

SN-2
105

(भारत सरकार) GOVERNMENT OF INDIA
(रेल मंत्रालय) MINISTRY OF RAILWAYS
(रेलवे बोर्ड) (RAILWAY BOARD)

No.2015/Tele/15 (18)3.

New Delhi,
Dated: 10.2.2015

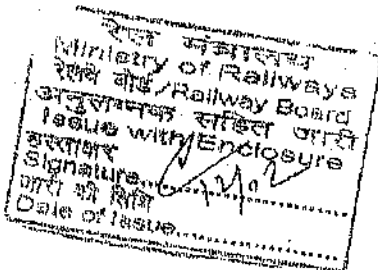
Chief Signal & Telecom Engineer,
All Indian Railways.

Sub: System Improvement regarding elaborating the issues of Compatibility, performance of the Telecom equipments in the tender documents.
Ref: Rly. Bd's Vig note no. 2009/V3/C/S&T/46-Pt-1 Dt 08.12.2014

In reference to above, following system improvement steps to be initiated while preparing the Telecom tender document:-

1. Clear Specification details i.e RDSO/TEC/BSNL/IS etc should be mentioned without any ambiguity. There shall not be any mismatch between product description given in the Tender document and in the specification. The latest version amendment of the specification applicable shall be as on the date of Tender opening.
2. Compatibility Issues and performance parameters of the equipments etc. should be elaborated in the tender document so that there is no room for ambiguity.
3. It shall be preferable to mention the specific year and version of specification of sophisticated and large value items in case it is envisaged that the product/equipment with latest specification is likely to be incompatible with existing system or the additional features (of latest version) are not required or financial implication are substantially high/infructuous.
4. Inspecting authority should be mentioned against each item in the schedule and inspection authority should be as per Railway Board's letter No. 2006/Tele/TC/1 dated 12.4.2006 and 09.01.2008 (or latest). Inspection authority should normally not be changed after tender opening.
5. Material which are not inspected by RDSO/RITES etc may be got inspected by Government Test Houses, if required, by the Railways.
6. Whenever materials are inspected by Consignee, the Tenderer should be required to furnish the OEM's Guarantee Certificate.
7. Material should not be procured from sources banned for business dealing with Railways under any circumstances.

The above steps will be in addition to the extant systems/procedures.



12.2.15
o/c (शोभन चौधरी)
Executive Director (Tele Dev)
E-mail: edtd@rb.railnet.gov.in
FAX 030-44198/011-23304198

Copy to: - Director/RISET & ED/Tele/RDSO for Information.



भारत सरकार (GOVERNMENT OF INDIA)
रेल मंत्रालय (MINISTRY OF RAILWAYS)
रेलवे बोर्ड (RAILWAY BOARD)



No.2023/Tele Dev/Trusted Sources

Date: 11.10.2023

The General Manager/Director General,
All Zonal Railways/ RDSO/ PUs/ CTIs.

Telecom Circular No. 12/2023

Sub: Use of Trusted Products from Trusted Sources for backbone telecom network of IR

Ref: DOT's letter No. from File no 20-1236/2021-AS-I dt 30.03.2021

Indian Railway is setting up its LTE and IP/MPLS network covering its entire route. The backbone network will support all applications and network of Indian Railways including those that are critical. Looking in to the fact that this network will carry information of ticketing, freight operation, train control (Kavach) etc., it is considered that only trusted product from trusted sources should be used in the backbone network of Railways.

2. National Security Council Secretariat (NSCS) of the Government of India has set up a Trusted Telecom Portal (TTP) for ensuring only trusted telecom equipment are being used by the Telecom /Internet Service Providers in India from trusted sources with an aim to address the security concerns of the telecom networks.
3. In this regard, National Security Council Secretariat (NSCS) has allowed access of Trusted Telecom Portal (TTP) by Railways.
4. Accordingly, it has been decided that to begin with, the LTE e-Node-B, cell site routers, switches and the IP/MPLS routers that will be used on Indian Railways, should be got cleared through the Trusted Telecom Portal before the supply of equipment. This is applicable with immediate effect for all equipment being procured.
5. This issue with the approval of Additional Member (Telecom).
6. Kindly acknowledge the same and ensure compliance.

