RAILTEL CORPORATION OF INDIA LIMITED
(A Govt. of India Undertaking)

Schedule of Requirement (SOR) Annexure 1

EOI No:- RailTel/EOI/NR/LMC/BA/21-22/Business Delivery/RO/NTP/02 dated 23.04.2021

Name Of Work:- Expression of Interest (EOI) for Selection of System Integrator cum implementation partner for delivery of customer of RailTel (CoR) project of "Supply, installation, testing and commissioning of IP/MPLS at various metro stations in DMRC" on back-to-back basis from RailTel's empanelled BAs/ SIs / partners

Name Of Company/Frim	

Schedule-A (Supply)

Item No	ITEM DESCRIPTION	Location	UNIT	QUANTITY	Unit Rate (INR) (Inclusive of all taxes, duties, cess etc. and Exclusive of GST)	Total Amount in INR (Inclusive of all taxes, duties, cess etc. and Exclusive of GST)
1	Supply of IP/MPLS node/equipment/router with chassis capacity of minimum 30Gig (Full duplex) and scalable 25% additional capacity to cater future bandwidth requirement in the same Chassis without any additional cost. IP/MPLS node/equipment/router must be capable of handling traffic of stations in a ring of not more than 10 stations with minimum 10G (Full Duplex) traffic.Equipment must provide minimum 32 E1's drop at each node + minimum 8 x Ethernet (1 Gbps) and minimum 2 x Optical fiber enabled ports (10Gbps) for upline station and downline station with redundancy across electrical/optical interface card/module + minimum 8 RS232 enabled interface for Scada communication with spare interface + Redundant power supply unit.(The cost of each node should include cost for power cables (minimum 3 coreX1.5sq. mm or 2 coreX10 sq mm) , Required number of MCCB's or RCCB's whichever applicable (DC power source will be provided by DMRC in Telecom Equipment Room), data cables (Cat5e or better patch cords with locking cap), earthing cables (minimum 1.5 sq mm), patch cords (single mode Optical Fiber), SFP's (Short haul 10KM or Long Haul 40 KM as the case may be), DDF for terminating 32 E1's, all required connectors, terminations, any other installation material or accessories as required for the installation, testing and commissioning of Router in Telecom Equipment Room of stations.	KN,KP,NSHP,KE,PTP,RHE, RHW	Nos.	7	833678	58,35,746
2	Supply of IP/MPLS node/equipment/router with chassis capacity of minimum 30Gig (Full duplex) and scalable 25% additional capacity to cater future bandwidth requirement in the same Chassis without any additional costEquipment must be capable of handling traffic of stations in a ring of not more than 10 stations with minimum 10G (Full Duplex) traffic.Equipment must provide minimum 32 E1's drop at each node + minimum 8 x Ethernet (1 Gbps) and minimum 2 x Optical fiber enabled ports (10Gbps) for upline station and downline station with redundancy across electrical/optical interface card/module + minimum 20 RS232 enabled interface for Scada communication with spare interface + Redundant power supply unit.(The cost of each node should include cost for power cables (minimum 3 coreX1.5sq. mm or 2 coreX10 sq mm) , Required number of MCCB's or RCCB's whichever applicable (DC power source will be provided by DMRC in Telecom Equipment Room), data cables (Cat5e or better patch cords with locking cap), earthing cables (minimum 1.5 sq mm), patch cords (single mode Optical Fiber), SFP's (Short haul 10KM or Long Haul 40 KM as the case may be), DDF for terminating 32 E1's, all required connectors, terminations, any other installation material or accessories as required for the installation, testing and commissioning of Router in Telecom Equipment Room of stations.	Ri	Nos.	1	867706	8,67,706
