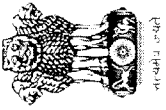


Fax : 0522-2458500
Phone : 0522-2451206



भारत सरकार-रेल मंत्रालय
अनुसंधान अभिकल्प और मानक संगठन
Government of India - Ministry of Railways
Research Designs & Standards Organisation
Lucknow - 226011



No. STT/TMS/Wiring work

Date: 03.12.2019

Quotation Notice

Sub: Work of **Re-arrangement of Internet & Telephone Facility** at RDSO Campus Lucknow.

Your sealed Quotation offer for above mentioned work is invited by ADE/TMS/RDSO office for the estimated cost of **Rs 4,88,127.00/-** with completion period of **Two Month**. Please submit your quotation offer up to **09.12.2019** till 15:00 Hrs. in the office of ADE/TMS/RDSO. Quotation offer will be opened on the same day at 15:30 Hrs in the chamber of ADE/TMS/RDSO. In case, the **09.12.2019** happens to be a holiday the Quotation offers shall be received and opened on the next working day at the same time and place. Schedule of work is attached on which the offer price in percentage above/below/at par in comparison to the estimated rates is to be quoted. Tenderer should be registered with GST, it is requested to submit GSTIN number along with the offer, failing which will be resulted in cancellation of offer.

Contractor Signatures
(Seal)

03.12.2019
ADE/TMS
RDSO/LKO

(Signature)

Annexure -A

Schedule of Work

S N	Description of Items	Unit	Qty.	Rate in Rs (in figures)	Rate in Rs. (in words)	Amount in Rs. (in Figures)	Amount in Rs. (in Words)
1	Supply and Installation of L2+ Switch PoE (Power budget 370W) 24 Ethernet 10/100/1000 port with 4 combo 10/100/1000 Base-T/SFP Port and 4 SFP + port as per technical Specification.	Nos.	2				
2	Supply and Installation of Jack Panel 24 port loaded with Std. Make:- D-Link, Digilink, Molex, Digisol.	Nos.	3				
3	Supply of Cat-6 UTP Cable (305 m/ Box), Make: - D-Link, Digilink, Digisol.	Mtr.	1220				
4	Supply of CAT-6 I/O Box complete with faceplate, gang with RJ-45 socket & SMB.	Mtr.	80				
5	Supply of Patch cord RJ-45 (1Mtr.) Make:- D-Link, AMP, Molex, Digisol.	Nos.	80				
6	Supply of Patch cord RJ-45 (1 Mtr.) Make:- D-Link, AMP, Molex.	Nos.	80				
7	Supply of Fiber Tray SM Fiber FMS/LIU 24 port Fully loaded Single mode Pigtail, connector etc. Make Raychem, AMP, D-Link, Schnieder.	Nos.	4				
8	Supply of OFC single mode duplex patch cord SC-LC length 2 Mtrs.	Nos.	10				
9	Supply of PVC Switch board cable 10 Pair (0.5 mm dia copper conductor), make-Standard.	Nos.	900				
10	Supply of PVC Switch board cable 20 pair (0.5 mm dia copper conductor), make-Standard.)	Mtr.	180				
11	Supply of PVC Switch board cable 5 pair (0.5 mm dia copper conductor), make-Standard.)	Mtr.	450				
12	Supply & Fixing of 20 Pair DP Box with Krone module.	Nos.	1				
13	Supply of ADSL Splitter for Broadband connection	Nos.	30				
	Supply of RJ-45 Connector Make D-Link, AMP.	Nos.	300				
14	Supply of RJ-11 line lead for telephone set (1.5 Meter)	Nos.	30				
15	Fixing of PVC Casing-n-Caping channels of size 20/25mm along with accessories.	Mtr.	600				
16	Fixing of PVC conduit pipes of size 25mm along with accessories.	Mtr.	300				
17	Laying of CAT-6 Cable/PVC Cable, OFC cable inside PVC conduit pipe PVC channel / industrial casing and through wire manager of work stations.	Mtr.	2750				

Handwritten signature

SN-27

18	Fixing and Termination of information outlet/Rosett Box with single port face plate fitted inside box on the wall or any other structure with screw.	Nos.	80			
19	Termination of Fiber cable in LIU Splicing of fiber with pig tail.	Nos.	48			
20	Installation, testing and removal of old wiring as per scope of work.	Job	1			
Total						

You are requested to fill up the rates against scheduled item mentioned above and submit the same in the sealed envelope in the box provided at office of **Asstt. Design Engineer/TMS, Telephone Exchange Building, Manak Nagar Lucknow-226011**

Quotation shall be Opened at **15:30 Hrs** on **09.12.2019**

Signature of Tenderer
With Seal

(Signature)
ADE/TMS
RDSO/LKO

(Signature)

