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

ELECTRONIC TENDER DOCUMENT

FOR

Supply and Supervision of Installation, Testing & Commissioning of Switches & Firewall etc. for Railnet Up-gradation work.

(Two Packet)

OPEN E-TENDER NO.RAILTEL/TENDER/OT/CO/DNM/2015-16/Railnet Up-gradation/ Switches & Firewall /291 Dated: 20.10.2015

Cost of E-Tender Document: Rs.10,000/-(Including VAT)

E-Tender Copy No. _____

Sold to _____

RailTel Corporation of India Ltd.
Plot No. 143, Institutional Area, Sector -44
Gurgaon-122003, Ph: 0124-4236085-86, Fax: 0124-4236084

E Tender Notice No.: RailTel/Tender/OT/CO/DNM/2015-16/Railnet Up-gradation/Switches & Firewall/291 Dtd.20.10.2015

RailTel Corporation of India Ltd. (RailTel) invites e-Tenders for **"Supply and Supervision of Installation, Testing & Commissioning of Switches & Firewall etc. for Railnet Up-gradation Work"**.

a)	Opening date of Tender downloading	20.10.2015
b)	Submission date of e-bids	24.11.2015 up-to 1500 hrs.(Online)
c)	Opening of e-bids	24.11.2015 at 1530 hrs.)Online)
d)	Approximate cost of Tender	Rs 08.76 Crore (aprox.)
e)	Earnest Money (EMD)	As per Bid Data Sheet and to be made in favor of RailTel Corporation of India Ltd. in the form of DD payable at New Delhi.
f)	Cost of Tender Document is Rs.10, 000/-(Including VAT) (Rs. 10,500/-, if required by Post). The required amount will be payable by Bank Draft in favour of RailTel Corporation of India Limited, New Delhi.	

Small scale Units registered with NSIC under single point registration scheme are exempted from cost of Tender Documents.

Note: Tender Notice and Tender Document are available on RailTel's website and can be downloaded from www.railtelindia.com or from the e-Tendering portal **https://www.tcil-india-electronictender.com**. For online bid submission the tenderer will have to necessarily download an official online copy of the tender documents from TCIL's e- portal. All future Information viz. corrigendum /addendum/ amendments etc. for this Tender shall be posted on the e-Tendering Portal only. Printed copy of Tender document will not be sold from RailTel office.

The bidder shall bear all costs associated with the preparation, submission/participation in the bid. Purchaser in no way will be responsible or liable for these costs regardless of the conduct or outcome of the bidding process.

Group General Manager/DNM

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CHAPTER-1

OFFER LETTER

RailTel Corporation of India Ltd.
Plot No. 143, Institutional Area,
Opposite-Gold Souk,
Sector-44, Gurgaon-122003

1. I/We _____ have read the various conditions detailed in tender documents attached here to and hereby agree to ABIDE BY THE SAID CONDITIONS. I/We also agree to keep this offer open for acceptance for a period of 120 days from the date of submission and in default thereof. I/We will be liable for forfeiture of my/our Earnest Money. I/We offer to supply various equipment at the rates quoted in the attached schedules and hereby bind myself/ourselves to complete the work of **"Supply and Supervision of Installation, Testing & Commissioning of Switches & Firewall etc. for Railnet Up-gradation Work"** within 180 days from the date of issue of Purchase Order. I/We also hereby agree to abide by the Various Conditions of Contract and to carry out the supplies according to the Specifications for materials and works laid down by the RailTel.

2. A sum of **Rs. 5,00,000/- (Rs. Five lacs)** as an Account Payee Demand Draft in favour of RailTel Corporation India Ltd. No._____ dated_____ issued by _____is herewith forwarded as "Earnest Money". The full value of Earnest Money shall stand forfeited without prejudice to any other rights or remedies if, I/We withdraw or modify the offer within validity period or do not deposit the security deposit (Performance Bank Guarantee) within 15 days after issue of Purchase Order.

SIGNATURE OF SUPPLIER (S)

Date:

CONTTRACTOR (S) ADDRESS

SIGNATURE OF WITNESS:

1.

2.

CHAPTER- 2

SCHEDULE OF REQUIREMENT

SCHEDULE OF REQUIREMENT-A (Supply)

SN	Description	Unit	Qty	Unit Rate		Total cost	
				In Fig	In Words	In Fig	In Words
1	2	3	4	5	6	7	8
1	**DC Site (Delhi) & DR Site (Secundrabad)**						
I	Supply of 24 Port Layer-3 Gigabit Switch with 2x10G SFP for IP LAN as per technical specification given in Chapter-3.	Nos	4				
II	Supply of 24 Port Layer-3 Gigabit Switch for Storage LAN as per technical specification given in Chapter-3 .	Nos	4				
III	Supply of NMS Server in 1+1 (Quad Core Dual Processor server with 16 GB RAM) as per technical specification given in Chapter-3.	Nos	2				
IV	Supply of Performance Monitoring system server (Quad Core Dual Processor server with 16 GB RAM) as per technical specification given in Chapter-3.	Nos	2				
2	**Railnet Core VPN set up**						
	Supply of NMS Server at each RailTel Region (North, West, East and South) in 1+1 (Quad Core Dual Processor Server with 16GB RAM) as per technical specification given in Chapter-3.	Nos	8				
3	**Railnet Up-gradation and Security enhancement at Zone & PU sites (21 Locations). as per technical specification given in Chapter-3.**						
I	Supply of Firewall (2 nos. at each site) as per technical specification given in Chapter-3.	Nos	42				

II	Supply of 48 Port Gigabit Layer-3 POE Switch (2 nos. at each site) as per technical specification given in Chapter-3.	Nos	42				
III	Supply of 5 KVA UPS including 3years AMC Cost as per technical specification given in Chapter-3 .	Nos	21				
IV	Supply of 42U Rack as per technical specification given in Chapter-3 .	Nos	21				
4	**Railnet Up-gradation and Security enhancement at Divisions sites (71 Locations).**						
I	Supply of Firewall (2 nos. at each site) as per technical specification given in Chapter-3.	Nos	142				
II	Supply of 48 Port Gigabit Layer-3 POE Switch (2 nos. at each site) as per technical specification given in Chapter-3.	Nos	142				
III	Supply of 5 KVA UPS including 3years AMC Cost as per technical specification given in Chapter-3 .	Nos	71				
IV	Supply of 42U Rack as per technical specification given in Chapter-3.	Nos	71				
5	**Supply of Miscellaneous items required for installation at sites (Electrical Cabling, CAT5 Cabling, Connector etc.) as per technical specification given in Chapter-3.**	**Lot**	92				
6	**Supply of Spares as per details & technical specification in Chapter-3 .**						
A	**Zone and PU**						
I	Firewall	Nos	2				
II	48 Port Gigabit Layer-3 POE Switch	Nos	2				
III	UPS 5 KVA including 3 year AMC cost	Nos	2				
B	**Divisions**						
I	Firewall	Nos	5				
II	48 Port Gigabit Layer-3 POE Switch	Nos	5				
III	UPS 5 KVA including 3 year	Nos	4				

	AMC cost						
7	**Supply of any other items, equipment, cards considered necessary to meet the end objectives as detailed in the tender document.**	**Lot**	**1**				
	Total (In Rs) of SOR A						

SCHEDULE OF REQUIREMENT-B (Services)

SN	Description	Unit	Qty	Unit Rate		Total cost	
				In Fig	In Words	In Fig	In Words
1	2	3	4	5	6	7	8
1	Installation and Commissioning at DC	Nos	1				
2	Installation and Commissioning at DR	Nos	1				
3	Installation and Commissioning at Zone and PU	Nos	21				
4	Installation and Commissioning at Divisions	Nos	71				
	Total Value of SOR-B						

	Total Value of SOR-A & B						

SCHEDULE OF REQUIREMENT-C (AMC)

SN	Description	Unit	Qty	Unit Rate for One year		Total cost for Five year	
				In %	In Fig	In %	In Fig
1	2	3	4	5	6	7	8
1	Incremental % AMC cost in addition to 3.5 % mentioned in clause 3 of Chapter-4	Years	3				

Note:	
I.	a) Unit rate quoted against SOR above should be CIP destination inclusive of all duties, taxes, insurance and freight etc (with tax break-up as per Performa attached as Annexure-A).The materials as per SOR are required to be delivered within the delivery period as indicated in Bid Data Sheet (BDS, Chapter 5) to the sites as per Annexure-I b) It shall be the responsibility of Tenderer to transport the equipment to site for Installation & Commissioning.
II.	Tenderers should submit the detailed configuration of each type of equipment indicating quantities of various modules/sub modules/cards/Licenses/sub racks including the vacant slots in the sub racks/chassis for further expansion. Detail BOM of each equipment supplied under the contract shall be submitted along with the bid and the same shall be duly vetted by the OEM.
III.	The Tenderer shall attach Unit Rate Analysis of Schedule of Requirements (cost of each sub-assembly, card, module, Licenses etc.) in their Price Bid. The quoted Unit Rates should correspond to the referred unit Rate.
IV.	It is mandatory for Tenderer to quote for all items of the schedule. Any bid not having quote for all the item of the schedule may not be considered.

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Annexure-A

S N	Description	Total Qty	EX-Factory Price (Basic Unit Price exclusive of all levies and charges)	Pkg & Forwarding Charges		Excise Duty		Sales Tax		Frieght & Insurance Charges		Other Charges and Levies	Price Per Unit (all inclusive) for delivery at destination (4+6+8+10+12+13)
				%	Amt	%	Amt	%	Amt	%	Amt		
1	2	3	4	5	6	7	8	9	10	11	12	13	14

Price Schedule for Indigenous Items

Annexure-B

Price Schedule for Imported Equipment

SN	Description	Total Qty	Ex-Factory Price (Basic Unit Price exclusive of all levies and charges)	Unit Price per Unit CIF	Custom Duty/ Anti dumping Duty, if any		Counter Vailing Duty (CVD)		Sales Tax, if applicable		Pkg & Inland Frieght		Inland Insurance		Other Charges and Levies	Price Per Unit (all inclusive) for delivery at destination (4B+6+8+10+12+14+15)
					%	Amt	%	Amt	%	Amt	%	Amt	%	Amt		
1	2	3	4A	4B	5	6	7	8	9	10	11	12	13	14	15	16

Chapter - 2-A

E-tendering Instructions to Bidders

Note :- E-Tendering Instructions to Bidders terms given in others chapters shall be superseded by the terms given in Chapter-2 A.

Submission of Bids only through online process is mandatory for this Tender.

E-Tendering is a new methodology for conducting Public Procurement in a transparent and secured manner. Now, the Government of India has made e-tendering mandatory. Suppliers/ Vendors will be the biggest beneficiaries of this new system of procurement. For conducting electronic tendering, RailTel has decided to use the portal https://www.tcil-india-electronictender.com through TCIL, a Government of India Undertaking. This portal is based on the most 'secure' and 'user friendly' software from Electronic Tender®. A portal built using Electronic Tender's software is also referred to as Electronic Tender System® (ETS).

Benefits to Suppliers are outlined on the Home-page of the portal.

1. Tender Bidding Methodology:

Sealed Bid System - 'Two stage Two Envelope". In this, bidder has to submit Techno-commercial bid and Price-Bid in two envelopes "ON-LINE."

2. Broad outline of activities from Bidders Perspective:

1. Procure a Digital Signing Certificate (DSC)
2. Register on Electronic Tendering System® (ETS)
3. Create Users and assign roles on ETS
4. View Notice Inviting Tender (NIT) on ETS
5. Download Official Copy of Tender Documents from ETS (Important)
6. Clarification to Tender Documents ETS
   - Query to RailTel (Optional)
- View response to queries posted by RailTel, as addenda.
7. Bid-Submission on ETS
8. Attend Public Online Tender Opening Event (TOE) on ETS.
9. View/Post-TOE Clarification posted by RailTel on ETS (Optional), Respond to RailTel's
   Post-TOE queries

For participating in this tender online, the following instructions need to be read carefully. These instructions are supplemented with more detailed guidelines on the relevant screens of the ETS.

3. Digital Certificates

For integrity of data and its authenticity/ non-repudiation of electronic records, and be compliant with IT Act 2000, it is necessary for each user to have a Digital Certificate (DC). also referred to as Digital Signature Certificate (DSC), of Class 2 or above, issued by a Certifying Authority (CA) licensed by Controller of Certifying Authorities (CCA) [refer http://www.cca.gov.in].

4. Registration

To make use of the Electronic Tender® portal (https:// www.tcil-india-electronictender.com), vendor needs to register on the portal (if not registered earlier). Registration of each organization is to be done by one of its senior persons who will be the main person coordinating for the e-tendering activities. In ETS terminology, this person will be referred to as the Super User (SU) of that organization. For further details, please visit the website/portal (https://www.tcil-india-electronictender.com), and click on the 'Supplier Organization' link under 'Registration' (on the Home Page), and follow further instructions as given on the site.

Pay Annual Registration Fee as applicable.

Note: After successful submission of Registration details and Annual Registration Fee (as applicable), please contact TCIL/ ETS Helpdesk (as given below), to get your registration accepted/activated.

TCIL Helpdesk

Contact PersonTelephone/ MobileE-mail ID

Helpdesk Executives :011-2624 1071, 011-2624 1072
ets_support@tcil-india.com

(Mobile Nos. for Emergency Help):
9868393775,9868393717,9868393792.

RailTel Contact-1 (for general Information)

RailTel's Contact Person
Himanshu Kumar:DGM/DNM
Telephone 0124-2714000
Mobile : 9717644201
E-mail ID: himanshu@railtelindia.com

RailTel Contact-II (for general Information)

RailTel's Contact Person
A.K.Sablania: GGM/DNM
Telephone 0124-2714000
Mobile : 9717644015
E-mail ID :asablania@railtelindia.com

5.Bid related Information for this Tender (Sealed Bid)

The entire bid-submission would be online on ETS.

Broad outline of submissions are as follows:

1. Submission of Bid Security/ Earnest Money Deposit (EMD)
2. Submission of digitally signed copy of Tender Documents/Addenda
3. Single Envelope (including Technical +Financial part)
   The electronic envelope consists of Main bid and Electronic Form (both mandatory) and Bid Annexures (Optional).
4. Online response to General Terms & Conditions (GTC) and Special Terms & Conditions (STC)
5. (Optional) Online Submission of modification, substitution bids for technical or financial parts, or withdrawal bid.

NOTE: Bidder must ensure that after following above, the status of bid submission must become "Complete" indicating successful submission of the online bid.

6. Offline Submissions:

The bidder is required to submit the following documents offline to RailTel Corporation of India Ltd, Institutional Area Plot 143, Sector 44, Gurgaon before due date & time of submission of bids specified in covering letter of this tender document, in a Sealed Envelope. The envelope shall bear (the tender name), the tender number and the words 'DO NOT OPEN BEFORE' (due date & time).

a) EMD-Bid Security in Original, in favour of RailTel Corporation of India, Payable at New Delhi. (with Tender No., Name of Firm & Mob. No. written on back side of DD)

b) DD/ Bankers cheque in original against payment of tender fee in favour of RailTel Corporation of India, Payable at New Delhi.. (with Tender No., Due date of Opening of Tender, Name and contact No. of Firm written on back side of DD)

c) Power of attorney to be submitted in accordance with Tender Conditions.

d) In case bidder happens to be a NSIC bidder, the documentary evidence for same shall be submitted.

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

7. Submission of Eligibility Criteria related documents

Eligibility criteria related documents as applicable shall also be scanned and submitted ON LINE. Copy of these documents shall also be submitted before Tender opening date. Bids without these off line submissions will be summarily rejected.

