

## **Information to Bidder for the “Supply of Switches”**

**Ref: GeM Bid No. GEM/2020/B/915999 Dated 22.12.2020**

1. The item/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 on website [www.railtelindia.com](http://www.railtelindia.com)*

2. 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.

3. OEM or Authorized distributor/Partner of OEM should have a registered office in India to provide sales and 24x7 support in India. The certificate to this effect should be submitted. The bidder should be either OEM or his authorized dealer/distributor.

In case of the authorized distributor/partner certificate from the OEM to this effect should be submitted. If OEM is quoting then OEM should submit the certificate.

4. Equipment offered shall have complete data sheets and detailed description on OEM web sites.

5. Bidder shall submit the detailed BOM of the equipment offered duly verified and certified by the respective OEM.

6. GSTIN ID of vendor should be provided from where goods will be supplied.

7. **Tender Cost & Earnest Money Deposit (EMD)/ Bid Security:**

7.1 **Tender Cost:** Estimated cost of the Tender is **Rs. 3719618/-**

7.2 **Earnest Money Deposit (EMD)/ Bid Security: Rs. 74392/-** with Payment online through RTGS / internet banking in Beneficiary name RailTel Corporation of India Limited Account No. 11037321307, IFSC Code SBIN0001821, Bank Name: State Bank of India, Branch address: Churchgate Branch, Mahatma Jyotiba Phule Marg, Mumbai- 400 020. The Bid received without EMD will be summarily rejected.

### **8. Eligibility Criteria for OEM:**

- a. The Equipment offered by the OEM or equipment of the same series/family from the same OEM should have been satisfactorily working in Government/PSUs/Telecom Service Providers network for at least 12 months as on opening of bid, in India or Abroad. The certificates from the actual users will have to be submitted online.
- b. The OEM should have supplied at least 35% of the tendered value of the equipment offered or equipment of the same series/family during last preceding 3 financial years (i.e. current year and three previous financial years) as on opening of bid to Government/PSUs/Telecom Service Providers. OEM should submit self-certificate with proper contact detail of clients along with quantities supplied (Firm Name, Contact person, Designation, Telephone Number, Fax, Official mail id etc.). The same should

be issued by authorized signatory. *(Not required. However, bidder is required to submit the certificate to this effect from OEM along with the bid)*

- c. The OEM should have proven facilities for Engineering, manufacture, assembly, integration and testing of **Switches** and basic facilities with respect to space, Engineering, Personnel, Test equipment, Manufacture, Training, Repair, Service Center 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, it should have training repair and service center facilities in India also. The certificates/Undertaking for the same will have to be submitted offline.

(The bidder will have to submit the proof of establishment for the facility)

## 9. Eligibility Criteria for Bidder:

- a. The tenderer should have executed order of supply/ provision of Telecom equipment like **Switches** during last preceding 3 financial years (i.e. current year and three previous financial years) as on opening of bid, as per following:

(A) Single order of at least 35% of tendered value.

OR

(B) Two orders of at least 20% each of tendered value.

OR

(C) Three orders of at least 15% each of tendered value.

Satisfactory Performance certificate issued by customer/s for the Purchase Orders/ Work Orders should be enclosed.

- b. The bidder should have minimum cumulative turnover of 150% of tendered value or above during the last 3 financial years (i.e. current year plus three previous financial years). The bidder should provide Audited Balance Sheets / annual reports as documentary evidence and for current year, the statutory Auditor's certificate for turnover of current year up to the date of bid opening for which Balance Sheet may not be available. In case of photocopy of Balance Sheet the same should be certified by Chartered Accountant as true copy.
- c. Bidder should have authorization specific to this tender from respective OEM as per Annex-II.

## 10. SLA:

After having been notified of the defects / service requirement during warrantee period, Seller has to complete the required Service / Rectification within time limit of max. 7 days. If the Seller fails to complete service / rectification within defined time limit, a penalty of 0.5% of Unit Price of the product shall be charged as penalty for each week of delay from the seller & up to max. of 100% of Unit Price of the product.

Seller can deposit the penalty with the Buyer directly else the Buyer shall have a right to recover all such penalty amount from the Performance Security (PBG) or from the running bills.

## **11. Long Term Maintenance Support : DELETED**

### **12. Payment Conditions:-**

- i. 100% payment against full supply OR Supply, Installation & Commissioning as the case may be.
- ii. 80% payment against part supply OR Supply , Installation & Commissioning of the completed part as the case may be. In case bidder completes the supply order or order for supply , installation and commissioning as the case may be, for one Region , he can claim part payment of 80% against each Region's completed supply / completed installation & Commissioning of the said Region. Balance payment shall be made after full supply or full installation & commissioning. The following documents are to be submitted for payment:
  - a. Original Invoice
  - b. Delivery Challan
  - c. Original Consignee receipt with GRN No.
  - d. Original Inspection Certificate
  - e. Insurance Certificate.
  - f. Warranty Certificate of OEM
  - g. Copy of BG
  - h. Certificate of receipt of Goods & installation thereof from RailTel.
  - i. Bill Passing Authority: GGM/Project and Operation
  - j. Bill Paying Authority :JGM/Finance

### **13. On line Submissions:**

The bidder is required to upload and submit the following documents online before due date & time of bid. The due date & time for closing of the bid is **18:00 Hrs of 01.01.2021** and the bid will be opened at **18:30 Hrs of 01.01.2021**.