(राकेश रंजन)
कार्यकारी निदेशक (दूरसंचार विकास)
रेल मंत्रालय
011-47843012
E-mail id edtd@rb.railnet.gov.in
Room No.103-A, First Floor

Copy to:

- PCSTE/CSTE (Const), All Zonal Railways for kind information and necessary action.
- PED/S&T/RDSO for incorporation in the relevant specification/TAN.

F. No. 20-1236/2021-AS-I
Government of India
Ministry of Telecommunications
Department of Telecommunications
(Access Service Division)
20-Ashoka Road, New Delhi-110001.

Dated 10th June, 2022

To,


All Licensees

Subject:- Compliance to Amendments in License Conditions issued by Department of Telecommunications- Actions to be taken by Telecom Service Providers-reg.

This is regarding Amendments in Telecom Licenses issued by the Department of Telecommunications in March, 2021 for procurement/ use of Telecommunication equipment from Trusted Source and instruction issued vide this office letter of even number dated 30.03.2021 and 16.06.2021 for appointment of Nodal Officer for the portal of NSCS. A reminder was also issued on 13.12.2021.

2. In this regard, it has been observed that all Licensees have still not registered on the Trusted Telecom Portal. Hence, those licensees who have not submitted an Authorization letter for appointing a Nodal Officer for Trusted Telecom Portal are requested to submit the same to the Designated Authority i.e., National Cyber Security Coordinator latest by 15.06.2022 failing which action will be taken against those licensees. Any further clarification/ queries on this subject may be sought from the Designated Authority through email id: dirttc-nscs@gov.in and tele no. +91 11 23451596.

Encl.: As above.


(Anil Kumar Gehlot)
Director (AS-I)
Ph. No. 23036864

Copy to:

1. DDG (CS), DDG (DS) and DDG (Satellite), DoT HQ for kind information please.
2. Director (TTC), NSCS- for kind information please.

F. No. 20-1236/2021-AS-I
Government of India
Ministry of Telecommunications
Department of Telecommunications
(Access Service Division)
20-Ashoka Road, New Delhi-110001.

Dated 13th December, 2021

To,


All Licensees

Subject:- Compliance to Amendments in License Conditions issued by Department of Telecommunications- Actions to be taken by Telecom Service Providers-reg.

This is regarding Amendments in Telecom Licenses issued by the Department of Telecommunications in March, 2021 for procurement/ use of Telecommunication equipment from Trusted Source and instruction issued vide this office letter of even number dated 30.03.2021 and 16.06.2021 (copy enclosed) for appointment of Nodal Officer for the portal of NSCS.

2. In this regard, it has been observed that all Licensees have not been registered on the Trusted Telecom Portal. Hence, those licensees who have not submitted Authorization letter for appointing a Nodal Officer for Trusted Telecom Portal are requested to submit the same to the Designated Authority i.e., National Cyber Security Coordinator on immediate basis. Any further clarification/ queries on this subject may be sought from the Designated Authority through email id: dir-ttc-nscs@gov.in and tele no. +91 11 23451596.

Encl.: As above.


(Prashant Verma)
ADG (AS-I)
Ph. No. 23036580

Copy to: DDG (CS), DDG (DS) and DDG (Satellite), DoT HQ for kind information please.

17/c

File No. 20-1236/2021-AS-I
Government of India
Ministry of Communications
Department of Telecommunications
(Access Services Wing)
20, Ashoka Road, New Delhi – 110001

Dated 16th June, 2021

To,

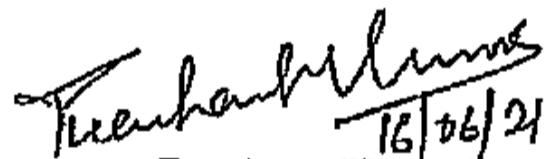
All Licensees

Subject: Compliance to Amendments in Telecom Licenses issued by Department of Telecommunications for procurement of Telecommunication Equipment from Trusted Sources - Actions to be taken by Licensees- reg.