8. Special Note on Security of Bids

Security related functionality has been rigorously implemented in ETS in a multi-dimensional manner. Starting with 'Acceptance of Registration by the Service Provider', provision for security has been made at various stages in Electronic Tender's software. Security related aspects as regard Bid Submission are outlined below:

As part of the Electronic Encrypter™ functionality, the contents of both the 'Electronic Forms' and the 'Main-Bid' are securely encrypted using a Pass-Phrase created by the Bidder himself. Unlike a 'password', a Pass-Phrase can be a multi-word sentence with spaces between words e.g. (I love this World). A Pass-Phrase is easier to remember and more difficult tobreak. It is recommended that a separate Pass-Phrase be created for each Bid-Part. This method of bid-encryption does not have the security and data-integrity related vulnerabilities which are inherent in e-tendering systems which use Public-Key of the specified officer of a Buyer organization for bid-encryption. Bid-encryption in ETS is such that the Bids cannot be decrypted before the Public Online Tender Opening Event (TOE), even if there is connivance between the concerned tender-opening officers of the Buyer organization and the personnel of e-tendering service provider.

Typically, 'Pass-Phrase' of the Bid-Part to be opened during a particular Public Online Tender Opening Event (TOE) is furnished online by each bidder during the TOE itself, when demanded by the concerned Tender Opening Officers who will open the bid. Else Tender Opening Officer may authorize the bidder to open his bid himself. There is an additional protection with SSL Encryption during transit from the client-end computer of a Supplier organization to the e-tendering server/ portal.

(Mandatory Additional Methods of passphrase submission):

Additionally, the bidder shall make sure that the Pass-Phrase to decrypt the relevant Bid-Part is submitted to RailTel in a sealed envelope before the start date and time of the Tender Opening Event (TOE) along with other offline submissions.

9. Public Online Tender Opening Event (TOE)

ETS offers a unique facility for 'Public Online Tender Opening Event (TOE)'. Tender Opening Officers as well as authorized representatives of bidders can attend the Public Online Tender Opening Event (TOE) from the comfort of their offices. For this purpose, representatives of bidders (i.e. Supplier organizations) dully authorized are requested to carry a Laptop and Wireless Connectivity to Internet.

Every legal requirement for a transparent and secure 'Public Online Tender Opening Event (TOE)' has been implemented on ETS. As soon as a Bid is decrypted with the corresponding 'Pass-Phrase' as submitted online by the bidder himself (during the TOE itself), salient points of the Bids are

simultaneously made available for downloading by all participating bidders.

ETS has a unique facility of 'Online Comparison Chart' which is dynamically updated as each online bid is opened. The format of the chart is based on inputs provided by the Buyer for each Tender. The information in the Comparison Chart is based on the data submitted by the Bidders in electronic forms. A detailed Technical and/ or Financial Comparison Chart enhance Transparency. Detailed instructions are given on relevant screens.

ETS has a unique facility of a detailed report titled 'Minutes of Online Tender Opening Event (TOE)' covering all important activities of 'Online Tender Opening Event (TOE)'. This is available to all participating bidders for 'Viewing/ Downloading'.

There are many more facilities and features on ETS. For a particular tender, the screens viewed by a Supplier will depend upon the options selected by the concerned Buyer.

NOTE: In case of internet related problem at a bidder's end, especially during 'critical events' such as - a short period before bid-submission deadline, during online public tender opening event, during e-auction, it is the bidder's responsibility to have backup internet connections.

In case there is a problem at the e-procurement/ e-auction service-provider's end (in the server, leased line, etc) due to which all the bidders face a problem during critical events, and this is brought to the notice of RailTel by the bidders in time, then RailTel will promptly re-schedule the affected event(s).

10. Other Instructions

For further instructions, the vendor should visit the home-page of the portal (https://www.tcil-india-electronictender.com), and go to the User-Guidance Center.

The help information provided through 'ETS User-Guidance Centre' is available in three categories - Users intending to Register / First-Time Users, Logged-in users of Buyer organizations, and Logged-in users of Supplier organizations. Various links are provided under each of the three categories.

Note: It is strongly recommended that all authorized users of Supplier organizations should thoroughly peruse the information provided under the relevant links, and take appropriate action. This will prevent hiccups, and minimize teething problems during the use of ETS.

11. The following KEY INSTRUCTIONS for BIDDERS' must be assiduously adhered to:

1. Obtain individual Digital Signing Certificate (DSC or DC) well in advance of your first tender submission deadline on ETS.
2. Register your organization on ETS well in advance of your first tender

submission deadline on ETS.

3. While registering your organization on ETS Portal of TCIL, pl. make sure that the email id of Super user provided for registration and email-id on which Digital Signature Certificate of the Super user is issued are exactly the same.
4. Get your organization's concerned executives trained on ETS well in advance of your first tender submission deadline on ETS.
5. Bidder should ensure that official copy of tender document has been downloaded by clicking the radio button for confirmation else e-Procurement system will not permit the bidder to participate in the tendering process.
6. Submit your bids well in advance of tender submission deadline on ETS as there could be last minute problems due to internet timeout, breakdown, etc.

12. Minimum Requirements at Bidders end

- Computer System with good configuration (Min P-IV, 1 GB RAM, Windows XP)
- Broadband connectivity.
- Microsoft Internet Explorer 6.0 or above
- Digital Certificate (s) for users.

13. Vendors Training Program

One day training (10:00 to 17:00) on how to use the ETS Portal for e-Tendering would be provided. Training is optional. However, if a vendor has not already attended ETS Vendor Training earlier, it is highly recommended that the vendor attends this training positively to be able to submit the e-Tender smoothly without any problem.

Vendors are requested to carry a Laptop and Wireless Connectivity to Internet while attending the ETS Vendor Training.

Tentative Dates

Date of uploading of Tender document + 7 days

Venue

RailTel Corporation of India Limited,

Plot No. 143, Sector-44,
Opp. Gold Souk Mall,
Gurgaon -122003.

Vendors Training Charges :Rs. 2,500/-(Per Participant) per training day (plus Service Tax as applicable), i.e., Rs. 2,809/- Per Participant.
Mode of Payment of Fees: DD drawn in favour of M/s TCIL, New Delhi & payable at New Delhi.

* * * * *

CHAPTER-3

A. TECHNICAL REQUIREMENTS & SPECIFICATIONS FOR RAILNET UPGRADATION

1) Indian Railways is using a Enterprise Wide Area Network called Railnet as an MPLS based VPN on RailTel's core MPLS network. This network provides network connectivity between Railway Board and Zonal Railways, Production Units, Centralized Training Institutes, RDSO, CORE, RAILNET network is a platform providing various services i.e. Internet, VoIP, Mail, Web etc. to Indian Railway offices. Railnet is also being used for providing internet bandwidth to Railways from Railnet gateways at Delhi, Mumbai & Secundrabad with backup gateway at Kolkata . Railways entire trunk network is presently working on RailTel's NGN network.

2) Through this work Railways intends to upgrade its entire Railnet infrastructure to high capacity network with following objective:

   (i) The network will be used for voice traffic of Indian Railways as well.

   (ii) Network shall be very reliable, robust and should provide very high up time.

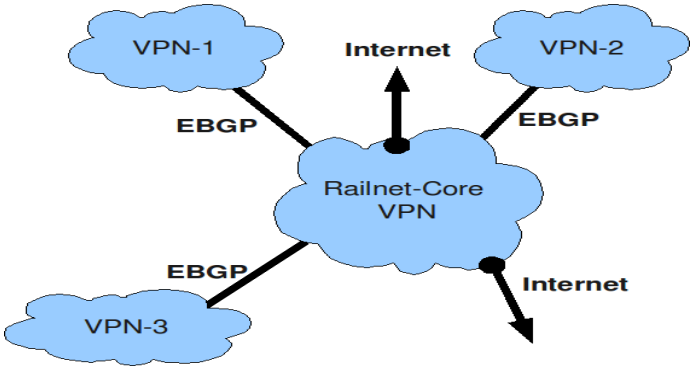
   (iii) A lot of enterprise applications are being implemented on Indian Railways and this network will be used to deliver these applications to the user.

   (iv) The network should be future ready.

3) The brief description & broad design of components covered under this work are as under:

(i) Routing Architecture and Railnet Core VPN setup

New-Railnet will be extended to all stations of Indian Railways in due course. Hence, the routing architecture for the same shall be scalable as well as flexible enough to allow efficient routing and route control. It is hence suggested that each of the zonal railways shall have its own routing Autonomous System (AS). Each AS should use OSPF as its internal routing protocol and should use IBGP as the main route exchange protocol.
A layer-3 MPLS-VPN called Railnet-core shall be made on RailTel 's MPLS network that should connect to all the different zonal AS. Each zonal AS should connect to Railnet-core at a minimum of two locations using different label edge router (LER) of RCIL. This will enhance the reliability of the network. EBGP should be used to exchange routes between the Railnet-core and Zonal AS.
Railway Board, RDSO and RSC/BRC should constitute independent AS and shall get connected to the Railnet-core directly. The other CTIs and PUs should be in the AS of their zonal railways and shall route data through the zonal EBGP speaking router. The Railnet-core should use IPv6. IPv4 data should be tunneled through the IPv6 Railnet-core using standard protocols. The zonal AS shall use IPv4 as of now but should support the full IPv6 stack so that migration to IPv6 can be done easily in due course. The scheme is depicted above.

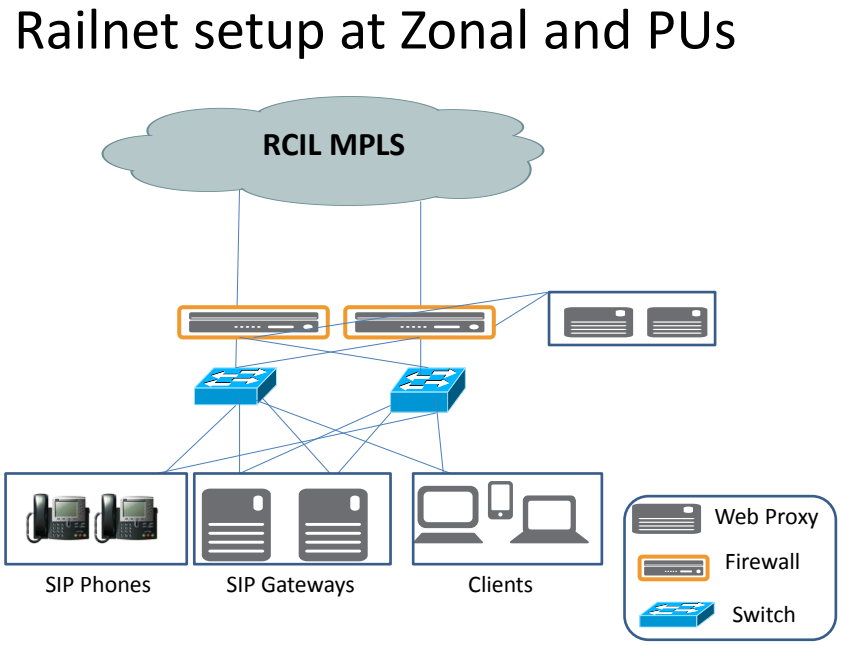


To cater to likely heavy Internet and VPN (Data and Voice) traffic of Railnet, RailTel plans to create Core VPN spread across pan India Locations by providing Carrier grade Routers in RailTel POPs (Same will be provided by RailTel) . Internet bandwidth for Railnet users on subject broadband network will be supplied by RailTel and distributed to various Railnet on proposed Core VPN Network.

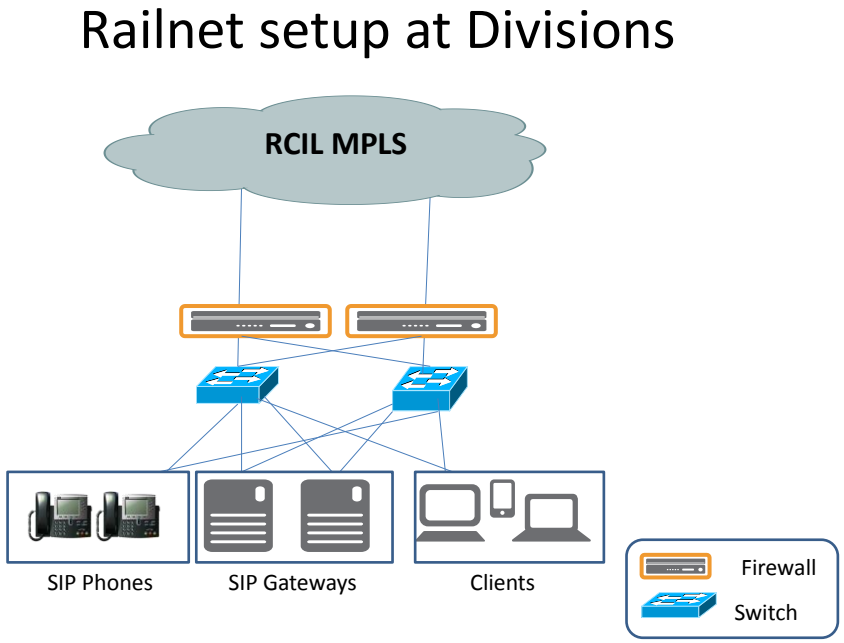
(ii) Up-gradation of Railnet and Security System at zonal & Divisional headquarters along with SIP gateway setup and other miscellaneous items.

At the zonal Railways, Divisions and PUs the Railnet setup shall be as under:

Zonal Railways & PUs



Divisions



All zonal railways should be provided Firewalls with Routing functionality supporting IPv6 and BGP so that these can get connected to the Railnet core network as outlined above.

New-Railnet at divisions shall have two firewalls with Router functionality in fully redundant mode (hot standby) in the divisions as well as the zonal Railways. Three firewall zones shall be implemented namely – internal, external and DMZ. Default policies on the firewall shall ensure no access to the machines in the internal zone unless the session has been initiated by the machine in the internal zone. All the servers that may require access from external zone (even for maintenance and support) should be placed in the DMZ of the firewall.
The firewalls shall also do the traffic shaping and prioritization of the traffic. This will allow voice and video traffic to be given higher priority as compared to other data for both incoming & outgoing traffic.
It is suggested that generic server platform for hardware and software based firewall should be used.

(iii) NMS

Monitoring tools are essential for satisfactory & swift management of Railnet services in proposed RAILNET UPGRADATION network. Following features would be required in NMS:

i. Alarm Management
ii. Fault Management
iii. Graphing and reporting of Railnet services

(iv) QUALITY ASSURANCE PROGRAMME AND IMPLEMENTION METHODOLOGY

The tenderer with quality assurance should prepare Implementation Methodology covering:

a) Schedule of Factory Acceptance Test (FAT), supply, installation, SAT (Site Acceptance Test), trial runs, commissioning etc.
b) Allocation of manpower for different activities.
c) Submission of PERT chart indicating completion of various activities within targeted time frame.

(v) MANUFACTURING, SUPPLY AND STORAGE OF EQUIPMENT

The tenderer will be fully responsible for Manufacturing, FAT, Supply of Equipment/cards/interfaces and all related items for installation and commissioning of the network including the following:

a) Integration with existing Network as required.
b) Spares required for Commissioning, maintenance supervision & warranty period shall be maintained by the Contractor at his own cost.
c) All necessary cables and connectors required.
d) The tenderer shall be responsible for transportation and storage of Equipment and all other items required for Installation and Commissioning of the network to RailTel's stores/sites as advised.