- i. EMD
- ii. BOQ of offered equipment.
- iii. Clause wise compliance along with all mentioned documents/annexures for all clauses of GeM Bid and ATC documents.
- iv. Data Sheet of offered 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 GeM Bid and ATC documents.
- vii. Certificate from the End user against the Eligibility criteria for OEM para 8.
- viii. Proof of document required against Eligibility criteria of OEM and Bidder vide para 8 & 9 respectively.
- ix. MAF/OEM Authorization as per Annexure-II.

**Note:**

- 1 Non submission of any document online within the prescribed time will make the bid to be summarily rejected
- 2 The bidder has to indicate bid number and name of bidding entity in the transaction details field at the time of on-line transfer. Bidder has to upload scanned copy / proof of the Online Payment Transfer along with bid..
- 3 The bidder is required to give acceptance of all the clauses mentioned in the **“Information to the Bidders”** document is mandatory. Any deviation / non-acceptance may lead to rejection of the bid.
- 4 Information to Bidder viz. corrigendum /addendum/ amendments etc. for this bid shall be posted on [www.railtelindia.com](http://www.railtelindia.com) only.
- 5 This bid is governed by the Specific Additional Terms & Conditions and General Terms & Conditions laid down by the GeM against **GeM Bid No. GEM/2020/B/915999 Dated 22.12.2020** and “Information to the Bidders” document. If any contradiction between these two documents conditions in **“Information to the Bidders”** document will prevail.

**14. Delivery Period: 30** days from the date of PO.

**15. Security Deposit /Performance Bank Guarantee :**

- i. The successful bidder shall submit the Performance Guarantee (PG) in the form of FDR or online transfer or irrevocable Bank Guarantee, amounting to 10% of the contract value and should be valid for the period of 02 month beyond warranty periods. On Expiry of the warranty period and issue of the certificate of Final acceptance of the entire system the performance bank guarantee will be refund or Bank Guarantee released to the contractor after adjustment of any dues payable by the contractor. No other format of PBG will be accepted expect schedule PBG as Annexure -III.
- ii. The successful bidder shall have to submit a Performance Bank Guarantee (PBG) within 15 (Fifteen) days from the date of issue of Letter of Acceptance (LOA). Extension of time for submission of PBG beyond 15 (Fifteen) days and up to 30 days from the date of issue of LOA may be given by the authority who is competent to sign the contract agreement. However, a penal interest of 15% per annum shall be charged for the delay beyond 15 (fifteen) days, i.e. from 16<sup>th</sup> day after the date of issue of LOA. In case the contractor fails to submit the requisite PBG even after 30 days from the date of issue of LOA, the contract shall be terminated duly forfeiting EMD and other dues, if any, payable against that contract. The failed contractor shall be debarred from participating in re-tender for that work.
- iii. A separate advise 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 advise of BG through SFMS to the RailTel’s Bank.

- Note:**
- (i) Any performance security up to a value of Rs. 5 Lakhs is to be submitted through online transfer only.
  - (ii) In case of submission of Security Performance in form of FDR then lien should be created in favor of “RailTel Corporation of India Ltd”.

- (iii) After Submission of PBG and confirmation from Bank EMD amount will be refund to bidder .

No interest shall be paid on the amount of earnest money and Performance Security held by RailTel, at any stage.

**16. Inspection:** Post Receipt Inspection at consignee site before acceptance of stores:  
by nominated executive.

**17. Quantity Variation Clause:** 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 reserves 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.

**Technical Specifications**

1. All Equipment should be :

- i. With 3 years warranty. The product should not be declared EOL or EoS by OEM for next 7 Years.
- ii. Equipped with necessary hardware/software to comply all above required / support features.
- iii. 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.
- iv. OEM should have its Service Centre at min 04 locations in major cities in India. Service centre details to be shared along with address and contact no. and person.
- v. 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.