This is regarding Amendments in Telecom Licenses issued by the Department of Telecommunications in March, 2021 for procurement/ use of Telecommunication equipment from Trusted Sources and instructions issued vide this office letter of even number dated 30.03.2021 for appointment of Nodal officer for the portal developed by the Designated Authority i.e., NCSC (copy attached).

2. In this regard, all Licensees are hereby informed that the "Trusted Telecom Portal" has been live with effect from 15th June, 2021. Those licensees who have not submitted Authorization letter for appointing a Nodal Officer for this portal are requested to submit the same to the Designated Authority i.e., National Cyber Security Coordinator on immediate basis. Any further clarification/queries on this subject may be sought from the Designated Authority through email id: dirttc-nses@gov.in and tele no.: +91 11 23451596.

Encl.: As above.


(Prashant Verma)
Assistant Director General (AS-I)
Ph. No. 23036580

File No. 20-1236/2021-AS-I
Government of India
Ministry of Communications
Department of Telecommunications
(Access Services Wing)
20, Ashoka Road, New Delhi – 110001

Dated 30th March, 2021

To,

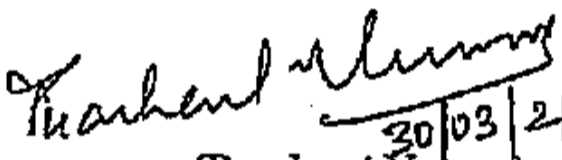
All Licensees

Subject: Compliance to Amendments in Telecom Licenses issued by Department of Telecommunications for procurement of Telecommunication Equipment from Trusted Sources - Actions to be taken by Licensees- reg.

This is regarding Amendments in Telecom Licenses issued by the Department of Telecommunications in March, 2021 for procurement/ use of Telecommunication equipment from Trusted Sources.

2. In this regard, all Licensees are hereby directed to follow the instructions as attached in Annexure for appointing a Nodal Officer for the portal being developed by Designated Authority i.e., National Cyber Security Coordinator.

Encl.: As above.


(Prashant Verma)
Assistant Director General (AS-I)
Ph. No. 23036580

Copy to: DDG (CS), DDG (DS) and DDG (Satellite), DoT HQ for kind information and necessary action please.

To

All Licensed Telecom Service Providers

**Subject: Compliance to Amendments in License Condition Issued
by Department of Telecommunications - Action to be Taken by
Telecom Service Providers (TSPs)**

1. An amendment to existing License conditions for Telecom Service Providers (TSPs) has been issued by Department of Telecommunication in March 2021. As per the amendment issued, with effect from 15th June 2021:

- a. The National Cyber Security Coordinator is the Designated Authority (DA).
- b. The licensee, shall provide any information as and when sought by the DA.
- c. The licensee, shall only connect Trusted Products in its network and also seek permission from DA for upgradation of existing network utilizing the Telecommunication Equipment not designated as Trusted Products.

2. To enable adherence of the above, a portal is being developed by DA and the details of its access will be shared separately. TSPs would need to share information about their Company, the products they intend to connect to their network, Product-OEM and related details in the portal for evaluation as Trusted Product.

3. To facilitate the same, TSPs need to designate a Nodal Officer who will be provided access to the portal and also be providing inputs to the DA both offline and online. The Nodal Officer, so designated, needs to be appropriately authorised by the TSP. The authorisation letter is to be signed by a Signatory who has been empowered by a resolution passed by the board of directors.