1.2.4 SITE PREPARATION

1.2.4.1 RailTel' s/Railway Responsibility

Following shall be arranged by RailTel: -

i) For Railway Locations sufficient Space for Rack in housing and UPS in housing .Accessories of Rack & UPS has to be supplied by the tenderer for in housing equipments .
ii) AC power supply required for UPS .
iii) Earthing of value less than 1ohm required for equipment.

- AC power supply will be made available by Railway at locations adjacent/near to the UPS Equipment. Earthing will be made available on earthing bus- bar on the wall in equipment room. Extension of power supply & earth to the Equipment, Racks/Sub-racks is the responsibility of the Bidder.

Power supply from two independent sources (approximate 30 meter distance) shall be required to be extended to equipment.

Note:
a) Requirement of power supply and load shall be advised by the contractor for each type of equipment/ Site for tendered capacity and Ultimate capacity.

b) Before commissioning of the equipment suitability of available power supply from Railway shall be required to be verified and certified by the contractor and corrective measures if any advised to RailTel/Railway. Once the equipment is switched on, the responsibility for reliability and warranty shall rest with the tenderer and no responsibility shall be assigned to RailTel/Railway.

1.2.4.2 TENDERER's Responsibility

The tenderer will be responsible for supply & Installation and Commissioning of complete work for this tender including the System design of network and integration with the existing network, wherever required. It shall be the responsibility of Supplier to transport the equipment to site for the Installation & Commissioning. List of sites/nodes will be shared by respective Regions with the successful tenderer.

1.2.5 OUTSIDE PLANT ACCEPTANCE

The tenderer should check and ascertain that the 230V AC power supply and earthing arrangement (value less than one ohm) existing at the respective nodes meet the requirement of equipment proposed to be installed. Augmentation required if any may be clearly brought out by tenderer.

1.2.6 INSTALLATION, INTEGRATION, TESTING, TRIAL RUN AND COMMISSIONING OF EQUPEMENTS NETWORK

The Tenderer shall be fully responsible for Quality Assurance of equipment & other network elements and supervision of following:-

a) Installation and integration of the above said equipment/ items as per System design
b) Integration with existing network
c) Testing of the Network as specified in the document
d) Trial run of the network
e) Commissioning of Network

1.2.7 TRAINING OF PURCHASER'S PERSONNEL

Training on the equipment and network operation shall be provided by the Tenderer .

1.2.8 FINAL COMMISIONING

The Railnet Up-gradation Network shall be considered to be commissioned only after successful completion of the SAT, Trial Run, successful completion of 12 months of Maintenance Supervision after issue of PAC and issue of Final Acceptance Certificate (FAC).

Any item of Tenderer's goods/services not specifically mentioned, but considered essential for completion/commissioning of the work in all respects shall be deemed to be included in the scope of work. The tenderer may bring out any additional requirement and quote the price for the same as per the relevant

SOR item, otherwise, it shall be required to be supplied by the tenderer free of cost.

1.3 GENERAL SYSTEM GUIDELINES

a) Tenderer shall be responsible for the successful completion of the project.

b) Purchaser/Engineer reserves the right to modify, revise, and alter the specifications of equipment system prior to acceptance of any offer.

c) If during the course of execution of the work any discrepancy or inconsistency, error or omission in any of the provisions of the contract is discovered, the same shall be referred to the Purchaser/Engineer who shall give his decision in the matter and issue instructions directing the manner in which the work is to be carried out. The decision of the Purchaser/Engineer shall be final and conclusive and the Tenderer shall carry out the work in accordance thereof.

1.4 TECHNICAL RESPONSE

The technical response shall be fully comprehensive and detailed and will include detailed guaranteed specifications of the equipment and systems to be supplied. Marginal performance shall not be accepted.

1.4.1 FEATURES AND CAPABILITIES OF EQUIPMENT

The succeeding specifications contain the necessary requirements of RailTel with regard to the features and capabilities of the equipment to be offered by the Tenderers. These will be carefully studied and commented upon by the Tenderer. These should not be treated as maximum specifications.

1.4.2 COMPLIANCE TO TECHNICAL REQUIREMENTS

1.4.2.1 CLAUSE BY CLAUSE COMPLIANCE

In the offer, the Tenderer shall include statement of clause by clause compliance of the tender document and sufficient documentation such that RailTel can validate the compliance statements. In the statement of compliance, the Tenderer shall state:

a) "FULLY COMPLIANT," if systems and functions offered fully meet the tender requirement.

b) "PARTIALLY COMPLIANT," if systems and functions offered meet the tender requirement partially. The Tenderer shall state the reason why the offer is partially compliant. However, if the Tenderer is able to fulfill the specified requirement later, the time schedule for this shall be stated. In such cases, the Tenderer shall clearly mention the extent to which other requirements or specifications are affected.

c) "NON COMPLIANT," if systems and functions cannot meet the requirements. The Tenderer shall also state the reasons for it.

d) In addition to the above mentioned compliance statements, wherever statement is given for some numerical parameter specified in tender, then Tenderer shall

state the actual numerical value of specification as met by the offered systems/equipment.

1.4.2.2 NIL OR UNCLEAR RESPONSE STATEMENTS

In case of nil or unclear statements of compliance for any specified requirement, RailTel will interpret that particular requirement as being "NON COMPLIANT."

1.4.2.3 VARIANCE FROM SPECIFIED REQUIREMENTS

In case of variance of the offered equipment from the specified Technical requirements, the decision of RailTel on whether the equipment offered is responsive to the bid requirements shall be final and binding upon the Tenderer.

1.4.2.4 DETAILED TECHNICAL INFORMATION

Deleted

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CHAPTER-3

B. NETWORK REQUIREMENTS AND EQUIPMENT SPECIFICATION

Note :-

1. It may kindly be noted that 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.

2. The proposed Hardware/Appliance offered by the respective OEM of the same series/family from the same OEM should have been satisfactorily working in Government/PSU or Class-A/Tier-1 Telecom Service provider in India as on date of opening of tender. The documentary evidence or other such documents so as to establish the criteria mentioned above will have to be submitted along with bid.

3. If required, POC (Proof of concept) for the offered Equipment shall be done at time of technical evaluation. The eligibility of offer will be considered only after satisfactory POC of the offered Equipment for verifying the technical specifications.

4. OEMs of Hardware/Appliance should be having valid ISO 9000 & ISO 14000 certification.

5. OEMs or OEM service partner should have their spare depots/Service Centre in four metro cities in India .Spare depots/Service Centre should be operational from last three year. Relevant document in support of the same shall be submitted.

6. The OEM of Hardware /appliance of Switches and Firewall should have figured in latest Gartner Report in field of Servers/Security/LAN .

7. Tender specific authorization from the OEM is required for the bidder to participate in the bid.

8. All the equipment should be IPv6 ready from Day One. All the hardware and Software for the same should be provided with the system.

9. OEMs or OEM service partner should have 24*7 TAC support in India. Relevant document in support of the same shall be submitted.

10. Bidder/OEMs should guarantee that the systems delivered to the RailTel are brand new, including all components. All hardware must be supplied with their original and complete printed documentation. Line by line compliance of the technical conditions should be submitted by the bidder and vetted by respective OEMs on their letter head duly signed by Authorized signatory.

11. All the Switches and Router (If part of Solution) shall be of the same make (OEM).

12. All the Server Hardware (If part of Solution) shall be of the same make (OEM).

1. 24 Port Layer-3 Gigabit Switch with 2x10G SFP+/XFP for IP LAN

a. 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.

b. 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.

c. Switch shall have built in power on diagnostics system to detect hardware failures.

d.

e. Switch should have inbuilt dual redundant AC power supply voltage range of 110 – 240 VAC.

f. Switches shall have suitable Visual Indicators for diagnostics and healthy /unhealthy status of ports & modules.

g. Switch shall have 24 Nos. 1/10G SFP+ auto sensing ports with additional trunk 2 Nos. of min 10 Gigabit SFP 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.

h. Switch shall have minimum of 240 Gbps (full duplex) forwarding bandwidth at layer 2 switching fabric.

i. Switch shall have minimum 360 million packets (64 Byte packets) per second forwarding rate.

j. Switches shall have a minimum of 16000 MAC address space.

k. It should be possible for the switches to be mounted on a 19-Inch rack. All accessories required for this mounting should be supplied.

l. Should support jumbo frame.

m. Should support IPv4 routing (Static and RIP/OSPF)

n. For each Switch , bidder has to quote four SFP+ LX (10 km) of `10GE single mode.

o. 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. Should support Optical Transceiver Digital Diagnostic Monitoring.

xxii. Priority queues: Eight hardware-based queues per port for flexible Qos management

xxiii. Traffic prioritization: Flow-based Qos with internal and external (a.k.a., remarking)prioritization.

xxiv. Bandwidth management: Flow-based bandwidth management, ingress rate limiting; egress rate shaping per port.

xxv. Queue management: Configurable scheduling algorithms — Strict Priority Queuing (SPQ), Weighted Round Robin(WRR) and Deficit Round Robin (DRR).

p. 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 (1 Gigabit Ethernet)
xii. IEEE 802.ah (Ethernet first mile)

q. Switch shall have the following

i. NEBS .
ii. FCC/CE and UL.
iii. Operating System /Software EAL 3 or higher or NDPP certification.

2. Supply of 24 Port Layer-3 Gigabit Switch for Storage LAN.

a. 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.

b. 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.

c. Switch shall have built in power on diagnostics system to detect hardware failures.

d. Switch should have inbuilt dual redundant AC power supply voltage range of 110 – 240 VAC.

e. Switches shall have suitable Visual Indicators for diagnostics and healthy /unhealthy status of ports & modules.

f. Switch shall have 24 Nos. 1/10G SFP+ auto sensing ports with additional trunk 2 Nos. of min 10 Gigabit SFP 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.

g. Switch shall have minimum of 240 Gbps (full duplex) forwarding bandwidth at layer 2 switching fabric.

h. Switch shall have minimum 360 million packets (64 Byte packets) per second forwarding rate.

i. Switches shall have a minimum of 16000 MAC address space.

j. It should be possible for the switches to be mounted on a 19-Inch rack. All accessories required for this mounting should be supplied.

k. Should support jumbo frame.

l. Should support IPv4 routing (Static and RIP/OSPF)

m. For each Switch , bidder has to quote four SFP+ LX (10 km) of 10 GE single mode.

n. 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. Should support Optical Transceiver Digital Diagnostic Monitoring.
xxii. Priority queues: Eight hardware-based queues per port for flexible Qos management
xxiii. Traffic prioritization: Flow-based Qos with internal and external (a.k.a., remarking)prioritization.
xxiv. Bandwidth management: Flow-based bandwidth management, ingress rate limiting; egress rate shaping per port.
xxv. Queue management: Configurable scheduling algorithms — Strict Priority Queuing (SPQ), Weighted Round Robin(WRR) and Deficit Round Robin (DRR).

o. 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 (1 Gigabit Ethernet)
xii. IEEE 802.ah (Ethernet first mile)

p. Switch shall have the following

i. NEBS .
ii. FCC/CE and UL.
iii. Operating System /Software EAL 3 or higher or NDPP certification.

3. Firewall

a) Router functionality requirement

i. The proposed platform shall be an appliance/software based solution with capability to provide internet gateway functions .

ii. The proposed platform should support following backplane capacity and Interface Ports .

Location	**Min Backplane Capacity(Full duplex).**	**Min No. of interface per Router**
Zonal and PUs	24 Gbps throughputs for different sizes such as 64,128,256 byte etc	2 x GE SFP , 2 GE ports and 2 x 10 GE SFP+/XFP ports
Divisions	12 Gbps throughputs for different sizes such as 64,128,256 byte etc	4 x GE SFP and 2 GE

iii. The System shall support dual redundant AC power supply voltage range of 110 – 240 VAC.

iv. The System scaling should be min
- 16K MAC
- 10K IPv4 routes
- 64 VRF Lite or Virtual Router/Firewall

v. The System should be able to Layer 3 (IP) routing and should provide carrier-class reliability, scalability and performance.

vi. The System should provide traffic management with Quality of Service (Qos) and traffic shaping with at least 8 Queues per port.

vii. The System shall support network management based on SNMP v1/v2c/v3, Syslog and Access via CLI.

viii. The System should support Link Aggregation Groups (LAGs) provide increased bandwidth and availability.

ix. The System should support ACL - Access Control List Source and Destination Address Matching.

x. The System should support policy-based routing (PBR).It should also support PBR based on tcp, udp and Qos.

xi. The System shall support Static routes, OSPF, BGP for connectivity .

xii. Should support IPv6 and IPv6 routing (OSPF, BGP) .

xiii. The System Hardware/appliance should have NEBS compliant or EAL-3/4 or NDPP certification.

xiv. The System Hardware/appliance Shall be temp hardened with a range of -0 to 45 C .

xv. The System Hardware/appliance should have FCC/CE and UL.

b) Firewall functionality requirement

i. Proposed solution shall be able to deliver minimum 1 Gbps real world Internet Mix throughput . In case the proposed platform does not scale to the above mentioned capacities the bidder should provide free upgrade to platform to meet the performance requirements.

ii. The firewall must have state full session based forwarding architecture.

iii. Shall support at least 500 k concurrent connections.

iv. Shall support at least 10 k connections per second.

v. The firewall shall support Web Filtering.

vi. The firewall shall support category wise Web Filtering .

vii. The firewall shall support zone and ACL based firewall.

viii. The firewall shall support WAN load balancing features

ix. The firewall shall support at least 100 Virtual LANs.

x. Platform shall support RIP and OSPF, BGP to implement in dynamic routing environments.

xi. Shall support DHCP server & DHCP Relay Agent functionality

xii. The platform shall support for Static & Dynamic Network Address Translation and also Port Address Translation.

xiii. The firewall shall have in-built support for IPSec VPNs and SSL VPN

xiv. Shall support NAT and PAT.

xv. Platform shall support high availability using active/ passive.

xvi. Proposed platform shall support policy based NAT, where it is possible to match a condition and then apply NAT.

xvii. Bidder can also offer separate appliance/solution for Web proxy but it should have following min Hardware specifications.

- Proposed platform shall have 2X1G SFP ports & 2X1G GE ports and should have option for 2X10G SFP ports for future up-gradation .
- Proposed platform shall have in built redundant power supply voltage range of 110 – 240 VAC.
- Proposed platform shall have FCC / CE certifications

xviii. Bidder can also offer open source based solution/software based solution for Firewall/Router functionality but it should have following min Hardware specifications.

1	Platform shall have a minimum of two (2) Intel Quad Core or above E5-2600 v3 series CPUs
2	Should have 16 GB DDR4 2133 Mhz Memory
3	There should 24 DIMM Slots for Memory and Memory upgradable to 768 GB
4	Server RAID controller should support the following configurations RAID 0, 1, 5, 6, 10 , 50 and 60 support.
5	Server should offer 2 PCI Express (PCIe) 3.0 slots
6	The integrated management controller should support web user interface for server management; remote keyboard, video, and mouse (KVM); virtual media; and administration with Virtual media support for remote KVM and CD and DVD drives as if local
7	Supports hot swappable redundant fans and redundant Power Supplies (AC 230V/50Hz).
8	Min 2 x 1GE port
9	It should be possible for the equipment to be mounted on a 19-Inch rack. All accessories required for this mounting should be supplied.
10	Proposed Platform shall have Hot Plug min 2 x 300GB SAS 10 K RPM Hardisk .
11	Proposed platform shall have regulatory Compliance ROHS , FCC / UL/CE and 80% Plus Platinum Level for power supplies.
12	OEM should be ISO 9001, ISO 14001 certified.