2. SOR wise details are as:

| SOR              | Item Description                                                                                                                                                               | Units | Qty |
|------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------|-----|
| <b>Switches:</b> |                                                                                                                                                                                |       |     |
| SOR-1            | Supply of Metro Ethernet Switches L2 Managed with 24 Ports 10/100/1000 Base-T & 2 ports SFP & 2 ports SFP + as per Technical specifications of SOR-1 of Information to Bidder. | Nos.  | 10  |
| SOR-2            | Supply of Access Switches L2 Managed with 24 ports 8x10/100/1000 Base-T & 4 ports SFP DC type as per Technical specifications of SOR-3 of Information to Bidder.               | Nos.  | 29  |
| SOR-3            | Supply of Switches L2 Managed with 24 ports 8x10/100/1000 Base-T & 4 ports SFP AC type as per Technical specifications of SOR-3 of Information to Bidder.                      | Nos.  | 171 |
| SOR -4           | Supply of Switch L2 Managed with 8x10/100/1000 Base-T Mbps (POE) & 2 Ports SFP (Type B), AC type as per Technical specifications of SOR-4 of Information to Bidder.            | Nos.  | 45  |
| SOR-5            | Supply of Switches L2 Managed with 24 ports SFP & 4 ports SFP+ (Type C) AC & DC as per Technical specifications of SOR-5 of Information to Bidder.                             | Nos.  | 15  |

**SOR-1: Supply of Metro Ethernet Switches L2 Managed with 24 Ports 10/100/1000 Base-T & 2 ports SFP & 2 ports SFP +**

| SN | Description                                                                                                                                                                                                                                                                                                                    |
|----|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 1  | Should have 24 ports 10/100/1000 Base-Tx                                                                                                                                                                                                                                                                                       |
| 2  | i) Should have support for 2 ports SFP Based Gigabit ports.<br>ii) Should have support for 2 ports SFP+ Based 10 Gigabit ports.                                                                                                                                                                                                |
| 3  | Should have at least 120 Gbps switching fabric.                                                                                                                                                                                                                                                                                |
| 4  | Packet forwarding rates 90 Mpps                                                                                                                                                                                                                                                                                                |
| 5  | Should support at least 16K entries in the MAC table.                                                                                                                                                                                                                                                                          |
| 6  | Should Support 255 minimum VLANs.                                                                                                                                                                                                                                                                                              |
| 7  | Should have DC power supply arrangement as given below in chassis without any external adaptors :<br>-48V DC supply<br>RailTel will specify the requirement of power supply arrangement AC or DC at the time of sub purchase order. In case not specified, tenderer should seek clarification on the power supply arrangement. |
| 8  | Should support Dual Images.                                                                                                                                                                                                                                                                                                    |
| 9  | Should support Optical Transceiver Digital Diagnostic Monitoring for All SFP ports of 1G and 10G.                                                                                                                                                                                                                              |
| 10 | Should support port mirroring and jumbo frame 9k.                                                                                                                                                                                                                                                                              |
| 11 | Should support following for min. 64 Groups :<br>i) IGMP Snooping,<br>ii) IGMP v1/v2/v3 awareness Snooping,<br>iii) IGMP Snooping Queried.                                                                                                                                                                                     |
| 12 | Should support spanning-tree root guard, Port Fast and BPDU Guard/Filter or similar functionalities.                                                                                                                                                                                                                           |
| 13 | Should support following security features viz.:<br>i) Web Management (HTTPS),<br>ii) Broadcast/Multicast/Unicast Storm Control,<br>iii) DoS Attack Prevention                                                                                                                                                                 |
| 14 | Switch should support following SNMP traps or syslog<br>i) Interface UP & Down<br>ii) Optical power SFP threshold alarms<br>iii) STP Topology Changes and New root bridge<br>iv) LLDP table changes<br>v) Threshold alarms for Temperature.<br>vi) Ethernet OAM SNMP alarms.                                                   |
| 15 | Switch should comply to following Temperature performance parameters :<br>i) Operating Temperature - min -0 to 50 °C (23 to 122 °F)<br>ii) Storage Temperature - min -0 to 70 °C (-40 to 158 °F)                                                                                                                               |
| 16 | It shall support MAC address notification to allow administrators to be notified of users added to or removed from the network.                                                                                                                                                                                                |
| 17 | The switch shall be designed for continuous operations.                                                                                                                                                                                                                                                                        |