3	Supply of IP/MPLS node/equipment/router with chassis capacity of minimum 60Gig (Full Duplex) and scalable 25% additional capacity to cater future bandwidth requirement in the same Chassis without any additional costEquipment must be capable of handling traffic of stations in not more than 02 rings.Each ring having not more than 10 stations with minimum 10G (Full Duplex) traffic. Equipment should provide minimum 32 E1's drop at KGR station + minimum 8 x Ethernet (1 Gbps) and minimum 6 x Optical fiber enabled ports(10Gbps) for upline and downline stations with redundancy across electrical/optical interface card/module + minimum 20 RS232 enabled interface for Scada communication with spare ports + Redundant power supply unit.(The cost of each node should include cost for power cables (minimum 3 coreX1.5sq. mm or 2 coreX10 sq mm) , Required number of MCCB's or RCCB's whichever applicable (DC power source will be provided by DMRC in Telecom Equipment Room), data cables (Cat5e or better patch cords with locking cap), earthing cables (minimum 1.5 sq mm), patch cords (single mode Optical Fiber), SFP's (Short haul 10KM or Long Haul 40 KM as the case may be), DDF for terminating 32 E1's, all required connectors, terminations, any other installation material or accessories as required for the installation, testing and commissioning of Router in Telecom Equipment Room of stations.	KGR	Nos.	1	880159	8,80,159
4	Supply of IP/MPLS node/equipment/router with chassis capacity of minimum 30Gig (Full duplex) and scalable 25% additional capacity to cater future bandwidth requirement in the same Chassis without any additional cost.Equipment must be capable of handling traffic of stations in a ring of not more than 10 stations with minimum 10G (Full Duplex) traffic.Equipment must provide minimum 32 E1's drop at each node + minimum 8 x Ethernet (1 Gbps) and minimum 2 x Optical fiber enabled ports (10Gbps) for upline station and downline station with redundancy across electrical/optical interface card/module + minimum 8 RS485 enabled interface for Scada communication with spare interface to support redundancy + Redundant power supply unit.(The cost of each node should include cost forpower cables (minimum 3 coreX1.5sq. mm or 2 coreX10 sq mm) , Required number of MCCB's or RCCB's whichever applicable (DC power source will be provided by DMRC in Telecom Equipment Room), data cables (Cat5e or better patch cords with locking cap), earthing cables (minimum 1.5 sq mm), patch cords (single mode Optical Fiber), SFP's (Short haul 10KM or Long Haul 40 KM as the case may be), DDF for terminating 32 E1's, all required connectors, terminations, any other installation material or accessories as required for the installation, testing and commissioning of Router in Telecom Equipment Room of stations.	DSG,JLML,MPK,GTB, MDTW,AZU,AHNR, LN, NV, PV, KKDM, AVIT, KASI, VASI, JGPI, RN,TG,TN,JPW,UNW,DM,NWDA,JPE,RG,DW	Nos.	25	833678	2,08,41,949