Note :- Bidder can offer the above functionality through single box solution or multiple box or open source but it should support all functionality of Router and Firewall mentioned above.

4. L3 Switch (48 Port POE)

a. 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.

b. 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.

c. Switch shall have built in power on diagnostics system to detect hardware failures.

d. Switch should have inbuilt AC power supply voltage range of 110 – 240 VAC.

e. Switches shall have suitable Visual Indicators for diagnostics and healthy /unhealthy status of ports & modules.

f. Switch shall have 48 Nos. 10/100/1000 Base –TX PoE plus (PoE+) auto sensing ports with 2 Nos. of 10 Gigabit SFP+ 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.

g. Switch shall have all copper ports should be PoE+ capable and shall have min 350 W power budget .

h. Switch shall have minimum of 68 Gbps line rate forwarding bandwidth at layer 2 switching fabric.

i. Switch shall have minimum 90 million packets (64 Byte packets) per second forwarding rate.

j. Switches shall have a minimum of 16000 MAC address space.

k. It should be possible for the switches to be mounted on a 19-Inch rack. All accessories required for this mounting should be supplied.

l. Should support jumbo frame.

m. Should support IPv4 Static routing and Inter VLAN routing .

n. 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. Should support Optical Transceiver Digital Diagnostic Monitoring.

xxii. Priority queues: Eight hardware-based queues per port for flexible Qos management

xxiii. Traffic prioritization: Flow-based Qos with internal and external (a.k.a., remarking)prioritization.

xxiv. Bandwidth management: Flow-based bandwidth management, ingress rate limiting; egress rate shaping per port.

xxv. Queue management: Configurable scheduling algorithms — Strict Priority Queuing (SPQ), Weighted Round Robin(WRR) and Deficit Round Robin (DRR).

o. Switch shall have support of following Standards

xiii. IEEE 802.1D (STP)
xiv. IEEE 802.1p (CoS)
xv. IEEE 802.1Q (VLANs)
xvi. IEEE 802.1ag (Connectivity Fault Management)
xvii. IEEE 802.1s (MSTP)
xviii. IEEE 802.3x (Flow Control)
xix. IEEE 802.3z (Gigabit Ethernet)
xx. IEEE 802.3ab (1000Base-T)

xxi. IEEE 802.3ac (VLAN Tagging)
xxii. IEEE 802.3ad (Link Aggregation)
xxiii. IEEE 802.3ae (1 Gigabit Ethernet)
xxiv. IEEE 802.ah (Ethernet first mile)

p. Switch shall have the following

i. FCC/CE and UL.
ii. Operating System /Software EAL 3 or higher or NDPP certification.

5. Rack (42 RU)

i. CRCA steel sheets shall be used for fabrication of the rack. Light grey powder coating with thickness of 50-70 microns should be used.
ii. Exterior surfaces should be scratch resistant up to a limit of 50kg.
iii. Steel door/glass trims should be light/dark grey.
iv. Front door shall be lockable and of tinted glass.
v. Provision for top and bottom cable entry at rear should be available.
vi. Fixed louvered slotted side panel shall be available for ventilation.
vii. Rear door shall be of sheet steel and lockable.
viii. Should have wheels (castor) – 2Nos with lock on front and 2 on rear i.e. a total of 4 wheels.
ix. Should have two vertical AC distribution panel with 12 5A points.
x. Should have 5 no. of horizontal cable manager and 2 no. of vertical cable manager.
xi. Should have 2 no. of stationary shelf.
xii. Should be supplied with three packets of mounting hardware.
xiii. Should have height 42 U and width 800 mm & Depth 1000 mm with dual PDU and MCB protection.
xiv. Should be compatible with offered equipments .

6. UPS 5 KVA

S.N	Parameter	Required Parameter
1	UPS Ratings KVA / KW	5 KVA
2	Qty / Configuration	Standalone UPS Unit
3	Back-up	120 minutes

4	Make	to be mentioned by vendor
5	Battery Type /Make	VRLA SMF of Amara Raja/Rocket/ Exide
6	UPS Model No. Offered	to be mentioned by vendor
7	Input /Output Phases	Single Phase + Neutral
8	Technology	True on line UPS with Double Conversion, VFI Technology
9	Paralleling	Parallel able up to 4 units (Required for future expansion of load)
	Rectifier Section	
10	Technology	Fully DSP Based Active Front End IGBT Rectifier.
11	Input voltage	110-276 V (load dependent)
12	Input Power Factor	0.99 @ full restive load
13	Input frequency	45-55 Hz
14	Input Current THDI	<5% with full resitive load
15	DG Set Requirement	Should not be more than 1.25 times
16	Cold Start	UPS can be started on battery without availability of mains
17	Inverter Section	
18	Technology	Microprocessor / DSP based PWM - IGBT based Technology
19	UPS output Power factor	5 KVA
20	Output voltage rating	220/230/240 V – selectable
21	Output voltage regulation	± 1% - 100% linear load condition
22	Output Frequency	± 0.1 hz or better(Battery Mode)
23	Overload Capacity	125% - 150% - 30 seconds (Battery Mode)
24	Output harmonic distortion (Ph/N)	3% THD maximum and 1% any single harmonic for a 100% linear load.
25		5% THD maximum for 100% non linear load.
26	Crest Factor	3:1 minimum
27	Battery	
28	Type /Make	VRLA SMF of Amara Raja/Rocket/ Exide
29	Battery Placement	Suitable Battery Rack and Accessories provided for battery interconnections and UPS to Battery connections etc
30	Battery AH rating & Quantity	120 minutes on 80% load, with minimum 10080VAH . vendor to provide calculations for achieve it (full load test will be performed pre-dispatch of material).

31	Battery Charger Capacity	Capable of Charging Batteries, minimum 4 Amps
32	End of Battery discharge Voltage for battery calculation	1.7 to 1.75 V / cell
33	Bypass	
34	Automatic integral bypass	The integral bypass performs an automatic transfer of the critical load from the inverter to the bypass, in the events of overload, over temperature, or inverter failure conditions with zero transfer time.
35	General	
36	Acoustical Noise @ 1 Meter	Less than 50 dB @ I metre
37	Output wave form	Pure sine wave
38	Display and control	
39	Metered parameters	Input AC voltage
40		Input AC Current
41		Input AC frequency
42		Output AC voltage
43		Output AC current
44		Output frequency / voltage
45	Audible Alarms	Required
46	ECO Mode	Required for improving Efficiency to >96%
47	Efficiency (Normal Mode)	>91% @ full load and battery fully charged.
48	Monitoring ON LAN	SNMP card to monitor & store all the data related to UPS Software Should be compatible to LINUX / Windows . Required software like NMS ,OS and etc should be supplied with UPS .
49	Warranty	As per tender
50	EPO	Emergency Power off contact required in UPS to switch off UPS remotely in event of emergency.
51	Communication	USB/AS400/Relay Card/SNMP Card Options should be available
52	OEM Certifications	OEM should have certification ISO 9000 and ISO 14000

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CHAPTER-3

C. NETWORK MANAGEMENT SYSTEM

Bidder should install and commissioned NMS for monitoring the Railnet Services .

1. The following features/services should support in NMS

1	Network Monitoring	• TCP/UDP Port
		• SMTP
		• POP3
		• IMAP
		• HTTP(S)
		• FTP
		• SSH
		• DNS
		• DHCP
		• SNMP
		• Bandwidth
		• Port State
2	Operating System Monitoring	• Windows
		• Linux
		• Unix
3	Hardware Monitoring	• Routers
		• Switches
		• Firewalls
		• Servers
		• Workstations
		• Printers
		• Environmental Devices
		• Generic Network Elements
4	System Capability	System should able to manage the 1000 Devices .

2. The NMS Hardware should support following Hardware specifications

1	Platform shall have a minimum of two (2) Intel Quad Core or above E5-2600 v3 series CPUs

2	Should have 16 GB DDR4 2133 Mhz Memory
3	There should 24 DIMM Slots for Memory and Memory upgradable to 768 GB
4	Server RAID controller should support the following configurations RAID 0, 1, 5, 6, 10 , 50 and 60 support
5	Server should offer 2 PCI Express (PCIe) 3.0 slots
6	The integrated management controller should support web user interface for server management; remote keyboard, video, and mouse (KVM); virtual media; and administration with Virtual media support for remote KVM and CD and DVD drives as if local
7	Supports hot swappable redundant fans and redundant Power Supplies (AC 230V/50Hz)
8	Proposed platform shall have 2X1GE ports
9	It should be possible for the equipment to be mounted on a 19-Inch rack. All accessories required for this mounting should be supplied.
10	Proposed Platform shall have Hot Plug min 2 x 300GB SAS 10 K RPM Hardisk .
11	Proposed platform shall have regulatory Compliance ROHS , FCC / UL/CE and 80% Plus Platinum Level for power supplies.
12	OEM should be ISO 9001, ISO 14001 certified.

CHAPTER-3

D. EMI, ENVIRONMENT AND POWER SUPPLY

4.1 ELECTROMAGNETIC INTERFERRENCE

Any Telecommunication circuits in the vicinity of AC Traction running parallel to 25 KV AC lines are liable to be affected by AC induced voltage. Therefore, precautions should be taken to eliminate the possibility of induced voltage affecting equipment and human. A large number of sections where MPLS is to be deployed are already electrified with 25 KV AC traction.

Special protective measures (viz. provision of G.D tubes, fuses and earthing etc) are required to be taken for telecommunication lines entering 25 KV substations /switching posts.

Instructions for protection of RailTel/Railway staff/working personnel on signaling and telecommunications installations on 25 KV AC traction shall be strictly adhered to. Precautions are required to be taken on account of following:

i) Proximity of live conductor.
ii) Pressure of return current in Rails.
iii) Induction in all metallic bodies situated close to over head equipment.

The tenderer will also comply to the EMI classification and specification ETS 300 386-1 and 386-2.

4.2 ENVIRONMENTAL CONDITIONS

All equipment, test instruments, special tools and fixtures etc. shall be able to work at the specified parameters under environmental conditions and should be capable of maintaining the guaranteed performance with operational lifetime of 15 years minimum when operating continuously and particularly under the following environmental conditions:

1.	Temperature	OPERATE :For all supplies 5^0 to + 45^0 C guaranteed
2.	Humidity	At any relative humidity upto 85% within the temperature range of 0^0 C to 40^0 C
3.	Altitude	At any altitude upto 2000 m above sea level
4.	Sand and Dust	With a buildup of dust on operational surface to a level such as may occur because of imperfections in the sealing of equipment, housing and conditions prevailing in subtropical desert conditions.
5.	Shock and vibration	Shall withstand transportation and handling by air, sea and road under packed conditions.
6.	Electromagnetic	Shall meet the requirements as per IEC Compatibility

		801 or Equivalent.

4.3 POWER SUPPLY ARRANGEMENT

4.3.1 The equipment shall be capable of working on nominal AC supplied through maintenance free/ low maintenance batteries with voltage varying from - 200V AC to -260 V AC. The equipment shall operate over this range without any degradation in performance. The equipment shall be capable of withstanding voltage spikes of 3 Volts over the maximum voltage.

4.4 PROTECTION AGAINST TRANSIENTS, SURGES AND LIGHTNING:

4.4.1 All the equipment shall be protected from induced current, voltage as per CCITT Regulations against 25 KV AC Catenary carrying 1000 Ampere Current. Protection should be provided against all surge/transient voltages.

4.5 EARTHING

4.5.1 The earthing arrangement shall be provided by RailTel for earthing of optical and digital equipment at the equipment room on a bus bar with value less than one ohm (approx.)..The extension of the same to the equipment rack / equipment using earth cable 16 sq mm (min.) copper of ISI make , will be the responsibility of the Tenderer.

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CHAPTER-3

E. INSPECTION AND INSTALLATION, TESTING & COMMISSIONING

5.1 TESTS AND MEASUREMENTS

All equipments shall be subjected to tests as per technical specification and requirement specified in Chapter-3, Part-B, at manufacturer facility/premises and a test report for each equipment duly signed by the testing authority and accepted by suitable authority shall be submitted along with the equipment.

5.2 TEST CATEGORIES

5.2.1 The following tests shall be conducted for acceptance of the equipment and the system before final acceptance of the system.

i) Factory Acceptance Testing (FAT)
ii) Pre-commissioning test (after installation) for total integrated system.
iii) Site Acceptance Testing (SAT)
iv) Trial Run / Field Trials.

Under exceptional circumstance, if it is not feasible to conduct Factory Acceptance Testing (FAT) at manufacturing facility, the equipment shall be accepted on the basis of certified manufacturer test report. In that case preliminary inspection of the equipment shall be arranged by the vendor at a suitable facility within India and detail inspection at site as per mutually agreed testing procedure. Exemption of inspection at factory premises (FAT) will be at the sole discretion of RailTel.

5.2.2 These tests shall be carried out on all equipment supplied by tenderer including those supplied by sub-vendors, if any. Tenderer shall arrange all necessary test instruments, manpower, test-gear, accessories etc.

5.2.3 All technical personnel assigned by Tenderer shall be fully conversant with the system specifications and requirements. They shall have the specific capability to make the system operative quickly and efficiently and shall not interfere or be interfered by other concurrent testing, construction and commissioning activities in progress. They shall also have the capability to incorporate any minor modifications/suggestions put forward by Purchaser/Engineer.

5.2.4 Test Plan: The Contractor shall submit to Purchaser ‘Test Plans’ well in advance of commencement of actual testing in each of the above mentioned test categories.

The plans shall include:

i) System/Equipment functional and performance description (in short) and Tests to be conducted and purpose of test.
ii) Test procedures (including time schedule for the tests) and identification of test inputs details and desired/expected test results

5.2.5 Test Report: The observations and test results obtained during various tests conducted shall be compiled and documented to produce Test Reports by Tenderer. The Test Reports shall be given for each equipment/item and system as a whole. The report shall contain the following information to a minimum:

i) Test results
ii) Comparison of test results and anticipated/expected (as per specifications) test result as given in test plans and reasons for deviations, if any.
iii) The data furnished shall prove convincingly that:

a. The system meets the Guaranteed Performance objectives
b. Mechanical and Electrical limits were not exceeded.
c. Failure profile of the equipment during the tests are well within the specified limits.

5.2.6 Failure of Cards/Components:

Till the system is accepted by the Purchaser, a log of each and every failure of cards/components shall be maintained. It shall give the date and time of failure, description of failed component/ card with serial no., lot no. etc, circuit, module, component designation, effect of failure of component on the system/ equipment, cause of failure, date and time of repair, mean time to repair etc. Repair/modification done at any point of time at one site shall be carried out by Tenderer at all the sites. Detailed documentation for the same shall be submitted to Purchaser for future reference.

If the malfunction and/or failures of a unit/module/sub-system/equipment repeat during the test, the test shall be terminated and Tenderer shall replace the necessary component or module to correct the deficiency. Thereafter, the tests shall commence all over again from the start.

If after the replacement the equipment still fails to meet the specification, Tenderer shall replace the equipment with a new one and tests shall begin all over again. If a unit/ subsystem/module have failed during the test, the test shall be suspended and restarted all over again only after the Tenderer has placed the Equipment back into acceptable operation. Purchaser's approval shall be obtained for any allowable logical time required to replace the failed component/unit/module/sub-system.

5.2.7 Re-adjustments

No adjustments shall be made to any equipment/cards during the acceptance tests. If satisfactory test results cannot be obtained unless readjustments are made, Tenderer shall carry out only those readjustment needed to ready the equipment/system for continuance of tests. A log of all such adjustments shall be kept giving date and time, equipment, module, circuit, adjustments, reasons, test result before and after adjustment etc. Fresh acceptance tests shall be conducted after the readjustments have been completed.