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| 18 | IPv6/v4-L3 and IPv6-Multicast functionalities/features for Switches are desired but not mandatory.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
| 19 | <b>Safety Requirement :-</b><br>Switch should have safety compliance of UL.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |
| 20 | <b>Electromagnetic Compatibility (EMC) Requirements:-</b><br>Switch should have EMC compliance of CE and FCC.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
| 21 | The LAN switch shall support a console port or auxiliary/Ethernet port for the purpose of local and remote configuration and diagnostics.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |
| 22 | The LAN switch shall support built in power diagnostics system to detect hardware failures.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |
| 23 | IPv6 feature should be ready from day 1.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
| 24 | <b>Qualitative Requirements:-</b><br><b>i.</b> The equipment shall be manufactured in accordance with the international standards ISO 9000:2008 or later for which the manufacturer shall be duly accredited. A quality plan describing the quality assurance system followed by the manufacturer shall be required to be submitted<br><b>ii.</b> The MTBF (Mean Time Between Failure) and MTTR (Mean Time To Repair) predicted and observed values shall be furnished along with calculations by the manufacturer.                                                                                                                       |
| 25 | <b>Switch should support following Metro Ethernet Features:</b><br><b>i.</b> Q in Q , Double VLAN (Q-in-Q) ,Port-based Q-in-Q and VLAN Translation<br><b>ii.</b> IEEE 802.1ag Ethernet OAM: Connectivity Fault Management<br><b>iii.</b> Ethernet OAM compliant with IEEE 802.3ah/Y.1731<br><b>iv.</b> ITU-T G.8032 Ethernet Ring Protection designed for loop protection and fast convergence times (sub 50 ms) in ring topologies.<br><b>v.</b> L2 Protocol Tunneling.<br><b>vi.</b> Loopback Detection<br>The operating system of the Switches category/series/family should be MEF-9/14 or CE (Carrier Ethernet) Certified/compliant. |
|    | <b>Note:</b> 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-2: Supply of Access Switches L2 Managed with 24 ports 8x10/100/1000 Base-T & 4 ports SFP DC type**

| SN | Description                                                                                                                                                                                                                                                                                                                           |
|----|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 1  | Should have 24 ports 10/100/1000 Base-Tx                                                                                                                                                                                                                                                                                              |
| 2  | Should have support for 4 ports SFP Based Gigabit ports.                                                                                                                                                                                                                                                                              |
| 3  | Should have at least 48 Gbps switching fabric.                                                                                                                                                                                                                                                                                        |
| 4  | Packet forwarding rates 30 million PPS                                                                                                                                                                                                                                                                                                |
| 5  | Should support at least 16K entries in the MAC table.                                                                                                                                                                                                                                                                                 |
| 6  | Should Support 255 minimum VLANs.                                                                                                                                                                                                                                                                                                     |
| 7  | Should have DC power supply arrangement as given below in chassis without any external adaptors :<br>-48 V DC Power Supply<br>RailTel will specify the requirement of power supply arrangement AC or DC at the time of sub purchase order. In case not specified, tenderer should seek clarification on the power supply arrangement. |
| 8  | Should support Dual Images.                                                                                                                                                                                                                                                                                                           |
| 9  | Should support Optical Transceiver Digital Diagnostic Monitoring for All SFP ports of 1G.                                                                                                                                                                                                                                             |
| 10 | Should support port mirroring and jumbo frame 9k.                                                                                                                                                                                                                                                                                     |
| 11 | Should support following for min. 64 Groups :<br>i) IGMP Snooping,<br>ii) IGMP v1/v2/v3 awareness Snooping,<br>iii) IGMP Snooping Queried.                                                                                                                                                                                            |
| 12 | Should support spanning-tree root guard, Port Fast and BPDU Guard/Filter or similar functionalities.                                                                                                                                                                                                                                  |
| 13 | Should support following security features viz.:<br>i) Web Management (HTTPS),<br>ii) Broadcast/Multicast/Unicast Storm Control,<br>iii) DoS Attack Prevention                                                                                                                                                                        |
| 14 | Switch should support following SNMP traps or syslog<br>i) Interface UP & Down<br>ii) Optical power SFP threshold alarms<br>iii) STP Topology Changes and New root bridge<br>iv) LLDP table changes<br>v) Threshold alarms for Temperature.<br>vi) Ethernet OAM SNMP alarms.                                                          |
| 15 | Switch should comply to following Temperature performance parameters :<br>i) Operating Temperature - min -0 to 50 °C (23 to 122 °F)<br>ii) Storage Temperature - min -0 to 70 °C (-40 to 158 °F)                                                                                                                                      |
| 16 | It shall support MAC address notification to allow administrators to be notified of users added to or removed from the network.                                                                                                                                                                                                       |
| 17 | The switch shall be designed for continuous operations.                                                                                                                                                                                                                                                                               |