4. The ink signed authorisation letter in the format attached, may be sent by 10th April 2021 to the address given below:

The Director,
Trusted Telecom Cell,
Room No 208, 2nd Floor,
Sardar Patel Bhavan,
Sansad Marg,
New Delhi 110 001

LETTER OF AUTHORISATION

1. This is to certify that Mr. / Ms who is employed in (Name of the TSP company) as (designation) is assigned as the Nodal officer on behalf of (Provide name of the Company, License number and the type of services being provided by the Company eg. ISP / ILD / NLD etc).
2. He / She is authorized to access the Portal being developed for implementation of National Security Directive on Telecommunication Sector (NSDTS) and provide all required information in the portal on behalf of the company with effect from April 2021.
3. He / She is also authorized to provide information as and when required by the Designated Authority through Online / Offline means.
4. His / Her specimen signatures for offline communication is as appended below:

5. His / Her email id and Mobile number for authentication purpose will be as follows:

a) email id:

b) Mobile number:

(Signature of Authorised Signatory of the company)
Name
Designation
DIN if applicable
Date:

Enclosed: Copy of board resolution authorizing the signatory

CRIS

रेलवे सूचना प्रणाली केन्द्र

(रेल मंत्रालय भारत सरकार का संगठन)

CRIS

CENTRE FOR RAILWAY INFORMATION SYSTEMS

(An Organisation of the Ministry of Railways, Govt. of India)

No. CRIS/HR/NTWG/26/2023-CM

Dated :20.10.2023

✓ Executive Director /C&IS,
Railway Board,
Rail Bhawan,
New Delhi

Sub: Follow-up on decision taken during the meeting chaired by AM/M&BD on 16.08.2023

Ref: i) Railway Board letter no. 2023/C&IS/.PRS Modernization/01 dated 19.10.2023
ii) Minutes of meeting (MoM) held in chamber of AM(M&BD), Railway Board on 16.08.2023

The observation conveyed vide above referred letter (i) has been examined and comments are as under :

The existing architecture of UTN is IP-SDH based which uses hierarchical network topology (Tier 0/1/2/3/4) as against IP-MPLS network which is hub-and-spoke topology. No changes are proposed in the existing architecture and specifications for Routers to be deployed at Tier2/3/4 locations are based on "as-is" architecture. Keeping in view that Zonal Railways are also utilising Ethernet interface in the last mile of the WAN links, WAN port configuration of routers have been worked out with a mix of both Ethernet as well G.703 / E1 ports.

Since, minimum port requirements for both 08 WAN port and 04 WAN port routers are already specified in Item no. 8 of the specifications, the footnotes mentioned in the specifications have been removed for more clarity. The final set of Technical specifications for Tier 2/3/4 locations with these changes are enclosed herewith which may be circulated to Zonal Railways for expediting the replacement of routers and timely roll out of PRS Modernisation project.

रमन बंसल

(Raman Bansal)

Chief Project Engineer/CN

02

✓ Copy: CAO/PTS, NR, State Entry Road, New Delhi.

प्रति/Received / प्र.सं./Dispatch
रेलवे सूचना प्रणाली केन्द्र
Centre For Railway Information Systems
(क्रि.सं./CRIS)
नई दिल्ली-110021