5.3 FACTORY ACCEPTANCE TESTING (FAT)

Factory acceptance tests shall be carried out after review and approval of FAT procedure/documents as per bid requirements and review of Pre-Factory acceptance results & shall be conducted at the manufacturing facilities from where the respective equipment/subsystems are offered. The factory acceptance testing shall be conducted in the presence of the Purchaser/Engineer. The tests shall be carried out on all equipment/items including those supplied by Sub-vendors and factory acceptance certificates shall be issued. The factory tests shall include but not be limited to:

A) Equipment Testing:

i) Mechanical checks to the equipment for dimensions, inner and outer supports, finishing, welds, hinges, terminal boards, connectors, cables, painting etc.

ii) Electrical checks including internal wiring, external connections to other equipment etc.

iii) Check for assuring compliance with standards mentioned in the specifications.

iv) Individual check on each/module/sub-assembly in accordance with the modes and diagnostics programs of the Tenderer

v) Checks on power consumption and heat dissipation characteristics of various equipment.

vi) Environment testing and other laid down tests in Type Tests plan of the specification of the equipment.

vii) Functional testing

viii) Any other test not included in FAT document but relevant to the project as desired by the Purchaser/Engineer at the time of factory acceptance testing.

All equipments materials fittings and components will be subject to inspection by the purchaser or his representative at the manufacturer's factory/tenderer works before dispatch and no materials shall be dispatched until these are inspected and/or approved.

Under exceptional circumstance, if it is not feasible to conduct Factory Acceptance Testing (FAT) at manufacturing facility, the equipment shall be accepted on the basis of certified manufacturer test report. In that case preliminary inspection of the equipment shall be arranged by the vendor at a suitable facility within India and detail inspection at site as per mutually agreed testing procedure. Exemption of inspection at factory premises (FAT) will be at the sole discretion of RailTel.

B) System Integration Testing

Functional and performance test should be conducted for the complete system/ all major equipment constituting the system (including the equipment supplied by sub-vendors, as applicable) simulating the complete network with appropriate network elements. All the functions of NMS shall be demonstrated in totality (as per requirements/specifications of this document including management of

RAILNET UPGRADATION equipment in respective sections). All equipment shall be connected using the same cables (interfaces/components) as will be used during final installation so that the system can be tested in its final configuration. This testing shall be conducted at the manufacturing facility of the main equipment.

5.4 INSTALLATION

After successful completion of Factory Acceptance Test or acceptance report of equipment on the basis of certified manufacturer test report, equipment shall be sent to site for installation.

All equipment shall be checked for completeness as per the specifications of equipment required for a particular station. Installation shall be carried out in accordance with the installation manuals and approved installation drawings in the best workmanship.

The contractor shall be responsible for ensuring that the work throughout are executed in the most substantial, proper and workmanlike manner with the quality of material and workmanship in strict accordance with the specifications and as per sound industrial practices and to the entire satisfaction of the RailTel.

If during installation and commissioning any repairs are undertaken, the maintenance spares supplied with equipment shall not be used for the repair. Tenderer shall arrange his own spare parts for such activities till such time the system has been finally accepted by the Purchaser. A detailed report & log of all such repairs shall be made available by the Tenderer to Purchaser/Engineer and shall include cause of faults and repair details, within two weeks of fault occurrence.

Tenderer shall supply all installation materials required for proper installation of the equipment. These shall include but not be limited to, all connectors, inter-bay and inter-equipment cables, power/earthing cables, connectors, anchoring bolts, nuts, screws, washers etc. as needed.

The bidder has to ensure that installation of equipment shall be done as to present neat and clean appearance in accordance with approved installation document drawings. All inter bay, power supply and other cables shall be routed through wall mounted cable trays. No cable shall be visible. Equipment installed at one of the site shall be made as model site and Tenderer shall take approval from Purchaser/engineer on various aspects etc.

5.5 PRE-COMMISSIONING

On completion of installation of equipment, the correctness and completeness of the installation as per Manufacturer’s manual and approved installation documents shall be checked by the Tenderer on his own.

A list of Pre-Commissioning tests (same as approved by the Purchaser/Engineer for Site Acceptance Testing) and activities shall be prepared by Tenderer and the test shall be carried out by the Tenderer on his own. After the tests have been

conducted to the Tenderer own satisfaction, the Tenderer shall provide the test results for review by Purchaser/Engineer and then offer the system for Site Acceptance Testing.

During pre-commissioning, if any fault occurs to any equipment or system, Tenderer shall identify the same and provide report/history of all faults to the Purchaser.

Tenderer shall ensure that the spares meant for operation and maintenance are not used during installation and commissioning.

5.6 SITE ACCEPTANCE TESTING (SAT)

On completion of Pre-commissioning, site acceptance testing shall be conducted on the system as per approved SAT procedures and its constituents by the Tenderer under the presence of Purchaser/Engineer.

The tests shall include, but not be limited to the following:

a) Checks for proper installation as per the approved installation drawings for each equipment/item and system as a whole.
b) Guaranteed performance specifications of individual equipment/item.
c) Self diagnostics test on individual equipment
d) Tests on metering and alarm panels
e) Tests on remote alarm transmission and reception
f) System tests on per hop basis and END TO END for the ring/link, all complete.

5.6.1 PROVISIONAL ACCEPTANCE CERTIFICATE (PAC)

On installation of the equipment at each location, the contractor shall certify and advise CNOC along with copy to concern region where equipment has been installed, in writing that the installation is (i) completed (ii) ready for satisfactory commercial service and (iii) ready to be handed over. After successful completion of Site Acceptance Testing by Regions, a report (SAT) shall be forwarded to GGM/DNM. Provisional Acceptance Certificate (PAC) will be issued by GGM/DNM. PAC will not be held back for want of minor deficiencies not affecting the functioning of the equipment. Deficiencies, if any, pointed at the time of issuance of PAC, will be rectified by the contractor within one month.

5.7 DELETED

5.8 TRIAL RUN/FIELD TRIALS

Upon conclusion of the site acceptance testing, the Tenderer shall keep the facilities commissioned for one month for 'TRIAL RUN/FIELD TRIALS'. During this period Tenderer shall provide all specialist Engineers & Technicians including experts at the NMS to maintain the total log, incidents, failures & for assisting site engineer & for total co-ordination. However, the normal operation and maintenance of the system shall be performed by the personnel of the Purchaser trained for the purpose.

If during 'TRIAL RUN/FIELD TRIALS' any defect is noted in the system, the Tenderer shall rectify, replace the same to the satisfaction of Purchaser/Engineer. The decision to repeat the final test or restart the 'Trial / Field Trials' shall be of Purchaser/Engineer depending upon the severity of the defect.

During trial run / field trial, if any fault occurs to any equipment of system, Tenderer shall identity and rectify the same and provide report, history of all faults to the Purchaser.

Ideally, during the 'TRIAL RUN / FIELD TRIALS', no shutdown of the system due to failure of equipment, power supply etc. should happen. A record of all failures shall be kept for each manned/unmanned station and the availability of the system on per hop and end to End basis shall be calculated, accordingly and results submitted to Purchaser/engineer. If the system fails to come up to the guaranteed performance, the Tenderer, within a period of thirty (30) days shall take any and all corrective measures and resubmit the system for another 'Trial Run' of trial period. All modifications, changes, corrective measures, labour etc. shall be at the cost of the Tenderer. In case the date of completion for the second trial run exceeds the time schedule for the project, he shall be liable to pay liquidated damages. If the system fails to reach the guaranteed performance even after the second trial run, the Purchaser shall be free to take any action as he deems fit against the Tenderer and to bring the system to the guaranteed performance with the help of third party at the expense of the Tenderer.

5.9 FINAL ACCEPTANCE

The final acceptance of the works completed shall take effect from the date of successful completion of 12 months of Maintenance Supervision as per clause 2.5 of Chapter 4, after issue of PAC provided in any case that the contractor has complied fully with his obligations in respect of each item under the contract. The Final Acceptance Certificate of all regions against the contract shall be issued by GGM/DNM. Notwithstanding the issue of Final Acceptance Certificate the contractor and the purchaser shall remain liable for fulfillment of any obligation incurred under the provision of the contract prior to the issue of Final Acceptance Certificate which remains unperformed at the time such certificate is issued and for determining the nature and extent of such obligation the contract shall be deemed to remain in force between the parties hereto.

5.10 QUALITY ASSURANCE

i) Tenderer shall submit the details of Quality Assurance program followed by them beginning with raw materials, active, passive and fabricated components, units, sub-assemblies, assemblies, wiring, interconnections, structures etc. to finished product. Tenderer shall obtain and forward the Quality Assurance Program for equipment supplied by Sub-vendor, if any.

ii) The Purchaser/engineer reserves the right to inspect and test each equipment at all stages of production and commissioning of the system. The inspection and testing shall include but not be limited to raw materials. Components, sub-

assemblies, prototypes, production units, guaranteed performance specifications etc.

iii) For inspection and testing, Tenderer shall arrange all that is required e.g. quality assurance personnel, space, test instruments etc. for successful carrying out of the testing by the Purchaser/Engineer, at Tenderer cost, at the Manufacturer's works/tenderer premises/site.

iv) Purchaser/Engineer shall have free entry and access to any and all parts of the Manufacturer's facilities associated with manufacturing and testing of the system at any given time.

v) It shall be explicitly understood that under no circumstances shall any approval of the Purchaser/Engineer relieve the Tenderer of his responsibility for material, design, quality assurance and the guaranteed performance of the system and its constituents.

vi) Tenderer shall invite the Purchaser/Engineer, at least 7 days in advance, of the date at which system shall be ready for Inspection and Testing. All relevant documents and manuals approved Engineering drawings etc. shall be available with the Purchaser/Engineer well in advance of the start of Inspection and Testing.

vii) Purchaser or his representative shall, after completion of inspection and testing to their satisfaction, issue factory acceptance certificates to release the equipment for shipment. No equipment shall be shipped under any circumstances unless a factory acceptance certificate has been issued for it, unless agreed otherwise by Purchaser/Engineer.

5.11 TYPE TEST (deleted)

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CHAPTER-3

F. TRAINING, VENDOR DATA REQUIREMENT, DOCUMENTATION, AND DESIGN GUIDELINES

6.1 TRAINING

Tenderer shall train personnel of Purchaser/engineer in all aspects of offered system.

The training course shall be conducted at the manufacturing facilities from where the respective equipment/subsystems are manufactured/ offered or in India if the firm can arrange full fledged training facilities in case their manufacturing facilities are located outside India.

It shall be explicitly understood, that Purchaser's/Engineer's personnel shall be fully associated during Engineering, Installation, Testing and Commissioning activities and this opportunity shall be taken by Tenderer to impart on the job training in addition to the above training course.

Tenderer offer excludes costs of transportation, lodging and boarding of the trainees which shall be arranged by the Purchaser.

The training course to be conducted at the manufacturing facilities shall be designed to train the trainees in all aspects of System engineering, equipment operation, installation and functional details, theory of operation of equipment, trouble shooting and familiarization with the equipment at card and component level. All equipment used for training shall be identical to those quoted and supplied for site installation in hardware and software versions.

Tenderer shall provide comprehensive documentation, course material, manuals, literature etc. as required for proper training of personnel at his own cost. Consolidated and comprehensive documentation shall be available to each participant. After the completion of course, all such materials shall become the property of the PURCHASER. Tenderer shall update the course material of manuals in case there are any changes owing to revision/modifications in equipment/system specifications.

Tenderer shall, prior to start of training, send complete training program including details of each course, duration, subject matter etc. The Purchaser/Engineer reserves their right to suggest any additions/deletions in the program, which shall be incorporated by the Tenderer at no additional cost.

6.2 VENDOR DATA REQUIREMENT AND DOCUMENTATION

One set of Documentation shall be supplied with each system. In addition, 12 more sets of full documents shall be supplied. All documents and manuals shall be in English language only.

The following documents for the complete system shall be supplied and approved by Purchaser/Engineer in order to start inspection:

a. System description, System configuration diagram & Connectivity diagram

b. Detail technical manual of each type of equipment

c. Equipment interconnection diagram including details of various interfaces, signaling protocols used at each stage.

d. Layout of equipment and space requirements for each station.

e. Installation manual including installation procedure and commissioning.

f. Supervisory configuration, alarm list, operator interface etc.

g. Maintenance manual of each type of equipment containing:

   i. Preventive maintenance procedures.

   ii. Trouble shooting/repairs procedures including failure analysis shall provide exhaustive information about repairs including but not limited to removal, reinsertion of components and cards, repairs, adjustments, tuning, calibration, tools required for a particular operation, test points, including turnaround time for repair and the details of the maintenance support service centre to be furnished in the bid and all other maintenance related details.

   iii. Expansion possibilities of the system without causing deterioration in the system performance.

   iv. Any other data, document not specifically mentioned, but required for the satisfactory testing, installation and commissioning, operation and maintenance of the system shall be provided.

   v. Documents to be supplied after trial runs but before System commissioning (Acceptance of the System by Purchaser/Engineer).

6.3 DESIGN GUIDELINES

i) Equipment shall conform to the similar housing standards and shall preferably be integrated in one 19" rack.

ii) All equipment shall have sufficient number of alarms and supervisory indications and shall be provided with self-diagnostic facilities. All alarms and monitoring & diagnostic facilities shall be built-in & shall be displayed on the front panel of the equipment for ease of maintenance. It shall be possible to transmit these indications, parameters to the control station /NMS on real time basis.

iii) The healthy/unhealthy condition of the units shall be displayed by different color LEDs/Lamps.

iv) For important switches, the maintenance personnel shall provide controls on the front panel with suitable safeguard to avoid accidental operation. Manual changeover should be performed by more than one sequential operating procedure to avoid accidental operation.

v) All equipment shall be immune to EMI; RFI interference generated by any nearby source & shall meet the latest international standards in this regard.

vi) The equipment shall be capable of functioning with minimum maintenance and shall be preferred to have no requirement of any preventive maintenance.

vii) All patch cords shall be provided with connectors matching to the cable used and shall have identification markings.

viii) All sub-assemblies or modules, switches and controls and the circuit components shall be so mounted as to permit their replacement without appreciable disturbance to other components.

ix) If the vendor is not using distributed power supply system on individual module basis then the Power supply cards shall be duplicated (1+1). However one standalone power supply card shall be able to run the system for its entire lifetime.

x) All equipment sub racks, housings shall be provided with antistatic wristbands, if required for safe handling of Cards.

xi) The equipment should have modular design and should be configurable in number of operational modes to perform complex and different network functions without need of any additional software.

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CHAPTER 4

COMMERCIAL TERMS & CONDITIONS

1. Offer letter and Validity of offer

1.1 The bidder shall complete the offer letter (Chapter 1) and the Price Schedule (Chapter 2) furnished in the tender documents, indicating the goods to be supplied, description of the goods, associated technical literature, quantity and prices etc.

1.2 The offer should remain valid for a minimum period from the date of opening of tender including the date of opening as indicated in Bid Data Sheet (BDS) Chapter 5.

2. Warranty

2.1 The warranty would be valid for a period as indicated in Bid Data Sheet (BDS) Chapter 5. The supplier shall warrant that stores to be supplied shall be new and free from all defects and faults in material, workmanship and manufacture 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.