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|----|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 18 | IPv6/v4-L3 and IPv6-Multicast functionalities/features for Switches are desired but not mandatory.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
| 19 | <b>Safety Requirement :-</b><br>Switch should have safety compliance of UL.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |
| 20 | <b>Electromagnetic Compatibility (EMC) Requirements:-</b><br>Switch should have EMC compliance of CE and FCC.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
| 21 | The LAN switch shall support a console port or auxiliary/Ethernet port for the purpose of local and remote configuration and diagnostics.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |
| 22 | The LAN switch shall support built in power diagnostics system to detect hardware failures.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |
| 23 | IPv6 feature should be ready from day 1.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
| 24 | <b>Qualitative Requirements:-</b><br><b>i.</b> The equipment shall be manufactured in accordance with the international standards ISO 9000:2008 or later for which the manufacturer shall be duly accredited. A quality plan describing the quality assurance system followed by the manufacturer shall be required to be submitted<br><b>ii.</b> The MTBF (Mean Time Between Failure) and MTTR (Mean Time To Repair) predicted and observed values shall be furnished along with calculations by the manufacturer.                                                                                                                       |
| 25 | <b>Switch should support following Metro Ethernet Features:</b><br><b>i.</b> Q in Q , Double VLAN (Q-in-Q) ,Port-based Q-in-Q and VLAN Translation<br><b>ii.</b> IEEE 802.1ag Ethernet OAM: Connectivity Fault Management<br><b>iii.</b> Ethernet OAM compliant with IEEE 802.3ah/Y.1731<br><b>iv.</b> ITU-T G.8032 Ethernet Ring Protection designed for loop protection and fast convergence times (sub 50 ms) in ring topologies.<br><b>v.</b> L2 Protocol Tunneling.<br><b>vi.</b> Loopback Detection<br>The operating system of the Switches category/series/family should be MEF-9/14 or CE (Carrier Ethernet) Certified/compliant. |
|    | <b>Note:</b> 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-3: Supply of Switches L2 Managed with 24 ports 8x10/100/1000 Base-T & 4 ports SFP AC type**

| SN | Description                                                                                                                                                                                                                                                                                                                                                      |
|----|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 1  | Should have 24 ports 10/100/1000 Base-Tx                                                                                                                                                                                                                                                                                                                         |
| 2  | Should have support for 4 ports SFP Based Gigabit ports.                                                                                                                                                                                                                                                                                                         |
| 3  | Should have at least 48 Gbps switching fabric.                                                                                                                                                                                                                                                                                                                   |
| 4  | Packet forwarding rates 30 million PPS                                                                                                                                                                                                                                                                                                                           |
| 5  | Should support at least 16K entries in the MAC table.                                                                                                                                                                                                                                                                                                            |
| 6  | Should Support 255 minimum VLANs.                                                                                                                                                                                                                                                                                                                                |
| 7  | Should have AC power supply arrangement as given below in chassis without any external adaptors :<br>AC Power Supply 100 to 240 V AC with 50 to 60 Hz<br>Railtel will specify the requirement of power supply arrangement AC or DC at the time of sub purchase order. In case not specified, tenderer should seek clarification on the power supply arrangement. |
| 8  | Should support Dual Images.                                                                                                                                                                                                                                                                                                                                      |
| 9  | Should support Optical Transceiver Digital Diagnostic Monitoring for All SFP ports of 1G.                                                                                                                                                                                                                                                                        |
| 10 | Should support port mirroring and jumbo frame 9k.                                                                                                                                                                                                                                                                                                                |
| 11 | Should support following for min. 64 Groups :<br>i) IGMP Snooping,<br>ii) IGMP v1/v2/v3 awareness Snooping,<br>iii) IGMP Snooping Queried.                                                                                                                                                                                                                       |
| 12 | Should support spanning-tree root guard, Port Fast and BPDU Guard/Filter or similar functionalities.                                                                                                                                                                                                                                                             |
| 13 | Should support following security features viz.:<br>i) Web Management (HTTPS),<br>ii) Broadcast/Multicast/Unicast Storm Control,<br>iii) DoS Attack Prevention                                                                                                                                                                                                   |
| 14 | Switch should support following SNMP traps or syslog<br>i) Interface UP & Down<br>ii) Optical power SFP threshold alarms<br>iii) STP Topology Changes and New root bridge<br>iv) LLDP table changes<br>v) Threshold alarms for Temperature.<br>vi) Ethernet OAM SNMP alarms.                                                                                     |
| 15 | Switch should comply to following Temperature performance parameters :<br>i) Operating Temperature - min -0 to 50 °C (23 to 122 °F)<br>ii) Storage Temperature - min -0 to 70 °C (-40 to 158 °F)                                                                                                                                                                 |
| 16 | It shall support MAC address notification to allow administrators to be notified of users added to or removed from the network.                                                                                                                                                                                                                                  |
| 17 | The switch shall be designed for continuous operations.                                                                                                                                                                                                                                                                                                          |