5	Supply of IP/MPLS node/equipment/router with chassis capacity of minimum 500Gig (Full Duplex).A 100G Link to connect with RCK and OCC/MB.Equipment must provide minimum 128 E1's drop at OCC/Shpk + minimum 12 x Ethernet (1 Gbps) and minimum 12 x Optical fiber enabled ports (10Gbps) for different rings with redundancy + minimum 24 RS232 enabled and minimum 12 RS485 enabled interface for Scada communication + Redundant power supply unit.(The cost of each node should include cost for 19 inch or 42U rack along with under False Floor Base Frame over which rack is to be installed, power cables (minimum 3 coreX1.5sq. mm (for AC) or 2 coreX10 sq mm (DC)) , Required number of MCCB's or RCCB's whichever applicable (DC power source will be provided by DMRC in Telecom Equipment Room), data cables (Cat5e or better patch cords with locking cap), earthing cables (minimum 1.5 sq mm), patch cords (single mode Optical Fiber), SFP's (Short haul 10KM or Long Haul 40 KM as the case may be), DDF for terminating 128 E1's, all required connectors, terminations, any other installation material or accessories as required for the installation, testing and commissioning of Router in Telecom Equipment Room of OCC/Shpk.	OCC/SHPK	Nos.	1	5106250	51,06,250
6	Supply of IP/MPLS node/equipment/router with chassis capacity of minimum 500Gig (Full Duplex).A 100G Link to connect with RCK and OCC/Shpk.Equipment must provide minimum 128 E1's drop at OCC/MB + minimum 12 x Ethernet (1 Gbps) and minimum 12 x Optical fiber enabled ports (10Gbps) for different rings with redundancy + minimum 36 RS485 enable interface for scada communication + minimum 10 (X.21) (128 kbps) enabled interface WITH redundancy for Radio Network + Redundant power supply unit.(The cost of each node should include cost for 19 inch or 42U rack along with under False Floor Base Frame over which rack is to be installed, power cables (minimum 3 coreX1.5sq. mm (for AC) or 2 coreX10 sq mm (DC)) , Required number of MCCB's or RCCB's whichever applicable (DC power source will be provided by DMRC in Telecom Equipment Room), data cables (Cat5e or better patch cords with locking cap), earthing cables (minimum 1.5 sq mm), patch cords (single mode Optical Fiber), SFP's (Short haul 10KM or Long Haul 40 KM as the case may be), DDF for terminating 128 E1's, all required connectors, terminations, any other installation material or accessories as required for the installation, testing and commissioning of Router in Telecom Equipment Room of OCC/Shpk.	OCC/MB	Nos.	1	5920641	59,20,641
7	Supply of IP/MPLS node/equipment/router with chassis capacity of minimum 500Gig (Full duplex).A 100G Link to OCC/SHPK and KNR for RCK station and another 100G Link to OCC/MB and RCK for KNR station.Equipment must provide minimum 32 E1's drop at KNR and RCK stations + minimum 8 x Ethernet (1 Gbps) and minimum 8 x Optical fiber enabled ports(10Gbps) + minimum 8 RS485 enabled interface for Scada communication with spare ports + Redundant power supply unit.(The cost of each node should include cost for 19 inch or 42U rack along with under False Floor Base Frame over which rack is to be installed, power cables (minimum 3 coreX1.5sq. mm (for AC) or 2 coreX10 sq mm (DC)) , Required number of MCCB's or RCCB's whichever applicable (DC power source will be provided by DMRC in Telecom Equipment Room), data cables (Cat5e or better patch cords with locking cap), earthing cables (minimum 1.5 sq mm), patch cords (single mode Optical Fiber), SFP's (Short haul 10KM or Long Haul 40 KM as the case may be), DDF for terminating 32 E1's, all required connectors, terminations, any other installation material or accessories as required for the installation, testing and commissioning of Router in Telecom Equipment Room of OCC/Shpk.	KNR and RCK	Nos.	2	6494218	1,29,88,435
8	Supply of IP/MPLS node/equipment/router with chassis capacity of minimum 30Gig (Full duplex) and scalable 25% additional capacity to cater future bandwidth requirement in the same Chassis without any additional costEquipment must be capable of handling traffic of stations in a ring of not more than 10 stations with minimum 10G (Full Duplex) traffic.Equipment must provide minimum 32 E1's drop at each node + minimum 8 x Ethernet (1 Gbps) and minimum 2 x Optical fiber enabled ports (10Gbps) for upline station and downline station with redundancy across electrical/optical interface card/module + minimum 8 RS485 enabled interface for Scada communication with spare interface + minimum 2 (two) X.21 (128 kbps) enabled interface for Radio Network + Redundant power supply unit.(The cost of each node should include cost for power cables (minimum 3 coreX1.5sq. mm or 2 coreX10 sq mm) , Required number of MCCB's or RCCB's whichever applicable (DC power source will be provided by DMRC in Telecom Equipment Room), data cables (Cat5e or better patch cords with locking cap), earthing cables (minimum 1.5 sq mm), patch cords (single mode Optical Fiber), SFP's (Short haul 10KM or Long Haul 40 KM as the case may be), DDF for terminating 32 E1's, all required connectors, terminations, any other installation material or accessories as required for the installation, testing and commissioning of Router in Telecom Equipment Room of stations.	NJFD,UNE,MN, SN	Nos.	4	833678	33,34,712
9	Supply of Network Management system with License (It should include 1 NMS server installed at both OCC SHPK + workstation to be used as MAN MACHINE INTERFACE for monitoring and managing all nodes of this project.Moreover, NMS should be capable of monitoring IP/MPLS nodes independent of Make/Vendor other than this project.	OCC/SHPK & OCC/MB	Nos.	2	3067340	61,34,680
Total Amount (Schedule-A) (INR) =						**61910278**

