Information to Bidder for the "Supply of Routers, Switches & SFPs through GeM"

Ref: GeM Bid No. GEM/2019/B/434954 dated 22/11/19

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*

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. Delivery period: **60 days** from the date of PO.

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

8.1 Tender Cost: Estimated cost of the Tender is **Rs. 35,34,788/-**

8.2 Earnest Money Deposit (EMD)/ Bid Security: Rs. 70,700/- in the form of Pay Order/Demand Draft/BG drawn in favor of RailTel Corporation of India Ltd. payable at New Delhi. The Bid received without EMD will be summarily rejected.

9. This bid complies with "Public Procurement (preference to make in India) Policy Order, 2017 issued by DIPP and Public Procurement Policy for Micro and Small Enterprises (MSEs) order, 2012" issued by MoSME."
The bidders claiming the preference have to submit relevant documents prescribed under relevant order.

10. Security Deposit/Performance Bank Guarantee:

The successful tenderer shall submit security deposit in the form of DD/FDR or irrevocable Bank Guarantee from any scheduled bank for due fulfillment of contract as per the details given below:

i. Security Deposit/Performance Bank Guarantee @ 10% of total value of Purchase Order is required to be submitted within 30 days of issue of Purchase Order with validity of 3 months beyond warranty period, 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.

ii. The security deposit/PBG shall be submitted to RO, Shastri Park.

iii. 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 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 New Delhi.

11. 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 offline.

b. The OEM should have supplied at least 35% of the tendered quantity 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.

c. The OEM should have proven facilities for Engineering, manufacture, assembly, integration and testing of **Router/Switches/SFPs** 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)

12. Eligibility Criteria for Bidder:

a. The tenderer should have executed order of supply/ provision of **Router /Switches/SFPs** 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 atleast 35% of tendered value.

OR

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

OR

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

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

b. Bidder should have authorization specific to this tender from respective OEM as per Annex-III.

13. SPLITTING OF QUANTITY-

13.1 DELETED.

13.2 In case bidder claims PMA, Government of India Guideline/Instruction regarding splitting of order to Local supplier shall be applicable. Govt. Guidelines in regard to MSME shall be followed.

14. WARRANTY:

14.1 The materials are to be warranted for **Three years** 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.

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 equipment 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.

14.2 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 with in 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 & upto 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.

15. Long Term Maintenance Support:

DELETED.

16. Payment Conditions: -

i. 100% payment against full supply OR Supply, Installation & Commissioning.

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. Warranty Certificate of OEM
f. Copy of PBG
g. Certificate of receipt of Goods & installation thereof from RailTel.

17. Offline Submissions:

The bidder is required to submit the following documents offline to RailTel Corporation of India Ltd, 6th floor, III'rd Block,Delhi Technology Park, Shastri Park, Delhi-110053/ROs before **15:00 Hrs of 10.12.19** in a Sealed Envelope. The envelope shall bear 'DO NOT OPEN BEFORE' (due date & time). The offline documents shall be opened at **15:30 Hrs of 10.12.19**

i. EMD
ii. MAF/ OEM Authorization Letter (as per Annexure-II)
iii. BOQ of offered equipment.
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 Specification as per Annex-I.
vii. Certificate from the End user against the Eligibility criteria for OEM para 11.

Note: 1) 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.

2) Information to Bidder viz. corrigendum /addendum/ amendments etc. for this bid shall be posted on www.railtelindia.com only.

3) This bid is governed by the Specific Additional Terms & Conditions and General Terms & Conditions laid down by the GeM against **GeM Bid No.GEM/2019/B/434954 Dated 22/11/19**

In case, If any contradiction between GeM Additional Terms & Conditions and General Terms & Conditions, RailTel Terms & Conditions will prevail.

Technical Specifications

1. All Equipment should be:

i. With 3 years warranty & 5 years AMC. The product should not be declared EOL or EoS by OEM for next 8 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 center 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
SOR-1	Router Type-A (2 Combo 1G optical & electrical WAN Ports & 4 No. 100/1000 Base T LAN Ports) as per Technical specifications of SOR-1 of Information to Bidder.	Nos.	8
SOR-2	Router Type-B (6 ports 10/100/1000 Mbps Base T & 2 ports SFP) as per Technical specifications of SOR-2 of Information to Bidder.	Nos.	17
SOR-3	Switches Type-A (24 ports 10/100/1000 Mbps Base T & 4 ports SFP) as per Technical specifications of SOR-3 of Information to Bidder.	Nos.	6
SOR-4	Switches Type-B (24 ports SFP & 4 ports SFP+) as per Technical specifications of SOR-4 of Information to Bidder.	Nos.	88
SOR-5	SFP Type-A 1G BIDI SFP 10 KM as per Technical specifications of SOR-5 of Information to Bidder.	Nos.	131
SOR-6	SFP Type-B 10G BIDI SFP+ 10 KM as per Technical specifications of SOR-6 of Information to Bidder.	Nos.	14
SOR-7	SFP Type-C 10G BIDI SFP+ 40 KM as per Technical specifications of SOR-7 of Information to Bidder.	Nos.	10