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|----|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 18 | IPv6/v4-L3 and IPv6-Multicast functionalities/features for Switches are desired but not mandatory.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
| 19 | <b>Safety Requirement :-</b><br>Switch should have safety compliance of UL.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |
| 20 | <b>Electromagnetic Compatibility (EMC) Requirements:-</b><br>Switch should have EMC compliance of CE and FCC.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
| 21 | The LAN switch shall support a console port or auxiliary/Ethernet port for the purpose of local and remote configuration and diagnostics.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |
| 22 | The LAN switch shall support built in power diagnostics system to detect hardware failures.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |
| 23 | IPv6 feature should be ready from day 1.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
| 24 | <b>Qualitative Requirements:-</b><br><b>i.</b> The equipment shall be manufactured in accordance with the international standards ISO 9000:2008 or later for which the manufacturer shall be duly accredited. A quality plan describing the quality assurance system followed by the manufacturer shall be required to be submitted<br><b>ii.</b> The MTBF (Mean Time Between Failure) and MTTR (Mean Time To Repair) predicted and observed values shall be furnished along with calculations by the manufacturer.                                                                                                                       |
| 25 | <b>Switch should support following Metro Ethernet Features:</b><br><b>i.</b> Q in Q , Double VLAN (Q-in-Q) ,Port-based Q-in-Q and VLAN Translation<br><b>ii.</b> IEEE 802.1ag Ethernet OAM: Connectivity Fault Management<br><b>iii.</b> Ethernet OAM compliant with IEEE 802.3ah/Y.1731<br><b>iv.</b> ITU-T G.8032 Ethernet Ring Protection designed for loop protection and fast convergence times (sub 50 ms) in ring topologies.<br><b>v.</b> L2 Protocol Tunneling.<br><b>vi.</b> Loopback Detection<br>The operating system of the Switches category/series/family should be MEF-9/14 or CE (Carrier Ethernet) Certified/compliant. |
|    | <b>Note:</b> 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: Supply of Switch L2 Managed with 8x10/100/1000 Base-T Mbps (POE) & 2 Ports SFP (Type B), AC type**

| S.N. | Description                                                                                                                     |
|------|---------------------------------------------------------------------------------------------------------------------------------|
| 1    | Should have 8 ports 10/100/1000 Mbps Base T                                                                                     |
| 2    | Should have support for 2 ports SFP Based Gigabit ports.                                                                        |
| 3    | Should have at least 20 Gbps switching fabric.                                                                                  |
| 4    | Should support at least 8Kentries in the MAC table.                                                                             |
| 5    | Packet forwarding rates 14 million PPS                                                                                          |
| 6    | Should Support 255 minimum VLANs.                                                                                               |
| 7    | Switch should support IEEE 802.3af & IEEE 802.3at on Ethernet ports & Min 120W PoE Power Budget                                 |
| 8    | Should have AC Power Supply 100 to 240 V AC with 50 to 60 Hz and equipped with 3 pin plug.                                      |
| 9    | Should support Dual Images.                                                                                                     |
| 10   | Should support port mirroring and jumbo frame.                                                                                  |
| 11   | Should support following for min. 64 Groups :                                                                                   |
|      | i) IGMP Snooping,                                                                                                               |
|      | ii) IGMP v1/v2/v3 awareness Snooping,                                                                                           |
|      | iii) IGMP Snooping Queried.                                                                                                     |
| 12   | Should support RSTP, spanning-tree root guard, Port Fast and BPDU Guard/Filter or similar functionalities.                      |
| 13   | Switch should support :                                                                                                         |
|      | i) Surge protection of $\pm 2$ kV (line-earth) and $\pm 1$ kW (line-line) on power                                              |
|      | ii) Surge protection of $\pm 4$ kV on Ethernet ports and this will be applicable in case switch has copper ports.               |
| 14   | Should support following security features viz.:                                                                                |
|      | i) Web Management (HTTPS),                                                                                                      |
|      | ii) Broadcast/Multicast/Unicast Storm Control,                                                                                  |
|      | iii) DoS Attack Prevention                                                                                                      |
| 15   | Switch should support following SNMP traps or Syslog                                                                            |
|      | i) Interface UP & Down                                                                                                          |
|      | ii) Optical power SFP threshold alarms                                                                                          |
|      | iii) STP Topology Changes and New root bridge                                                                                   |
|      | iv) LLDP table changes                                                                                                          |
|      | v) Threshold alarms for Temperature.                                                                                            |
| 16   | Switch should comply to following Temperature performance parameters :                                                          |
|      | i) Operating Temperature - min -0 to 50 °C (23 to 122 °F)                                                                       |
|      | ii) Storage Temperature - min -0 to 70 °C (-40 to 158 °F)                                                                       |
| 17   | It shall support MAC address notification to allow administrators to be notified of users added to or removed from the network. |
| 18   | The switch shall be designed for continuous operations.                                                                         |
| 19   | IPv6/v4-L3 and IPv6-Multicast functionalities/features for Switches are desired but not mandatory.                              |

|    |                                                                                                                                                                                                                                                                                         |
|----|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 20 | <b>Safety Requirement :-</b>                                                                                                                                                                                                                                                            |
|    | Switch should have safety compliance of UL.                                                                                                                                                                                                                                             |
| 21 | <b>Electromagnetic Compatibility (EMC) Requirements:-</b>                                                                                                                                                                                                                               |
|    | Switch should have EMC compliance of CE and FCC.                                                                                                                                                                                                                                        |
| 22 | The LAN switch shall support a console port or auxiliary/Ethernet port for the purpose of local and remote configuration and diagnostics.                                                                                                                                               |
| 23 | IPv6 feature should be ready from day 1.                                                                                                                                                                                                                                                |
| 24 | <b>Qualitative Requirements:-</b>                                                                                                                                                                                                                                                       |
|    | i. The equipment shall be manufactured in accordance with the international standards ISO 9000:2008 or later for which the manufacturer shall be duly accredited. A quality plan describing the quality assurance system followed by the manufacturer shall be required to be submitted |
|    | ii. The MTBF (Mean Time Between Failure) and MTTR (Mean Time To Repair) predicted and observed values shall be furnished along with calculations by the manufacturer.                                                                                                                   |

