of items as per GM Bid and ATC documents as per clause no. 15(vi)		
6	OEMs declaration should have end of life as per Annexure-1, Annexure-X		
7	MAF/OEM Authorisation as per clause 10.5(ii) and clause 15(ix) of ITB		
8	Notarized Affidavit on non-judicial stamp paper as per Annexure-III of ITB		
9	Undertaking as per Annexure-X and certificate as per Annexure- IX as per clause no. 20		
10	NIL deviation declarations as per Annexure- VII		
11	Notarized Power of Attorney & resolution of Board of Directors as per Clause-19 of ITB.		
12	Signed Copy of GeM Bid & ATC/ Corrigendum (if Applicable)		
13	Bid Security Declaration as per Annexure-V (Applicable in case of claim of exemption from submission of EMD)		
14	Certificate of Local Content as per Annexure-VIII of ITB		
15	Offline Documents in original (Notarized Power of Attorney, Notarized Affidavit and Bid Security Declaration)		

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