SOR-1: Router Type-A

SN	Description
1	The switch shall be designed for continuous operations .The bidder shall furnish the MTBF (Mean Time between Failures) and MTRR (Mean Time to Restore) and predicted and observed values along with calculations by manufacturer.
2	In case of full system failure, Switches shall maintain a trace area in the NVRAM, which would be used for analysis /diagnosis of the problem.
3	Switch shall have built in power on diagnostics system to detect hardware failures.
4	Switch should have inbuilt power DC supply (-48 V).
5	Switches shall have suitable Visual Indicators for diagnostics and healthy /unhealthy status of ports & modules.
6	Switch shall have 4 Nos. of 1 Gigabit SFP ports and 2 Nos. of Gigabit ports with complying to IEEE 802.3, IEEE 803.3u and 802.3ab standard, supporting half duplex mode ,full duplex mode and auto negotiation on each port to optimize bandwidth.
7	Switch shall have minimum of 6Gbps (full duplex) forwarding bandwidth at layer 2 and layer 3 switching fabric.
8	Switch shall have minimum 10 million packets per second forwarding rate.
9	Switches shall have a minimum of 8000 MAC address space.
10	Switches shall have a minimum of 10000 ipv4 and 2000 ipv6 routes support.
11	Shall be operate at temp with a range of 0 to 65 C
12	It should be possible for the switches to be mounted on a 19-Inch rack. All accessories required for this mounting should be supplied.
13	The following MPLS Features switch shall be supported.
i	It shall also support MPLS with RSVP and LDP signaling. It shall support MPLS FRR and L3VRF with up to 64 VRF.
ii	It shall support a scale of 500 VLAN and shall support Ethernet OAM features like BFD, 802.3ah, 802.1ag and Y.1731
iii	It shall support LSP ping and trace.
iv	It shall support 8 hardware queues per port and shall support ingress policing and egress shaping.
v	Shall support MPLS based L3 and L2 VPN services.
vi	It shall also support SNMPv3
vii	Shall support ip routing features like Static , OSPF , ISIS and BGP.
viii	Shall support MPLS features like L3 VPN , L2 VPN,LDP and RSVP.
14	Shall support dual power supply input.
15	Router based solution is also acceptable.
16	**Shall have the following features. All software's/hardware's/License required for this must be supplied along with the switch.**
i	Link Aggregation Control (LCAP) as per IEEE 802.3ad.
ii	Support for IEEE 802.1Q VLAN on all ports.
iii	Support for minimum 256 VLANs.
iv	Support for IEEE 802.1 D spanning tree protocol.
v	Support for IEEE 802.1 s MSTP
vi	Support Dynamic Host Configuration Protocol (DHCP)
vii	Support Auto –MDIX (Media Dependent Interface Cross over)

	viii	Support Inter VLAN IP routing for full layer -3 routing
	ix	Support for IPv6.
	x	Support Strict Priority Queuing.
	xi	Support Network Time Protocol (NTP) / Simple Network Time Protocol (SNTP) based
	xii	RFC 1305 / 2030 for synchronization of date & time from the Central NTP Server.
	xiii	Support RADIUS protocol for console access restriction and authentication as per RFC 2138.
	xiv	Support 4 group of embedded RMON (history, static's and alarms).
	xv	Support multiple privilege level to provide different level of access on console port and telnet sessions.
	xvi	Support classification and scheduling as per IEEE 802.1P on all ports.
	xvii	Support Port Spanning functionally for measurements using a networks analyzer.
	xviii	Support all the standard MIBs (MIB-I&II).
	xix	Support for console port Interface for configuration and diagnostics purposes.
	xx	Support Port Spanning functionally for measurements using a networks analyzer.
	xxi	ITU-T G.8032 Ethernet Ring Protection designed for loop protection and fast convergence times (sub 50 ms) in ringtopologies.
	xxii	Should support multiple Ring up to 8 ring (Main and Sub Ring) protection failover within 50 ms (up to 10 Switches in ring). orITU-T G.8032 v2 (Confirmed roadmap within a year time is also acceptable for ITU-T G.8032 v2 with no additional cost to RailTel) .
	xxiii	Should support Optical Transceiver Digital Diagnostic Monitoring.
	xxiv	Priority queues: Eight hardware-based queues per port for flexible QoSmanagement
	xxv	Traffic prioritization: Flow-based QoSwith internal and external (a.k.a., remarking)prioritization.
	xxvi	Bandwidth management: Flow-basedbandwidth management, ingress ratelimiting; egress rate shaping per port.
	xxvii	Queue management: Configurablescheduling algorithms — Strict PriorityQueuing (SPQ), Weighted Round Robin(WRR) and Deficit Round Robin (DRR).
17		The following Metro Ethernet features should support
	i	IEEE 802.1ad Provider Bridge
	ii	Transparent LAN Services with Service VLAN (SVLAN) and Customer VLAN (CVLAN) concept
	iii	CVLAN to SVLAN translation and mapping
	iv	IEEE 802.1ag Ethernet OAM: Connectivity Fault Management (Support 32 MEPs)
	v	Ethernet OAM compliant with IEEE 802.3ah
	vi	ITU-T G.8032 Ethernet Ring Protection designed for loop protection and fast convergence times (sub 50 ms) in ring topologies.
	vii	Should support Optical Transceiver Digital Diagnostic Monitoring.
	viii	Switch should support minimum of 4000 Ethernet flow points(EFP).
	ix	L2 Protocol Tunnelling.
	x	Loopback Detection.
18		**Switch shall have support of following Standards**
	i	IEEE 802.1D (STP)
	ii	IEEE 802.1p (CoS)