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-5: Supply of Switches L2 Managed with 24 ports SFP & 4 ports SFP+ (Type C) AC & DC**

| S.N. | Description                                                                                                                     |
|------|---------------------------------------------------------------------------------------------------------------------------------|
| 1    | Should have 24 ports SFP Based Gigabit ports.                                                                                   |
| 2    | Should have support for 4 ports SFP+ Based Gigabit ports.                                                                       |
| 3    | Should have at least 120 Gbps switching fabric                                                                                  |
| 4    | Packet forwarding rates 90 million PPS                                                                                          |
| 5    | Should support at least 16K entries in the MAC table.                                                                           |
| 6    | Should Support 255 minimum VLANs.                                                                                               |
| 7    | Should support MTU size of 9216 bytes.                                                                                          |
| 8    | Should have AC and DC power supply arrangement as given below in chassis without any external adaptors :                        |
|      | i) AC Power Supply 100 to 240 V AC with 50 to 60 Hz                                                                             |
|      | ii) -48V DC supply                                                                                                              |
|      | DC power supply should work as a redundant power supply to power-on the switch in case failure of AC power supply.              |
| 9    | Should support Dual Images.                                                                                                     |
| 10   | Should support Optical Transceiver Digital Diagnostic Monitoring for all SFP ports of 1G and 10G                                |
| 11   | Should support port mirroring and jumbo frame.                                                                                  |
| 12   | Should support following for min. 64 Groups :                                                                                   |
|      | i) IGMP Snooping,                                                                                                               |
|      | ii) IGMP v1/v2/v3 awareness Snooping,                                                                                           |
|      | iii) IGMP Snooping Queried.                                                                                                     |
| 13   | Should support RSTP, MSTP , spanning-tree root guard, Port Fast and BPDU Guard/Filter or similar functionalities.               |
| 14   | Should support following security features viz.:                                                                                |
|      | i) Web Management (HTTPS),                                                                                                      |
|      | ii) Broadcast/Multicast/Unicast Storm Control,                                                                                  |
|      | iii) DoS Attack Prevention                                                                                                      |
| 15   | Switch should support following SNMP traps or syslog                                                                            |
|      | i) Interface UP & Down                                                                                                          |
|      | ii) Optical power SFP threshold alarms                                                                                          |
|      | iii) STP Topology Changes and New root bridge                                                                                   |
|      | iv) LLDP table changes                                                                                                          |
|      | v) Threshold alarms for Temperature.                                                                                            |
|      | vi) Ethernet OAM SNMP alarms.                                                                                                   |
| 16   | Switch should comply to following Temperature performance parameters :                                                          |
|      | i) Operating Temperature - min -0 to 50 °C (23 to 122 °F)                                                                       |
|      | ii) Storage Temperature - min -0 to 70 °C (-40 to 158 °F)                                                                       |
| 17   | It shall support MAC address notification to allow administrators to be notified of users added to or removed from the network. |
| 18   | The switch shall be designed for continuous operations.                                                                         |
| 19   | IPv6/v4-L3 and IPv6-Multicast functionalities/features for Switches are desired but not mandatory.                              |

|    |                                                                                                                                                                                                                                                                                                |
|----|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 20 | <b>Safety Requirement :-</b>                                                                                                                                                                                                                                                                   |
|    | Switch should have safety compliance of UL.                                                                                                                                                                                                                                                    |
| 21 | <b>Electromagnetic Compatibility (EMC) Requirements:-</b>                                                                                                                                                                                                                                      |
|    | Switch should have EMC compliance of CE and FCC.                                                                                                                                                                                                                                               |
| 22 | The LAN switch shall support a console port or auxiliary/Ethernet port for the purpose of local and remote configuration and diagnostics.                                                                                                                                                      |
| 23 | The LAN switch shall support built in power diagnostics system to detect hardware failures.                                                                                                                                                                                                    |
| 24 | IPv6 feature should be ready from day 1.                                                                                                                                                                                                                                                       |
|    | <b>Qualitative Requirements:-</b>                                                                                                                                                                                                                                                              |
| 25 | <b>i.</b> The equipment shall be manufactured in accordance with the international standards ISO 9000:2008 or later for which the manufacturer shall be duly accredited. A quality plan describing the quality assurance system followed by the manufacturer shall be required to be submitted |
|    | <b>ii.</b> The MTBF (Mean Time Between Failure) and MTTR (Mean Time To Repair) predicted and observed values shall be furnished along with calculations by the manufacturer.                                                                                                                   |
|    | <b>Switch should support following Metro Ethernet Features:</b>                                                                                                                                                                                                                                |
| 26 | i. Q in Q , Double VLAN (Q-in-Q) ,Port-based Q-in-Q and VLAN Translation                                                                                                                                                                                                                       |
|    | ii. IEEE 802.1ag Ethernet OAM: Connectivity Fault Management                                                                                                                                                                                                                                   |
|    | iii. Ethernet OAM compliant with IEEE 802.3ah/Y.1731                                                                                                                                                                                                                                           |
|    | iv. ITU-T G.8032 Ethernet Ring Protection designed for loop protection and fast convergence times (sub 50 ms) in ring topologies.                                                                                                                                                              |
|    | v. L2 Protocol Tunneling.                                                                                                                                                                                                                                                                      |
|    | vi. Loopback Detection                                                                                                                                                                                                                                                                         |
|    | The operating system of the Switches category/series/family should be MEF-9/14 or CE (Carrier Ethernet) Certified/compliant.                                                                                                                                                                   |