TERMS & CONDITION FOR SCHEDULES OF WORKS

The Terms & Condition for schedules of works is as under:

1.	The work should be completed within Two month of issue of LOA.
2.	During installation fixing etc. in this work shall be carried out as per direction of Site Engineer.
3.	Completion Period of Work:- The work of Re-arrangement of Internet & Telephone Facility at RDSO Lucknow. should be completed with-in Two Month from the dated of receipt of acceptance letter in all respect.
4.	The bidder (whether his quotation accepted or not), shall treat the contents of his quotation as private and confidential. He shall also treat the prices quoted by him as strictly confidential till the quotation is opened.
5.	No CLAIM FOR REJECTION OF BIDDER: The quotation, when submitted shall not constitute an agreement and the bidder shall have no cause of action of claim against the RDSO for rejection of his offer. The RDSO shall always be at liberty to reject or accept at his own discretion and any such action will not be called into question and the bidder shall have no claim in that regard against the RDSO.
6.	CAPIBILITY OF THE BIDDER: The bidders shall provide satisfactory evidence acceptable to RDSO to show that: 1.1 He is an experienced and established contractor who regularly under takes the work of Re-arrangement of Internet & Telephone Facility at RDSO Lucknow, cutting of wall and laying of PVC Conduit Pipes, accessories and removal of old wiring in reputed organizations and has adequate technical knowledge and practical experience in this specific field. The bidder has to establish to the full satisfaction of RDSO his credentials and technical competency for executing such work.
7.	Payment:- (i) 100 % payment will be arranged after satisfactory completion of the work on submission of duly signed bill. (ii) PAN, GSTN & Bank account details including IFSC & MICR code shall be submitted with bill. (iii) Income tax and UPTT etc. will be deducted at source from the bill as per rule as applicable. (iv) Rate & Amount shall be quoted in both words & Figures. (v) Free maintenance period for active items : Six Month
8.	Warranty: Warranty period of each equipment may be different from free maintenance period. Firm has to pass on full warranty benefit to railway. Warranty from OEM for Active equipment to be given in the name of Railway authority. Warranty should be commencing after completion of work. Acceptance of quotation shall be communicated by FAX/Telex/Telegram/Express Letter or a formal letter of acceptance of quotation by RDSO. When acceptance is communicated by FAX/ Telex/ Telegram/ Express letters, the formal letter of acceptance will be sent to the bidder as soon as possible. Issue of FAX/ Telex/ Telegram/ Express letter should be deemed to conclude the contract.

Recd
22.12.19
ADE/TMS
RDSO/LKO

Signature of Tenderer
With Seal

(Handwritten Signature)

Execution of Schedule of work

Technical Specification & Special Conditions of the Work Brief Description of work:

As mentioned in Schedule of Work 'A' and as per the direction of site engineer. LAN Wiring and Splicing:

- 2.1 There is a central LAN room in the TMS of RDSO. Optical fiber cable and CAT-6 cables are to be laid from the central LAN room to other locations and also from different locations to different locations in RDSO complex as per requirement and as decided by site engineer.
- 2.2 Rack mountable fiber termination boxes (fiber patch panel) are to be installed inside racks for termination of optical fibers thorough pigtailed. Optical fiber is to be spliced with pigtail for terminating on fiber termination box to respective as witches. All these wirings are to be done as per standard practices. Switches will be installed later on.
- 2.3 Layer 2 switch and its transceiver modules should be of latest model/version of standard make D-Link, Cisco, Zyxel, Extreme, Juniper etc. fully meeting the requirement indicated in the Technical specification.
- 2.4 PVC conduit pipes and PVC casing-n-capping channels are to be fixed on the wall properly with help of suitable clamps before removal of old wiring, if any. All required accessories like T joints, bends screws etc. are to be supplied by contractor as per the site requirements. All required masonry work like making holes in the wall for taking these pipes, repairing of wall after laying pipes are to be done by the contractor.
- 2.5 Information outlet boxes are to be fixed at appropriate locations in the officers for extending LAN connections as decided by RDSO engineer. Wiring of CAT-6 cable from this box to patch panel mounted inside rack is to be done either inside PVC conduit pipe or PVC casing-n-capping as decided by site engineer.
- 2.6 The site engineer of RDSO shall decide the places where the pipes & channels are to laid and LAN wirings are to be provided on the walls such as verandas, officer room etc.
- 2.7 The wiring done inside the PVC pipe/casing-n-capping on the wall should be in a straight alignment and should be neat and clean and nicely executed and the ratio of two swings (clamp, screws swaddle) in one meter.
- 2.8 The Laying of Fiber Cable is fixing on the wall should be a ratio of four Swings (Clamp ,Screws ,Swaddle) in 3 meter and fixing in the fiber tray with the appropriate line.
- 2.9 If any breaking work is done on the wall the wall shall be restored to its original condition after the work is completed.
- 2.10 Channels are to be cut on wall/floor for laying PVC conduit pipes inside rooms/offices as decided by RDSO engineer. Wall & Floor are to be repaired to their original condition after completion of these activities.
- 2.11 The punching of CAT -6 cables and laying of cable in rack is proper fixing by tie.
- 2.12 Various items mentioned in schedule are to be executed as per standard practices being following nationally/internationally as applicable.