	iii	IEEE 802.1Q (VLANs)
	iv	IEEE 802.1ag (Connectivity Fault Management)
	v	IEEE 802.1s (MSTP)
	vi	IEEE 802.3x (Flow Control)
	vii	IEEE 802.3z (Gigabit Ethernet)
	viii	IEEE 802.3ab (1000Base-T)
	ix	IEEE 802.3ac (VLAN Tagging)
	x	IEEE 802.3ad (Link Aggregation)
	xi	IEEE 802.3ae (10 Gigabit Ethernet)
	xii	IEEE 802.ah (Ethernet first mile)
	xiii	ITU-T G.8032/Y.1344 2010: Ethernet Ring
19		**Switch shall have the following Certifications**
	i	The operating system of the Switches series shall have MEF-9 & 14 or higher certification from authorized agencies.
	ii	Switches should be NEBS certified.

SOR-2: Router Type-B

SN	Description
1	Device should have minimum 2 x 10/100/1000BaseT WAN ports, 2 x 1G SFP Fiber WAN ports and 4 x 10/100/1000BaseT LAN ports
2	Device should have 1 x RJ-45 Console port and 1 x USB port
4	Device should be complied with NDPP or EAL
5	The Device should support a Routing / Firewall multiprotocol forwarding throughput of minimum 500Mbps, VPN throughput of 250Mbps and should support 128 VPN tunnels
6	Should support a Route table size of minimum 128K IPv4 / IPv6 Routes and support up tp 32K concurrent IPv4/IPv6 sessions
7	Device should have all licenses required for Firewall, VPN, Switching & Routing functionality on day one
8	Devices should support Class-based queuing with prioritization
9	It should be possible to configure maximum bandwidth and guaranteed bandwidth
10	Devices should support Queuing based on VLAN.
11	Devices should support Marking, policing, and shaping
12	Devices should support congestion management features like WRED
13	The Device should support IPv4 and IPv6 routing from day 1
14	Should support 200kpps of routing throughput
15	Devices should support RIP v1/v2, OSPFv2/v3, BGP and IS-IS
16	Device should support virtualization with virtual routers
17	Device should support VRRP
18	Should support stateful high availabilty with active/active dual box clustering
19	Should support firewall session synchronization
20	Should support on box monitoring with route and interface failover support
22	Should support 802.1q VLAN with support for minimum 1000 VLAN and 10K MAC Address
23	Should support Link Aggregation 802.3ad / LACP
24	Should support Jumbo Frames

25	Should support Spanning Tree Protocol (STP) 802.1D, RSTP 802.1w, MSTP 802.1s on all Ethernet ports
26	Should support 802.1x Port based authentication on all Ethernet ports
27	Should have an internal DHCP server
28	All Ethernet ports on the appliance should support full enterprise services including OSPF, BGP, PIM and IPv6 routing such as OSPFv3.
29	IPv4 Multicast features including IGMP,PIM-SM, PIM-SSM and PIM-DM
30	Should support Session Description Protocol (SDP), Distance Vector Multicast Routing Protocol (DVMRP) & Multicast Source Discovery Protocol (MSDP),
31	Devices should have Stateful Firewalling with support for minimum 10 zones
32	Devices should support Network attack detection and support DDoS attack prevention and provide protection from protocol and traffic anomaly
33	Should support GRE and IPSec VPN and a Group VPN solution based on RFC 3547 - Group Domain of Interpretation (GDOI)
34	Devices should support TCP reassembly for fragmented packet protection and Brute force attack mitigation
35	Device should support SYN cookie protection and Zone-based IP Spoofing
36	Devices should support Network address translation (NAT) with support for Source NAT with PAT and Destination NAT with PAT, Persistent NAT and IPv6 Address translation
37	Device should have Console, Telnet or Web for management
38	Devices should support Software upgrades through Web or CLI
39	Devices should support SNMPv2 and SNMPv3
40	Extensive debugs on all protocols
41	Device should have flow monitoring and accounting services
42	Device should have SLA monitoring features with support for Sessions, packets & bandwidth usage
43	Device should support configuration rollback to a previous configuration
44	Device should support data plane log export in Syslog
45	Device should support scripting to allow for custom actions and commands based on specific user and environment needs