2.2 If it becomes necessary for the contractor to replace or renew any defective portion/portions of the supplies under this clause, the provisions of the clause shall apply to the portion/portions of the equipment so replaced or renewed or until the end of the above mentioned period or twelve months, whichever may be later. If any defect is not remedied within a reasonable time of 30 days, the Purchaser may proceed to do the work at the contractor's cost, but without prejudice to any other rights which the Purchaser may have against the contractor in respect of such defects.

2.3 Replacement under warranty clause shall be made by the contractor free of all charges at site including freight, insurance and other incidental charges.

2.4 Warranty Support

2.4.1 Material for repair during Warranty Period shall be handed over /taken over to contractors engineer at regional NOC's or mutually agreed RailTel PoP location.

2.4.2 During the warranty period, the contractor shall be responsible to the extent expressed in this clause for any defects that may develop under the conditions provided for by the contract and under proper use, arising from faulty

materials, design or workmanship in the plant, or from faulty execution of the plant by the contractor but not otherwise and shall remedy such defects at his own cost when called upon to do so by the Purchaser Engineer who shall state in writing in what respect the portion is faulty.

2.4.3 During the free warranty maintenance period (i.e. One year after PAC & two year after FAC) contractor should stabilize the working of the system. Purchaser has the right to extend the period of supervision of the maintenance free of cost till the system stabilizes and works satisfactorily for a reasonable period of time. If during the time any equipment etc. is to be added or deficiencies are to be rectified to make the system work trouble free the same also will have to be done by the contractor at no cost to RailTel as to make good all the deficiencies.

During this period the bidder should provide the one Qualified (L2 Level) Engineer at CNOC (working 6 days a week for 8 Hrs) and Equipment up time should be 99.99 % for redundant system and 99.95% for non redundant System excluding the dependencies on account of RailTel and unforeseen circumstances. If the Bidder fail to achieve uptime as mentioned, the following penalties will be imposed. It will be calculated on quarterly (3 month) basis and maximum penalties will be 10 % of the cost of Equipment per year.

Service type Parameter	Service Level	Penalties
For redundant system	>= 99.99%	NIL
	Between 99.99% and 99.95%	0.2% of the cost of Equipment
	Between 99.95% and 98.95%	2% of the cost of Equipment
	Between 98.95% and 96.96%	4% of the cost of Equipment
	Between 96.95% to 95%	6% of the cost of Equipment
	< 95%	10% of the cost of Equipment
Non redundant system	>= 99.95%	NIL
	Between 99.95% and 99.9%	0.2% of the cost of Equipment
	Between 99.9% and 98.95%	2% of the cost of Equipment
	Between 98.95% and 97.95%	4% of the cost of Equipment
	Between 97.95% to 95%	6% of the cost of Equipment
	< 95%	10% of the cost of Equipment

Replacement Services

During warranty and LONG TERM MAINTENANCE SUPPORT If the Bidder fails to replace card/Part within 10 Working days, the following penalties will be imposed.

Equipment	Duration of repair	Deduction/Penalties
All Modules and accessories	More than 10 days and up to 15 days	2% of the cost of affected part/module
All Modules and accessories	More than 15 days and up to 30 days	10% of the cost of affected part/module

All Modules and accessories	More than 30 days and up to 45 days	25% of the cost of affected part/module
All Modules and accessories	More than 45 days	100% of the cost of affected part/module

Note:

1. In event of that bidder fails on both service SLA and replacement services the maximum aggregate penalties would be limited to equipment cost.
2. OEM should provide facility to RailTel for direct fault case open on TAC Support in case emergency.

2.5. Maintenance Supervision

2.5.1 After the proposed network is commissioned and placed in service and after Provisional Acceptance Certificate (PAC) is issued, the contractor shall be responsible for proper maintenance supervision of the network free of cost for a period of twelve months from the date of provisional acceptance.

2.5.2 During this period of maintenance supervision if any lacuna is noticed in the functioning, as a result of any deficiency in work, the contractor will rectify the same at no cost to RailTel. During such rectification if any faulty equipment/modules need replacement or repair, they shall be provided by the contractor from the set of equipment or modules that the contractor should bring to the site of installation in addition to all the materials to be supplied against this contract. Use of spare modules covered under the Schedule of material of this tender shall not be permitted to be used during installation, commissioning and period of maintenance supervision. During this period the bidder should provide the one Engineer at each region. The Engineers will be responsible for following services during maintenance supervision

- Network Monitoring and Surveillance
- Fault Management
- Network Performance Management
- Routine & Preventive Maintenance of in-scope MPLS/ Railnet Upgradation Network Elements
- Configuration Changes
- Back-up/Disaster Recovery
- On call support for Field operations to support other locations.
- Secure MPLS/ Railnet Upgradation Network components

2.5.3 To summarize, the total period of warranty as per BDS in Chapter-5, will comprise of first 12 months of Maintenance Supervision (after issue of PAC) extendable by RailTel for reasons as explained, as per para 2.5 above, post which FAC will stand issued. Issue of FAC will be followed by 24 months of warranty as per para 2 & 2.4 above.

3. **Long Term Maintenance Support**

3.1 Tenderer (OEM) shall provide maintenance support after successful completion of the warranty obligations for a minimum period of 5 years. The long term maintenance support shall be comprehensive and include all hardware and software of equipment, NMS etc. supplied against this contract. RailTel should be extended the benefits of periodical software patches/updates made by OEM on the system from time to time for equipment security/performance without any additional cost to RailTel. During this period the scope of work as mentioned in clause 2 above & its sub clauses except clause 2.5 above will be applicable. This includes the provision of a Qualified Engineer for Level II support at CNOC. The Engineer will be responsible for following services during maintenance supervision

- Network Monitoring and Surveillance
- Fault Management
- Network Performance Management
- Routine & Preventive Maintenance of in-scope MPLS/Railnet Upgradation Network Elements
- Configuration Changes
- Back-up/Disaster Recovery
- On call support for Field operations to support other locations.
- Secure MPLS/Railnet Upgradation Network components

3.2 Tenderer/OEM(through its Indian subsidiary), shall be paid @ 3.5% of supply cost per annum towards Long Term Maintenance Support after completion of warranty period, to undertake repairs/replacements of all type of module/ card/assembly/ subassembly and update/upgrade of software released during this period and /or which may fail in the network after the warranty. Only incremental cost in % over and above this, if perceived by the OEM and Tenderer, may be indicated in Schedule of Requirement and shall be added to the equipment cost towards evaluation of tender. If however the tenderer feels that his AMC Cost is less than 3.5% per annum, he should give suitable discount in equipment pricing. For AMC he will be paid @ 3.5% per annum only. If the Tenderer quotes a higher base rate for AMC, he will be paid at his quoted rate per annum and five year differential cost shall be added to offered cost for evaluation. AMC would have to be valid for minimum period of 3 years after the warranty.

In case tenderer quotes AMC rates lower than 3.5%, no advantage will be given to him for evaluation purposes. In case the tenderer wins the contract his cost will be reduced by differential (w.r.t. 3.5%) AMC rates & he will be paid accordingly. AMC charges to him, however be paid only @ 3.5% per annum.

3.3 Separate agreement for AMC (Long term Maintenance Support) before expiry of warranty period shall be entered with OEM/the authorized partner of OEM by RailTel. A fresh Bank Guarantee valid for five years for 10% of the Long Term Maintenance Support cost of five years quoted by the tenderer, shall be required to be submitted by bidder for due fulfillment of long term maintenance support obligation.

3.4 Quarterly payment for AMC Charges would be made by RailTel after successful completion of AMC Services of that quarter and on the certificate furnished by concerned RailTel representative of the CNOC.

Note: The acceptance of the above clause is mandatory and specific acceptance from OEM is required to be enclosed as per Form no.3. Any deviation / non acceptance will lead to rejection of the bid summarily.

4. Delivery Period

The materials as per SOR are required to be delivered within period as indicated in Bid Data Sheet (BDS, Chapter 5) to the site /transported to different locations which will be provided by RailTel to the successful bidder.

Road permit will be facilitated by RailTel and shall issue necessary request letter etc. Tenderer are required to obtain the road permit. However, it has no bearing on delivery period.

4.1 RailTel Region's Details:

SN	Region	Head Office	Address
1	Northern Region	New Delhi	Executive Director 10th Floor, Bank of Baroda Building, 16, Sansad Marg , New-Delhi-110001. Fax: +91-11-23311711, Tel: +91-11-23311707 Email: kabalsingh@railtelindia.com
2	Eastern Region	Kolkata	Executive Director 3rd Floor, Chatterjee International Centre, 33A, Jawaharlal Nehru Road, Kolkatta-700071.Fax: +91-33-44041490, Tel:+91-33-44041499, Email: pradeep@railtelindia.com
3	Southern Region	Secunderabad	Executive Director 2nd Floor, B-Block, Rail Nilayam, Secunderabad-500071. Fax: +91-40-27820682, Tel: +91-40- 27822609 Email: goelshailendra@railtelindia.com
4	Western Region	Mumbai	Executive Director Western Railway Microwave Complex, Senapati Bapat Marg, Mahalaxmi, Mumbai-400013 Fax: +91-22-24923913, Tel: +91-22-24923907, Email: bstahim@railtelindia.com

5. Payment Terms

5.1 Payment shall be made in Indian Currency (Rs) . 75% payment of the value of the supply items would be made on receipt of material by the consignee(at site / the stores, to be decided by CNOC) duly inspected and on submission of the following documents subject to any deductions or recovery which RailTel may be entitled to make under the contract:

- Invoice
- Delivery Challan
- Excise Gate pass/Excise/Custom Invoice
- Packing list.

- Factory Test Report/Certified manufacturer Test Report
- Purchaser's Inspection certificate
- Consignee receipt
- Warranty certificate of OEM
- Insurance certificate
- Certificates duly signed by the firm certifying that equipment/ materials being delivered are new and conform to technical specification.

15% payment of the value of Supply items of the PO shall be made by RailTel on Installation & Commissioning at site, 5% payment of value of Supply items of the PO on issue of Provisional Acceptance Certificate (PAC) and the last 5% payment of the value of Supply items of the PO shall be made by RailTel on issue of Final Acceptance Certificate (FAC) which will be issued by GGM/DNM.

15% payment of value of supply items of the PO which could not be installed within 90 days due to site readiness or other reason on account of RailTel will be made and remaining (5% + 5%) on issue of PAC and FAC.

RailTel shall make payments generally within 30 days from the date of invoice post submission with required documents as per contract.

5.2 Deleted.

5.3 Deleted.

5.4 Accounting/Bill passing unit for SOR for supplies is Corporate Office. All Bills shall be submitted to the GGM/DNM for certifying and verification and onwards submission to Dy. GM/Finance of RailTel Corporate Office for releasing the payment.

5.5 Form "C" shall be issued for respective stations, if required, by respective Executive Director of the Region only.

5.6 The breakup of taxes has to be furnished and same should be reflected in the bills so that any CENVAT/input credit can be availed by RailTel.

5.7 Payment of Services Items

5.7.1 Payment of service items shall be made in Indian Currency (Rs.) only. 90% payment of SOR item towards "Installation, Testing & Commissioning per site" shall be made by Corporate Office on successful Installation, testing & commissioning, 5% on issue of PAC and final 5% on issue of Final Acceptance Certificate.

5.7.2 Deleted.

5.7.3 Payment of SOR item towards "AMC/Long term maintenance Support" would be paid quarterly by the Corporate Office after satisfactory completion of AMC Services of that quarter and on certificate furnished by CNOC.

6. Performance Bank Guarantee (Security Deposit)

6.1 The tenderer is required to submit a Performance Bank Guarantee (PBG) within 15 days of the issue of Purchase order @ 10% of the value of the PO for the satisfactory performance of materials covered in SOR given in Chapter 2 valid for a period of 4 months beyond warranty period. The earnest money shall be released on submission of PBG. The Performa for PBG is given in Chapter 6

Form No. 1. If the delivery period gets extended, the PBG should also be extended appropriately.

6.2 The Performance Bank Guarantee (security deposit) will bear no interest.

6.3 This PBG would be released after satisfactory completion of contract including warranty period and only after submission of 10 % PBG towards AMC as per clause 3.3 of Chapter 4.

7. Taxes & Duties

7.1 The price quoted in the offer should be firm, fixed indicating the breakup and inclusive of all taxes & duties like import, custom, C.V.D., Anti-Dumping duty(if any), ED & sales tax, VAT etc. The offer should be inclusive of packing, forwarding, freight upto destination, insurance charges.

7.2 The Octroi / entry tax shall be paid extra as per actual on production of proof of payment / document.

7.3 Anti-Dumping duty if applicable on the equipment proposed to be supplied by OEM/Tenderer as per extant instructions of Ministry of Commerce/Finance Government of India, has to be borne by the tenderer and shall be deducted from the amount payable to the contractor at the time of making payment to the firm, if this duty amount is paid to Custom Authority by RailTel.

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

8. Insurance

8.1 The Contractor shall take out and keep in force a policy or policies of insurance from the date, the delivery of material starts (including the transit portion) against all liabilities of the Contractor or the Purchaser. The contractor shall take out and keep in force a Policy or policies of Insurance for all materials covered in schedule of requirement irrespective of whether used up in the portion of work already done or kept for the use in the balance portion of the work until such material are provisionally handed over to RailTel. The goods will be issued by purchaser to supplier and risk of goods shall remain with supplier until the issue of PAC by RailTel. Insurance policy has to be kept valid by the contractor till issue of PAC by RailTel.

8.2 The Contractor should insure the stores brought to site, against risks as required under the Emergency Risk (Goods) Insurance Act in force from time to time up to contract value.

8.3 It may be noted that the beneficiary of the insurance policy should be RailTel or the policies should be pledged in favor of RailTel. The contractor shall keep the policy/policies current till the equipment are handed over to the purchaser. It may also be noted that in the event of contractor's failure to keep the policy current and alive, renewal of policy will be done by purchaser for which the cost of the premium plus 20% of premium shall be recovered from the contractor.

9. Liquidated Damages

The timely delivery is the essence of this tender. Liquidated damages will be applicable at the rate of half percent per week or part thereof for undelivered

portion of SOR subject to a maximum of 10% of the cost of Purchase order for any reason whatsoever attributed to failure of tenderer. RailTel will have the right to cancel the order, place order on alternative source besides levying the liquidated damages as above.

10. Transportation

The rates quoted should be CIP destination. The destination shall be defined POP / nominated office of RailTel in the proposed sections which shall be indicated by RailTel's representative.

11. Statutory Deduction

These will be made at source as per the rules prevalent in the area of work.

12. Qualification Criteria

Qualifying criteria under this clause lays down minimum acceptable qualifications in various areas to ensure that qualified tenderer has necessary experience, technical expertise, equipment and financial and human resources to successfully complete the project. Bids from bidder not meeting these qualification criteria shall be summarily rejected.

12.1. Technical Capability

12.1.1. The Tenderer/bidder should be an Original Equipment Manufacturer (OEM) or Authorized partner of OEM specifically authorized by OEM for bidding in this tender (as indicated in Bid Data Sheet (BDS) Chapter 5). The OEM should have proven facilities for Engineering, manufacture, assembly, integration and testing of offered system and basic facilities with respect to space, Engineering, Personnel, Test equipment, Manufacture, Training, Logistic Supports for at least past three years in the country from where the proposed equipment are planned to be supplied.

12.1.2. The Tenderer/bidder should have supplied and provision of similar offered equipments of Switches and Firewall with satisfactory working as indicated in Bid Data Sheet (BDS) Chapter 5 to Government/PSUs/Telecom Service Providers/Public Listed Company during the last three years from the date of opening of tender.