Technical Specification:-

SSE Kalra
RDSO

TS -1 : 24 port Layer 2 PoE Switch

Switch Hardware Specification	Compliance (Yes/No)
Switch with at least 24 X 10/100/1000BASE-T POE Ports and 2 x 10G Base-T and 4 X SFP+ Ports with console port for accessing the CLI of the switch.	
Switch should have RJ-45 port for out-of-band-management port, USB port for connecting a USB storage device	
Switching capacity should be 168 Gbps or higher or non-blocking architecture. 64 Bytes packet forwarding rate should be 125 Mpps or higher or non-blocking architecture	
Switch should support 802.3af and 802.3at, min POE power budget 370W, MAC table should be at least 16K or higher.	
Switch should be standard 19 inch 1U rack mountable and support internal/external redundant power supply for 1+1 redundancy and load sharing.	
Physical stacking Up to 9 units per stack & Single IP Management (SIM) Up to 32 units per virtual stack	
Switch should have one AC power with 100 to 240 VAC, 50/60 Hz, power supply should be supplied with switch from day 1.	
Switch should have Smart fan design and Operating temperature should be 0 to 50 °C.	
Should have 802.1D STP, 802.1w RSTP and 802.1s MSTP Spanning Tree Protocol and support BPDU Filter, BPDU restriction, Root restriction.	
Support Jumbo Frame up to 9K Bytes or higher and support Loopback detection (LBD) to detect the loop created by a specific ports and IGMP Snooping v1/V2/V3 & IGMP groups 1K or more IGMP groups and require support for IGMP Snooping Fast Leave.	
Should support MLD Snooping v1/V2 & MLD group 1K or more and require support for MLD Snooping Querier and 16 L3 IP interfaces and IPv4/IPv6 Loopback interface, IPv6 Neighbor Discovery (ND), VRRPv3, Equal-Cost Multi-Path (ECMP) and UDP helper.	
Should support Static route for both IPv4 and IPv6, OSPFv1, v2 & v3, RIP V1/V2/ing, Policy-based Route (PBR), support IEEE 802.1Q VLAN with different type of VLAN like Port based, Voice VLAN, Private, Double (Q-In-Q), Multicast VLAN (ISM VLAN for IPv4/IPv6), 802.1v Protocol VLAN, VLAN Trunking, Super VLAN	
Switch should have per-port broadcast, multicast, and unicast storm control to prevent faulty end stations from degrading overall systems performance.	
Should support port security to secure the access port based on MAC address.	
Require prevention of DoS attacks, which include Land, Blat, TCP Null Scan, TCP Xmas Scan, TCP SYNFIN, Ping of Death Attack and TCP Tiny Fragment attack, RADIUS and TACACS+ authentication.	
Should support DHCP snooping and DHCP server screening, DHCP server. 802.1X port based and 802.1X host based access control, Identity-driven Policy (VLAN, ACL or QoS) Assignment.	
Switch should support QoS (quality of service) IEEE 802.1P for traffic prioritization. It should support 8 queues per port.	
Different type of QoS priority like Strict Priority Queue and Weighted Round Robin, Strict + WRR, Congestion control using Weighted Random Early Detection (WRED) or WTD	
Should support Remark 802.1p priority, Able to manage through Fully functional CLI interface. SNMP v1, v2c, v3 and SNMP Traps and Remote Monitoring (RMON).	
Support at least 2K ingress & 512 egress access control entries. ACL based on MAC, IPv4 and IPv6, TCP/UDP port number, User-defined packet content, CPU Interface Filtering. Should support time based ACL, Telnet server, TFTP Client and Secure FTP (SFTP) client for IPv4/IPv6 access.	
Support for DHCP Client support for IPv4/IPv6, DHCP server, DHCP Relay and DNS client. Sntp/NTP protocol for time synchronization, CDP/UDLD, Link Layer Discovery Protocol (LLDP) and LLDP-MED.	
Tenderer should produce Manufacturer authorization letter with the document with minimum One year warranty.	

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