**Regional General Manager,  
RailTel Corporation of India Ltd.**

**Dated: .....**

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

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

**.....**

**Ref: GeM Bid No. GEM/2020/B/915999 dated: 22.12.2020**

Dear Sir,

We, M/s....., are established and reputed manufacturer and service provider of  
.....(Product 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 the supply and Installation  
& Commissioning of our range of products against your above said bid.

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

Thanking you,  
Best regards,

**Authorised Signatory**

**Guarantee Bond for Performance Guarantee (On  
Stamp Paper of requisite value)  
(To be used by approved Scheduled Banks)**

1. In consideration of the RailTel Corporation of India Limited, Registered office at RailTel Corporation of India Limited, Plate-A, 6th Floor, Office Block Tower-2, East Kidwai Nagar, New Delhi – 110023 and Regional office at RailTel Corporation of India Ltd, Mahalaxmi Railway Microwave Compound, Senapati Bapat Marg, Mahalaxmi- Mumbai- 400 013 (hereinafter called “the RailTel”) having agreed to exempt ..... **(Name and address of the Company/ Contractor both Registered and Regional office address)** (hereinafter called “the said Contractor(s)”) from the demand, under the terms and conditions of an L.O.A No.....Dated..... [L.O.A Date] made between..... and RailTel Corporation of India Limited, for ..... [Name of Work/Supply of Materials] (hereinafter called “the said Agreement”) of **Performance Guarantee** for the due fulfilment by the said contractor’s) of the terms and conditions contained in the said Agreement, or production of a Bank Guarantee for Rs..... (Rs. .... Only). We, ..... (indicate the name of the Bank and address) hereinafter referred to as “the Bank”) at the request of M/s..... 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 (indicate the name of the Bank and address) do hereby undertake to pay the amount 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 (indicate the name of the Bank and address) undertake to pay to the RailTel any money so demanded notwithstanding any dispute or disputes raised by the Contractor(s) / Supplier(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 thereunder and the Contractor(s) / Supplier(s) shall have no claim against us for making such payment.

4. We, ..... Bank (indicate the name of the Bank and address) 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 Guarantee is made on us in writing on or before the ..... We shall be discharged from all liability under this Guarantee thereafter.
5. We, .....(indicate the name of the Bank and address) further agree with the **RailTel** that the **RailTel** shall have the fullest liberty without our consent and without affecting in any manner our obligations hereunder to vary any of the terms and conditions of the Agreement or to extend time of to postpone for any time or from time to time any of the powers exercisable by the **RailTel** against the said contractor(s) and to forbear or enforce any of the terms and conditions relating to the said Agreement and we shall not be relieved from our liability by reason of any such variation, or extension to the said Contractor(s) or for any forbearance, act or omission on the part of **RailTel** or any indulgence by the **RailTel** to the said Contractor(s) or by any such matter or thing whatsoever which under the law relating to sureties would, but for this provision, have affect of so relieving us.
6. This Guarantee will not be discharged due to the change in the Constitution of the Bank or the Contractor(s) Supplier(s).
7. We, ..... (indicate the name of Bank) lastly undertake not to revoke this Guarantee during its currency except with the previous consent of the **RailTel** in writing.
8. Notwithstanding anything contained herein,
  1. Our liability under the Bank guarantee shall not exceed Rs. .... (In Rupees)
  2. This Bank Guarantee shall be valid up to .....and
  3. We are liable to pay the guaranteed and or any part thereof under this Bank Guarantee only and only if you serve upon is a written claims or demand or before ..... (date of expiry of guarantee).

Dated the day of 2020 for

.....  
(Indicate the name of the Bank)

Witness:

1. Signature

Name

2. Signature

Name