12.1.3 a. DELETED.

b. The Bidder should have registered office in India for a minimum period of 3 years as on originally scheduled date of bid opening.

c. The Bidder should have authorization from respective OEMs and should submit the vetted BOM from their respective OEMs.

d. The Bidder should have minimum of 3 Technically Certified Engineers on their own rolls trained in OEM technology whose Routers/network equipments are being offered. The Bidder should submit the copy of certificates along with the bid.

e. Each OEM can authorize up to a maximum of three (3) authorized partners to bid the tender.

f. The Bidder or their promoters having equity stake or operating partnership in bidder, should not be holding valid License for Telecom service provider/ISP/NLD, Services License of Government of India for Telecom Operation.

12.1.4 RailTel reserves the right:-

a) To verify, if so desired, the correctness of documentary evidence furnished by the tenderer.

b) To verify the successful operation and performance of qualifying projects and tenderer shall arrange permission for the same.

c) To carry out capability assessment of the bidder(s) including referral to in-house information.

d) RailTel shall not be responsible for any delay in the receipt of tenders and reserves the right to accept/reject any or all tenders without assigning any reason.

12.1.5 The bidder shall furnish documentary proof of backend support including software upgrades and availability of spares for a period of 5 years from the respective OEMs of the products offered.

12.1.6 The tenderer/OEM should submit the details of supply of offered equipment executed as indicated in Bid Data Sheet (BDS) Chapter 5, along with certificates from the original user for whom the project was undertaken certifying the date of award of contract, date of completion, and the present working state of the system which should clearly bring out performance of the equipment. The certificates are to be submitted in original or their true copies duly signed by the tenderer.

12.2. Financial Criteria

12.2.1 a) i) The tenderer should have executed one order of supply/ provision of similar equipment (as defined in Bid Data Sheet) costing not less than the value as indicated in Bid Data Sheet (BDS) Chapter 5 during last preceding 5 financial years (i.e. current year and five previous financial years) from the date of opening of tender. Supply of this value against a single rate contract, during above period, will also qualify for this purpose.

ii) The sum total of the turnover of contractual payment received during the last preceding 3 financial years (i.e. current year and three previous financial years) from the date of opening of tender should be a minimum of the value as indicated in Bid Data Sheet (BDS) Chapter 5.

b) i) Solvency certificate -deleted

ii) Tenderer should produce Audited Balance Sheet and Income statement of all the preceding three financial years.

12.2.2 The tenderer shall furnish such documents as to establish the financial soundness of their company. The latest balance sheet audited or certified by a neutral agency shall be furnished.

12.3 In the event of foreign Original Equipment Manufacturer (OEM), Indian Subsidiary is allowed to participate with the experience and financial credential of parent company with specific authorization for doing so from the OEM. The specific authorization addressed to RailTel should be submitted by the tenderer.

13. Deleted.

14. Consortium & Joint Venture Bids -Deleted

15. System Performance Guarantee

15.1. The tenderer shall give unqualified and unconditional guarantee that when the equipment / material supplied by him is installed and commissioned at site, it shall achieve the desired objective and that in the event of performance of the system when installed not complying with the end objective or with the specifications, he shall provide further inputs to enable the RailTel to realize the end objectives with full compliance of the specifications contained in these documents. No additional payment will be made to the contractor for supply of any additional goods and service required in this regard.

15.2. This certificate in the Proforma given in Chapter 6 Form No. 2, shall accompany the final offer. Absence of this certificate which will form part of the agreement shall disqualify the tenderer automatically.

16. Evaluation of Offer

16.1. For the purpose of relative ranking of offers, all inclusive value for entire supply, supervision of installation, testing & commissioning and warranty period support, training, AMC shall be taken into account.

16.2. Additional features offered by the bidder, over and above the ones asked for in the tender documents, shall not be considered for evaluation of bids.

16.3. The tenderer should make available the offered products, if desired during technical evaluation of offered equipment for testing and benchmarking at any testing facility approved by RailTel.

16.4. The bidders should quote for all items & the offer will be evaluated in totality. The bidders should indicate brand name, type/model number of the products offered. Optional items will be considered for evaluation of offers. The equipment should be supplied as per Technical Specifications given in Chapter-3.

17. Security Considerations & Security Agreement

17.1 While evaluating the tender, regards would be paid to National Defence and Security considerations.

17.2 The directives issued from time to time by the Department of Telecommunications (DoT), Ministry of Communications and IT or any other Ministry of Govt. of India on security considerations shall be applicable to the present tender. Accordingly, as per the extent amendment of the National Long Distance (NLD) Service License Agreement for Security related concerns for expansion of Telecom Services in various zones of the country issued vide Department of Telecommunication, Ministry of Communication and IT, Govt. of India's letter no. 10-54/2010-CS-III (NLD) dated: 31.05.2011, the successful tenderer/OEM shall comply with the provisions stated in the above mentioned directive of DoT and shall have to enter into an agreement with RailTel as per the template agreement between Telecom Service Provider and the vendor of equipment, product and services (available on DoT website). The tenderer must submit a declaration along with their bid.

17.3 The Network for customers

The Network is being provided primarily to meet the requirement of Indian Railways. Accordingly, the network shall take into consideration the National

Security requirement and National Security aspects indicated by the Indian Railways-.

18. Purchaser's Right to Vary Quantities

18.1 The purchaser shall be at liberty to enhance or reduce the quantity mentioned in the purchase order as indicated in Bid Data Sheet (BDS) Chapter 5 without assigning any reasons. The bidder shall comply with such modifications unconditionally provided these are made before completion of the deliveries under the purchase order. Any such change in quantity shall have no impact on the rates mentioned in the purchase order for any such item.

18.2 Deleted.

19. Purchaser's Right to accept any offer / Bid and to reject any or all offer/ Bid

19.1 The Purchaser reserves the right to accept or reject any offer / bid, and to annul the bidding process and reject all offers / bids, at any time prior to award of order without assigning any reason whatsoever and without thereby incurring any liability to the affected bidder or bidders on the grounds for the Purchaser's action.

20. Execution of Purchase Order

20.1 The successful bidder has to submit the copy of the Purchase order duly signed on each page including Annexures & will submit the Performance Bank Guarantee as per Clause no. 6 for due fulfillment of the PO.

20.2 If the successful bidder fails to submit the accepted copy of PO and required PBG within 15 days from the date of issue, it shall constitute a breach of the agreement affected by the acceptance of the tender in which case the full value of the earnest money accompanying the tender shall stand forfeited without prejudice to any other rights or remedies. The Tenderer shall also submit the inspection plan, Implementation plan etc, within this 15 days period.

20.3 In the event of any tenderer, whose tender is accepted, refuses to execute the PO as herein before provided, RailTel may determine that such tenderer has abandoned the Purchase Order and thereupon his tender and acceptance thereof shall be treated as cancelled and RailTel shall be entitled to forfeit the full amount of the Earnest Money and to recover the damages for such default.

21. Annulment of Award

Failure of the successful bidder to comply with the requirement of various clauses of tender document shall constitute sufficient ground for the annulment of the award and forfeiture of EMD in which event the Purchaser may make the award to any other bidder at the discretion of the Purchaser or call for new offers/ bids.

22. Earnest Money Deposit (EMD)/ Bid Security

22.1 The tenderer shall furnish a sum as given in Bid Data Sheet (BDS) Chapter 5 as Earnest Money in the form of Demand Draft from any scheduled bank in India in favour of "RailTel Corporation of India Limited" payable at New Delhi.

22.2 The EMD may be forfeited if a bidder withdraws his offer or modifies the terms and conditions of the offer during validity period and in the case of a successful bidder, if the bidder fails to accept the Purchase order and fails to furnish performance bank guarantee (security deposit) in accordance with clause 6.

22.3 Offers not accompanied with Earnest Money shall be summarily rejected.

22.4 Earnest Money of the unsuccessful bidder will be discharged / returned as promptly as possible but not later than 30 days after the expiry of the period of offer / bid validity prescribed by the Purchaser.

22.5 The successful bidder's EMD will be discharged upon the bidder's acceptance of the purchase order satisfactorily and furnishing the performance bank guarantee in accordance with clause 6.

22.6 Earnest Money will bear no interest.

23. Preference to Domestic Manufacturers for Telecom Equipment

"Preference to domestically manufactured electronic goods in procurement due to security considerations" shall be applicable as per Government of India policy as on the date of opening of price bid. The manufacturer claiming to qualify under the scope of such rules for PMA (Preferential Market Access) must submit the declaration of VA (Value Addition) as required under the issued notification for the specified period ((2012-13,2013-14 & 2014-15).) .

24. Offer/ Bid Prices

24.1. The bidder shall give the prices indicating all levies and taxes, packing forwarding, freight and insurance etc. The basic unit price and all other components of the price need to be individually indicated against the goods it proposes to supply under the tender document as per schedule given in Chapter 2. The price shall be quoted in Indian Rupees or in any major foreign currency for the imported items (FOR/CIP destination). Octroi will be payable at actual on production of proof of payment but delivery within Octroi limits must be done only with prior approval of Executive Director of the Region.

24.2. The breakup of price of each item of SOR in terms of basic Unit price, Excise duty, Sales Tax, Freight, Custom Duty, Forwarding, Packing, Insurance and any other Levies/charges already paid or payable by the tenderer shall be quoted in the SOR Chapter 2. Any changes in statutory duties/taxes after opening of technical bid will be to RailTel's account within the contracted delivery period.

24.3 All prices and other information like discounts etc. having a bearing on the price shall be written both in figures and in words in the prescribed offer form (SOR). In case of difference in words and figures, the amount written in words will be taken into consideration. In the event of any discrepancy between total unit cost and total cost, the value shown in total unit cost will be taken for evaluation purpose.

24.4 Fall Clause:- The tenderer shall undertake that in case the tenderer offers same type of material at a lower price to any other purchaser including Central/State/ Government Organization or Public Sector Undertaking, during the validity of purchase order, the equal benefit of lower prices will be passed on to RailTel. The tenderer will submit an undertaking to this effect while claiming the payment.

25. Clause wise Compliance

25.1. Clause wise compliance statement of the Technical Specifications (Chapter 3) and Commercial Terms & Conditions (Chapter 4) shall be enclosed with the offer along with the technical literature of the material and other documents in support of relevant clauses.

26. Inspection

26.1. Pre-shipment / pre-dispatch inspection shall be carried out at manufacturer's / tenderer's works/site by RailTel's authorized representative. At least part of the material should be offered for inspection within 60 days of issue of confirmed Purchase Order. Traveling, lodging & boarding expenses of RailTel's representative and charges for 3rd party inspection if any shall be borne by RailTel but necessary facilities to carry out tests/witness inspection shall be provided by the manufacturer/ tenderer, free of cost. Under exceptional circumstance, if it is not possible to carry out pre-dispatch inspection at manufacturer's premises, Exemption for the same shall be obtained from competent authority.

26.2 Along with inspection call, the tenderer/manufacturer shall submit details of test procedures, test programme, test parameters together with permitted values, etc., and their Quality Assurance Plan.

26.3 In case material fails during inspection, the fresh lot of material shall be offered without any extra cost, by the manufacturer/tenderer. In such a case, total cost of re-inspection including travel, lodging & boarding of the inspecting officials shall be to manufacturer's/ tenderer's account.

27. Force Majeure

27.1 If during the Agreement, the performance in whole or in part, by either party, of any obligation under this is prevented or delayed, by reason beyond the control of the parties including war, hostility, acts of the public enemy, civic commotion, sabotage, Act of State or direction from Statutory Authority, explosion, epidemic, quarantine restriction, strikes and lockouts (as are not limited to the establishments and facilities of the parties), fire, floods, earthquakes, natural calamities or any act of GOD (hereinafter referred to as EVENTS), provided notice of happenings of any such EVENT is given by the affected party to the other, within twenty one (21) days from date of occurrence thereof, neither party shall have any such claims for damages against the other, in respect of such non-performance or delay in performance. Provided service under this Agreement shall be resumed as soon as practicable, after such EVENT comes to an end or ceases to exist.

27.2 In the event of a Force Majeure, the affected party will be excused from performance during the existence of the Force Majeure. When a Force Majeure occurs, the affected party after notifying the other party will attempt to mitigate the effect of the Force Majeure as much as possible. If such delaying cause shall continue for more than sixty (60) days from the date of the notice stated above, the party injured by the inability of the other to perform shall have the right, upon written notice of thirty (30) days to the other party, to terminate this Agreement. Neither party shall be liable for any breach, claims, damages against the other, in respect of non-performance or delay in performance as a result of Force Majeure leading to such termination.

28. Settlement of Disputes

- Any dispute or difference whatsoever arising between the parties out of or relating to the construction, meaning , scope, operation or effect of this contract or the validity or the breach thereof shall be settled by arbitration in accordance with the Arbitration and Conciliation Act, 1996 as amended and the award made in pursuance thereof shall be binding on

the parties. The venue of such arbitration or proceedings thereof shall be New Delhi.

- All arbitration proceedings shall be conducted in English. Recourse against any Arbitral award so rendered may be entered into court having jurisdiction or application may be made to such court for the order of enforcement as the case may be.
- The Arbitral Tribunal shall consist of the sole Arbitrator appointed by mutual agreement of the parties.
- Each of the parties agree that notwithstanding that the matter may be referred to Arbitrator as provided herein, the parties shall nevertheless pending the resolution of the controversy or disagreement continue to fulfill their obligation under this Agreement so far as they are reasonably able to do so.

29. Governing Laws

The Purchase Order shall be interpreted in accordance with the laws of India. The courts at New Delhi shall have exclusive jurisdiction to entertain and try all matters arising out of this contract.

30. Termination for Default

30.1. The purchaser may, without prejudice to any other remedy for breach of contract, by written notice of default, sent to the Tenderer, terminate this contract in whole or in part.

a) If the tenderer fails to deliver any or all of the goods within the time period(s) specified in the contract.

b) If the tenderer fails to perform any other obligation(s) under the contract; and

c) If the tenderer, in either of the above circumstance(s) does not remedy his failure within a period of 30 days (or such longer period as the Purchaser may authorize in writing) after receipt of the default notice from the Purchaser.

d) In case of any of the above circumstances the RailTel shall pay the supplier for all products and services delivered till point of termination as per terms and conditions of the contract. However any recovery and losses occurred to RailTel will be recovered from Contractor up to the value of contract.

31. Risk & Cost

If the contractor fails to deliver the equipment or honor the contractual commitment within the period fixed for such delivery in the contract, the Purchaser may terminate the Purchase contract in whole or in part, the Purchaser may proceed to purchase, upon such terms and in such manner as it deems appropriate, goods similar to those undelivered at no risk and cost to contractor. However, the security deposit of tenderer shall be forfeited/ Performance Bank Guarantee shall be encashed. The failed tenderer shall not be permitted to take part in the tender for balance work.

32. Termination for Insolvency

The purchaser may at any time terminate the Purchase order by giving written notice to the tenderer, without compensation to the tenderer, if the tenderer becomes bankrupt or otherwise insolvent as declared by the competent court

provided that such termination will not prejudice or affect any right of action or remedy which has accrued or will accrue thereafter to the Purchaser.

33. Rates during Negotiation

The tenderer/s shall not increase his/their quoted rates including payment terms in case the RailTel Administration negotiates for reduction of rates. Such negotiations shall not amount to cancellation or withdrawal of the original offer and the rates originally quoted will be binding on the tenderer/s.

34. Pre- Bid Conference & Clarification Requests

Pre- bid conference for this tender will be held on date, time & venue as given in Bid Data Sheet (BDS) Chapter 5.