SOR-3: Switch Type-A

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 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
	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.
	Should support following for min. 64 Groups :
	i) IGMP Snooping,
	ii) IGMP v1/v2/v3 awareness Snooping,
11	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.:
	i) Web Management (HTTPS),
	ii) Broadcast/Multicast/Unicast Storm Control,
	iii) DoS Attack Prevention
14	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.
15	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)
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.
18	IPv6/v4-L3 and IPv6-Multicast functionalities/features for Switches are desired but not mandatory.
19	**Safety Requirement :-**
	Switch should have safety compliance of UL.
20	**Electromagnetic Compatibility (EMC) Requirements:-**
	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	**Qualitative Requirements:-**

	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.
25	**Switch should support following Metro Ethernet Features:**
	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.
	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: Switch Type-B

SN	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 forwading rates 90 million PPS
5	Should support at least 16Kentries in the MAC table.
6	Should Support 255 minimum VLANs.
7	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.
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.
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 ,MSTP , spanning-tree root guard, Port Fast and BPDU Guard/Filter or similar functionalities.

13	Should support following security features viz.:
	i) Web Management (HTTPS),
	ii) Broadcast/Multicast/Unicast Storm Control,
	iii) DoS Attack Prevention
14	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.
15	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)
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.
18	IPv6/v4-L3 and IPv6-Multicast functionalities/features for Switches are desired but not mandatory.
19	**Safety Requirement :-**
	Switch should have safety compliance of UL.
20	**Electromagnetic Compatibility (EMC) Requirements:-**
	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	**Qualitative Requirements:-**
	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.
25	**Switch should support following Metro Ethernet Features:**
	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.

SOR-5: SFP 1G 10 KM (BIDI):

SN	Description
1	Should be compatible with OEM equipment's like Cisco, Juniper, D Link, Zyxel, Edge Core, Extreme etc.
2	Should support 10 km optical distance on single fiber
3	Should have LC type connector.
4	Should provide the cost in Pair (BX U & D).
5	Should have 1 Gigabit Ethernet capacity on single mode fiber.
6	Should support Digital Diagnostic Monitoring feature.
7	OEM should be having valid ISO 9000 & ISO 14000 certification on the date of opening of bid.
8	Should have CE and FCC and UL regulatory compliances.

SOR-6: SFP 10G 10 KM (BIDI):

SN	Description
1	Should be compatible with OEM equipment's like Cisco, Juniper, D Link, Zyxel, Edge Core, Extreme etc.
2	Should support 10 km optical distance on single fiber
3	Should have LC type connector.
4	Should provide the cost in pair (BX U & D).
5	Should have 10 Gigabit Ethernet capacity on single mode fiber.
6	Should support Digital Diagnostic Monitoring feature.
7	OEM should be having valid ISO 9000 & ISO 14000 certification on the date of opening of bid.
8	Should have CE and FCC and UL regulatory compliances.
9	Operating temperature of the SFP should be minimum 0 to 65 °C (23 to 149 °F)

SOR-7: SFP 10G 40 KM (BIDI):

SN	Description
1	Should be compatible with OEM equipment's like Cisco, Juniper, D Link, Zyxel, Edge Core, Extreme etc.
2	Should support 20-40 kms optical distance on single fiber
3	Should have LC type connector.
4	Should provide the cost in pair (BX U & D).
5	Should have 10 Gigabit Ethernet capacity on single mode fiber.
6	Should support Digital Diagnostic Monitoring feature.
7	OEM should be having valid ISO 9000 & ISO 14000 certification on the date of opening of bid.
8	Should have CE and FCC and UL regulatory compliances.
9	Operating temperature of the SFP should be minimum 0 to 65 °C (23 to 149 °F)

Annexure-II

Executive Director, **Dated: …….**
RailTel Corporation of India Ltd.
……
……....
……....

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

Ref: GeM Bid No……..……..dated…….

Dear Sir,

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

Authorized Signatory

DGM/Projects
For & on behalf of RailTel Corporation of India Ltd.