Schedule-B (Services)

Item No	ITEM DESCRIPTION		UNIT	QTY	Unit Rate (INR) (Exclusive of GST)	Total Amount in INR (Exclusive of GST)
1	Installation, testing, commissioning, customization, configuration cost of all IP/MPLS nodes and OCC/Shpk and OCC/MB nodes and NMS servers as well as Integration testing with existing SDH system as and where required.		Nos.	42	46199	1940337
2	Training for IP/MPLS system. (3 weeks local) of minimum 15 staff per batch.		Weeks	3	461985	1385955
3	Application Engineering and documentation which should include handing over of all application, node management related software and Drawing/documentaion related to whole project.		Nos.	42	18479	776135
Total Amount (Schedule-B) (INR) =						**4102427**
	TOTAL AMOUNT (Schedule-A + Schedule-B) (Inclusive of all taxes, duties, cess etc. and Exclusive of GST) in figures					**66012705**
	BA's Offer : " I/We hereby offer to do the work at following rates					
	% Below (-) / At par (0)/ Above (+) on the rates of Schedule (A)	**61910278**				

	% Below (-) / At par (0)/ Above (+) on the rates of Schedule (B)	**4102427**			
	TOTAL AMOUNT (Schedule-A + Schedule-B) of BA's Offer (Inclusive of all taxes, duties, cess etc. and Exclusive of GST) in figures				

Note:-

1	The Bill of Quantities shall be read in conjunction with Notice Inviting Tenders, Instructions to tenderers, Special Conditions of contract, General Conditions of contract, Employers Requirements & Technical Specifications.
2	There are two schedules in SOR i.e. Schedule 'A' and Schedule 'B'
3	Schedule 'A' consists of SUPPLY items as detailed in Tender documents. Tenderer has to quote percentage above/below/at par the rates against BOQ amount given in Schedule 'A'.
4	Schedule 'B' consists of SERVICES items as detailed in Tender documents. Tenderer has to quote percentage above/below/at par the rates against BOQ amount given in Schedule 'B'.
5	The rates and prices to be tendered in the unit Priced Bill of Quantities of Schedule 'A' & 'B' are for completed and finished items of works and complete in all respect. It will be deemed to include cost of all plants, labour, supervision, materials, transport, maintenance, contractor's profit and establishment/overheads, together with drawings, all general risks, insurance liabilities, compliance of labour laws and obligations set out or implied in the contracts. For taxes and duties refer clause C2.5 of ITT & clause 17 of SCC of CoR tender document.
6	If the tenderer fails to quote rates against any Schedule, the tender may be treated as incomplete and non-responsive and shall be rejected.
7	Tenderers shall quote their offer in Indian Rupees (Rs.).
8	Errors will be corrected by the employer for any arithmetical errors in computation or summation as per contract conditions.
9	The cost of work is for total scope of work provided in NIT and Employers Requirements.
10	All the unit rates should be filled in figures. In case of any discrepancy, the value provided in words shall be treated as sacrosanct.
11	The work executed against all the BOQ items in Schedule 'A' & Schedule 'B' as detailed in tender document would be paid on Key Date basis as per actually executed work on back to back basis.
12	Since the contract will be governed on back to back basis as per the contract between RailTel and CoR, hence, bidder is required to give an underatking in Annexure-7 that the offered solution and detailed Bill of Material is as per requirement mentioned in CoR tender document. Further, in case of any deficiency as brought out by CoR during currency of the work, BA/Bidder is liable to supply the additional items/materials to comply with the requirement of CoR without any additional cost to RailTel.