It is solicited that the written queries/ clarifications may be sent to the RailTel's office latest by the date as indicated in the Bid Data sheet (BDS) through e-mail to himanshu@railtelindia.com with copy to asablania@railtelindia.com (in word format) & hard copy by post. All relevant clarifications sought will be addressed during the pre-bid meeting.

35. Submission of Offers

35.1. All offers in the prescribed forms should be submitted before the time and date fixed for the receipt of the offers.

35.2. In case the schedule of requirement quoted by tenderer is incomplete with reference to tender document, the offer is liable to be rejected.

35.3. ATTESTATION OF ALTERATION: No scribbling is permissible in the tender documents. Tender containing erasures and alterations in the tender documents are liable to be rejected. Any correction made by the tenderer/ tenderers in his/their entries must be signed (not initialed) by him/them.

35.4. The tenderer shall submit his tender in two copies in sealed cover on specified date & time as mentioned in BDS Chapter 5. Each copy of the tender shall be complete in all respects. The copies should be marked "Original" & "Duplicate". The original tender paper purchased from this office or down loaded from the RailTel web site shall be returned duly signed on each page along with the original offer.

35.5. The offer shall be submitted in two parts, Part-I - Credential Bid (Techno-Commercial Bid) & Part-II – Price Bid. Both bids shall be sealed in separate envelopes and both envelopes put in one large envelope. Both envelopes should bear the Tender No., its description and date of closing/opening.

(a) Part-I "CREDENTIAL BID"; -The bid shall consist of the following:-

1) Offer Letter complete.

2) Schedule of Requirements with quantities but with prices blanked out (this will be a replica of price bid with prices blanked out).

3) Earnest Money in prescribed form.

4) Audited balance sheet duly attested by Notary Public.

5) Constitution of Firm and Power of Attorney.

6) Clause wise compliance to tender conditions.

7) Copies of purchase orders and other documents in support of meeting qualifying criteria.

8) Complete technical data and particulars of the equipment offered, as specified in the Tender papers together with descriptive literature, leaflets, Drawings, if any, complete with list etc.

9) Documentary proof of equipment being proven and working for more than 6 months in India or outside India along with user certificate and Contact Details of user/firm.

10) Technical proposal of tenderer in conformity with system design or alternative proposal of the tenderer, if any.

11) System Performance Guarantee as per Chapter 6 Form no. 2

12) The manufacturer claiming to qualify under the scope of rules for PMA (Preferential Market Access) must submit the declaration of VA (Value Addition) as required under the issued notification for the specified period (2012-13,2013-14 & 2014-15).

13) Any other information desired to be submitted by the tenderer.

Note: The Credential Bid Part-I under no circumstances should contain any rates offered. Otherwise the tender offer shall be summarily rejected. This envelope shall be clearly superscribed with "CREDENTIAL BID (Part-I)" along with the Tender No. and its description in bold letters and sealed.

(b) Part-II "Price Bid" Shall contain the offer letter and the price of each item quoted exactly according to the proforma and schedule of requirements and shall be clearly superscribed with "PRICE BID (Part-II)" along with tender number and its description in bold letters & sealed.

36. Constitution of Firm and power of Attorney

36.1. Any individual(s) signing the tender or other documents connected therewith should specify whether he is signing:-

(a) As sole proprietor of the concern or as attorney of the sole Proprietor.

(b) As a partner or partners of the firm.

(c) As a Director, Manager or Secretary in the case of Limited Company duly authorized by a resolution passed by the Board of Directors or in pursuance of the authority conferred by Memorandum of Association.

36.2. In the case of a firm not registered under the Indian Partnership Act, all the partners or the attorney duly authorized by all of them should sign the tender and all other connected documents. The original Power of Attorney or other documents empowering the individual or individuals to sign should be furnished to the Purchaser for verification, if required.

36.3. The RailTel will not be bound by Power of Attorney granted by the tenderer or by the changes in the composition of the firm made subsequent to the execution of the contract agreement.

36.4. In case where the Power of Attorney partnership deed has not been executed in English, the true and authenticated copies of the translation of the same by Advocate, authorized translators of Courts and Licensed Petition Writers should be supplied by the Contractor(s) while tendering for the work.

36.5. The duly notorised Power of Attorney shall be submitted in original or duly signed.

37. Opening of Tender

37.1. Tenderer's Credential Bid (Part-I) will be opened on specified date & time as mentioned in BDS Chapter 5 of the tender in presence of such Tenderers/ Representatives who choose to be present.

37.2. After scrutinizing Credential Bid, "Price Bid (Part- II)" will be opened on a time and date to be informed separately in presence of those Tenderers who qualify in "Credential Bid (Part-I)" as per qualifying criteria laid down in Clause 12 of this Chapter and who choose to be present.

37.3. Price Bid (part-II) envelops of those Tenderers who are not found to meet tender conditions will not be opened.

38. Non-Transferability & Non-Refundability

The tender documents are not transferable. The cost of tender paper is not refundable.

39. Errors, Omissions & Discrepancies

The Contractor(s) shall not take any advantage of any mis-interpretation of the conditions due to typing or any other error and if in doubt, shall bring it to the notice of the purchaser without delay. In case of any contradiction only the printed rules, and books should be followed and no claim for the mis-interpretation shall be entertained.

40. Wrong Information by Tenderer

If the tenderer/s deliberately gives/give wrong information in his/their tender which creates/create circumstances for the acceptance of his/their tender the RailTel reserves the right to reject such tender at any stage.

41. The envelope shall be addressed to the Purchaser at the following address:

Group General Manager/DNM
RailTel Corporation of India Ltd.
Plot No. 143, Institutional Area,
Opposite-Gold Souk,
Sector-44, Gurgaon-122003

42. The envelope shall bear name of the tender, the tender no. and the words "DO NOT OPEN BEFORE" (due date).

43. Offer / Bid should be delivered to the above address so as to reach up to 15:00 Hrs of due date. The offers / bids shall be opened at 15:00 Hrs on the same day in the above office in the presence of those representatives of the bidders who choose to be present. Offers / Bids received after due date and time shall be dealt as per extant rules.

43.1. In case the date of opening happens to be a holiday, the tender will be received and opened at the same time on the next working day.

44**.** **Limitation of Liability**

Provided the following does not exclude or limit any liabilities of either party in ways not permitted by applicable law:

(a) the Supplier shall not be liable to the Purchaser, whether in contract, tort, or otherwise, for any indirect or consequential loss or damage, loss of use, loss of production, or loss of profits or interest costs, provided that this exclusion shall not apply to any obligation of the Supplier to pay liquidated damages to the Purchaser; and

(b) the aggregate liability of the Supplier to the Purchaser, whether under the Contract, in tort or otherwise, shall not exceed the total Contract Price, provided that this limitation shall not apply to any obligation of the Supplier to indemnify the Purchaser with respect to intellectual property rights infringement.

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CHAPTER- 5

BID DATA SHEET (BDS)

The section consists of provisions that are specific to various Clauses of the tender document COMMERCIAL TERMS & CONDITIONS Chapter 4.

Clause	Description
Clause 1.2	Validity of offer 120 days.
Clause 2.1	Warranty 36 months (comprising of 12 months of Maintenance Supervision vide clause 2.5, between issue of PAC and FAC, followed by 24 months of warranty support under clause 2) .
Clause 3	Delivery Period Delivery and supervision of installation and commissioning within 180 days of issue of Purchase Order
Clause 12.1.1	Technical Capability The Tenderer/bidder should be an Original Equipment Manufacturer (OEM) or Authorized partner of OEM specifically authorized by OEM for bidding in this tender. The OEM should have proven facilities for Engineering, manufacture, assembly, integration and testing of offered system and basic facilities with respect to space, Engineering, Personnel, Test equipment, Manufacture, Training, Logistic Supports for at least past three years in the country from where the proposed equipment are planned to be supplied
Clause 12.1.2	The Tenderer/bidder should have supplied and provision of similar offered equipments of Switches and Firewall with satisfactory working as to Government/PSUs/Telecom Service Providers/Public Listed Company during the last three years from the date of opening of tender.
Clause 12.2.1 a)	Financial Criteria i) The tenderer should have executed one order of supply/ provision of similar equipment of Router/Switches/Firewall/Server with satisfactory working as indicated costing not less than Rs. 3.06 Crore. ii) The sum total of the turnover of contractual payment received during the last preceding 3 financial years (i.e. current year and three previous financial years) from the date of opening of tender should be Minimum of Rs. 13.14 Crore
Clause 18.1	Purchaser's Right to Vary Quantities Up to a maximum extent of +/- 30% of SOR quantity.

Clause	Description
Clause 22.1	Earnest Money Deposit (EMD)/ Bid Security Rs. 5,00,000/- (Rs. Five lacs)
Clause 34	Pre- Bid Conference & Clarification Requests Last date of Submission of Clarification Date: 28.10.2015 Pre- bid Conference date Date: 29.10.2015 Time: 15:00 hours Venue: Corporate Office RailTel
Clause 35.4	Last Date of Submission of Offer Date: 24.11.2015 Time: 15:00 hours Venue: same as above
Clause 37.1	Date of Opening of Tender Date: 24.11.2015 Time: 15:30 hours Venue: same as above

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CHAPTER- 6

Form No. 1

PROFORMA FOR PERFORMANCE BANK GUARANTEE BOND
(On Stamp Paper of Rs one hundred)

(To be used by approved Scheduled Banks)

1. In consideration of the RailTel Corporation of India Limited, having its registered office at 10th Floor, Bank of Baroda Building, 16 Sansad Marg, New Delhi-110001 (Herein after called RailTel) having agreed to exempt ……(Hereinafter called "the said Contractor(s)") from the demand, under the terms and conditions of an Purchase Order No……dated……made between……and……..
for (hereinafter called " the said Agreement") of security deposit for the due fulfillment by the said Contractor (s) of the terms and conditions contained in the said Agreement, on production of a Bank Guarantee for Rs. ……(Rs …….. only). We …… (indicate the name of the Bank) hereinafter referred to as "the Bank") at the request of ……. ……. Contractor(s) do hereby undertake to pay the RailTel an amount not exceeding Rs. ……. against any loss or damage caused to or suffered or would be caused to or suffered by the RailTel by reason of any breach by the said Contractor(s) of any of the terms or conditions contained in the said Agreement.

2. We , ……. Bank do hereby undertake to pay the amounts due and payable under this Guarantee without any demur, merely on demand from the RailTel stating that the amount is claimed is due by way of loss or damage caused to or would be caused to or suffered by the RailTel by reason of breach by the said Contractor(s) of any of terms or conditions contained in the said Agreement or by reason of the Contractor(s) failure to perform the said Agreement. Any such demand made on the Bank shall be conclusive as regards the amount due and payable by the Bank under this guarantee. However, our liability under this guarantee shall be restricted to an amount not exceeding Rs . ……

3. We, …….. bank undertake to pay to the RailTel any money so demanded notwithstanding any dispute or disputes raised by the Contractor(s) / Tenderer(s) in any suit or proceedings pending before any court or Tribunal relating thereto our liability under this present being, absolute and unequivocal. The payment so made by us under this Bond shall be a valid discharge of our liability for payment there under and the Contractor(s) / Tenderer(s) shall have no claim against us for making such payment.

4. We, ……. Bank further agree that the Guarantee herein contained shall remain in full force and effect during the period that would be taken for the performance of the said Agreement and that it shall continue to be enforceable till all the dues of the RailTel under or by virtue of the said Agreement have been fully paid and its claims satisfied or discharged or till RailTel certifies that the terms and conditions of the said Agreement have

been fully and properly carried out by the said Contractor(s) and accordingly discharges this Guarantee. Unless a demand or claim under the 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 Bank) 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.

This Guarantee will not be discharged due to the change in the Constitution of the Bank or the Contractor(s) / Tenderer(s).

(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.

Dated the day of 2015

for ……..
(indicate the name of the Bank)

Witness

1. Signature
Name

2. Signature
Name

Form No. 2

PROFORMA FOR THE SYSTEM PERFORMANCE GUARANTEE
(On Stamp Paper of Rs. One hundred)

The Director,
RailTel Corporation of India Limited

I / We ……. hereby guarantee that the design on the basis of which we have submitted our tender no. …… has been carefully made to conform to the end objectives in the tender documents and to technical specification therein. We further guarantee that in the event of the performance of the system, when installed, not complying with the end objectives or with the specifications contained in the tender documents, we shall provide further inputs to enable the RailTel to realize the end objectives contained in these documents without any additional payment for any additional equipment which may be required in this regard. We further guarantee that all the expenses for providing the additional inputs under the System Guarantee will be borne by us. We further guarantee that these additional inputs will be provided by us to make the system workable within 1 month from the date on which this guarantee is invoked by the Purchaser. The guarantee is valid for a period of one year from the date of commissioning of the system.

(Signature of Firm's Authorized Officer)
Seal

Signature of witness:

1. …….

2. …….

Annexure-1

Form No. 3

PROFORMA FOR THE LONG TERM MAINTENANCE SUPPORT
(To be signed by the O.E.M.)

To

The Director,
RailTel Corporation of India Limited

I / We ……. hereby confirm and accept that against RailTel Tender No. …….., there is a requirement of Long Term Maintenance Support as per Clause 3 . We confirm that Long Term Maintenance Support shall be met by us directly or through Authorized partner, as the case may be based on contracts. I / We have gone through the requirement mentioned in the Tender document and shall provide services for the offered supply items.

(Signature of Firm's Authorized Officer)
Seal

Signature of witness:

1. ……

2. …….

CHAPTER-7

Annexure-I

Type wise/Region wise distribution of Equipment

Sl. No	Name of the Railway zone	Headquarters	Divisions
1	Central Railway	Mumbai	Mumbai, Bhusawal, Pune, Solapur, Nagpur
2	East Central Railway	Hajipur	Danapur, Dhanbad, Mughalsarai, Samastipur, Sonpur
3	East Coast Railway	Bhubaneswar	Khurda Road, Sambalpur, Waltair
4	Eastern Railway	Kolkata	Howrah-I , Howrah-II, Sealdah , Malda, Asansol, Chitaranjan
5	North Central Railway	Allahabad	Allahabad, Agra, Jhansi
6	North Eastern Railway	Gorakhpur	Izzatnagar, Lucknow, Varanasi
7	North Western Railway	Jaipur	Jaipur, Ajmer, Bikaner, Jodhpur
8	Northeast Frontier Railway	Guwahati	Alipurduar, Katihar, Rangia, Lumding, Tinsukia
9	Northern Railway	Delhi	Delhi-I,Delhi-II, Ambala, Firozpur,Lucknow, Moradabad
10	South Central Railway	Secunderabad	Secunderabad, Vijayawada, Hyderabad, Guntakal, Guntur, Nanded
11	South East Central Railway	Bilaspur	Bilaspur, Raipur, Nagpur
12	South Eastern Railway	Kolkata	Adra, Chakradharpur, Kharagpur, Ranchi
13	South Western Railway	Hubli	Hubli, Bangalore, Mysore,FA/F/YNK
14	Southern Railway	Chennai	Chennai,Tiruchirappalli, Madurai, Palakkad, Salem,Thiruvananthapuram
15	West Central Railway	Jabalpur	Jabalpur, Bhopal, Kota
16	Western Railway	Mumbai	Mumbai Central, Ratlam, Ahmedabad, Rajkot, Bhavnagar, Vadodara
17	Metro		
18	Railway Board		
19	Production Unit		RDSO,RSC,IRSET

Note: Locations as mentioned may be changed.

END of Tender Document…

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