चानक्यपुरी, नयी दिल्ली-110021

CHANAKYAPURI, NEW DELHI-110021

टेलीफोन/TELEPHONE : 24104525, 24106717 फैक्स/FAX : 91-11-26877893

	Tier-2 Router (08 WAN Ports)
Sr. No.	Item Description
	General Requirements
1	Router shall be designed for continuous operations. The bidder shall furnish the MTBF (Mean Time Between Failure) predicted and observed values along with calculations by the manufacturer.
2	In case of full system failure, Router shall maintain a trace area in the NVRAM / FLASH which would be used for analysis / diagnosis of the problem.
3	Router shall have built in power-on diagnostics system to detect hardware failures.
4	Router shall have suitable Visual Indicators for diagnostics and healthy / unhealthy status of Ports & modules.
5	The design of Router shall not allow plugging of a module in the wrong slot or upside down.
	Hardware Details
6	The proposed device should be mentioned as Router in the publically available OEM datasheet/document.
7	Router shall have minimum 02 Nos. 1G Base-T Ethernet LAN ports at wire-speed/Line rate complying to IEEE 802.3ab specification. The Gigabit ports shall have full duplex capabilities. The hardware of all these ports should be complete in all respect.
8	Router shall have minimum 8 WAN ports which shall be combination of both 100/1000 Base-T Ethernet Routed Ports and G.703 interface / E1 Ports. The hardware of all these ports should be complete in all respects. The combination of WAN ports shall be as follows:
(i)	Router shall have minimum 02 Nos. 100/1000 Base-T Ethernet Routed Ports at wire-speed / Line rate complying to IEEE 802.3ab specification. The Ethernet ports shall have full duplex capabilities.
(ii)	Router shall have minimum 04 Nos. WAN ports supporting G.703 interface / E1 Ports natively. These ports shall be operable up to speed of 02 Mbps.
(iii)	Router shall have minimum 02 Nos. WAN ports; which can be either be 100/1000 Base-T Ethernet Routed Ports supporting full duplex capabilities or G.703 interface / E1 Ports natively operable up to speed of 02 Mbps.
9	Router shall have aggregate packet forwarding rate greater than or equal to 400 kpps (killo packets per second) for a packet length of 64 Bytes/128 Bytes. The performance of the router shall not degrade for IPv4 and IPv6 individually as well as for dual stack operations (IPv4 & IPv6).
10	Router shall have aggregate throughput minimum 400/800 Kbps for a packet length of 64 Bytes/128 Bytes respectively.
11	Router shall have minimum 20K active IPv4 and 10K IPv6 routes.
12	The Router shall have enough CPU capacity and Memory so as to efficiently meet all the functionalities laid down in the specifications. The bidder should specify the offered CPU and memory model.
13	The router hardware shall be designed to run both IPv4 & IPv6 simultaneously (Dual Stack) from day one.
14	Router shall support 19" rack mountings.
15	Router shall support Upgrade of Software through Flash Memory.
16	Router shall support on-line software reconfiguration to implement changes without rebooting.
17	Router shall be capable of working with 200 – 240 Volts AC nominal at frequency 50 +/- 2 Hz.
18	Router shall support a console port with RS-232 or RJ-45 Interface for configuration and

	diagnostic purposes.
	Software Details (required from day 1)
19	The router shall support following protocols:
	i. TCP/IP
	ii. ARP, ICMP, ICMPv6, DHCP, TFTP and DNS
	iii. Network address translation (NAT) and Port Address Translation (PAT)
	iv. Router shall support NTP (Network Time Protocol) or SNTP (Simple Network Time Protocol) for date & time synchronization from NTP Server. The router shall also be configured as NTP Server for serving the time.
	v. Support for both TCP and UDP at layer 4
	vi. Sub networking
	vii. Classless Inter Domain Routing (CIDR)
	viii. Variable Length Subnet Masking (VLSM)
	ix. IEEE 802.1Q based VLAN tagging
	x. VRRP
20	The router shall support following WAN protocols:
	i. PPP
	ii. Multi-link PPP
	iii. HDLC
21	The router shall support static as well as dynamic routing with following IP routing protocols:
	i. OSPF Version 3
	ii. BGP Version 4
	iii. Multi-Protocol BGP Version 4
22	The Router shall have following IP Routing features:
	i. Bidirectional Forwarding Detection (BFD) for Static and OSPF Routing.
	ii. Option to define a Router as Designated Router (DR) in OSPF Domain.
	iii. Option to define “Point to Point” and “Point to Multi-point” links in OSPF Domain.
	iv. Option to change the LSA and SPF timers as well as other timers / counters in OSPF.
	v. Router shall support tracking the reachability to remote destination which is not directly connected and thereby deciding the validity of static routes etc.
23	Router shall support following quality of service (QoS) features:
	i. Weighted Fair Queuing (WFQ)/Weighted Round Robin (WRR) or equivalent queuing mechanism
	ii. IP Precedence i.e. Priority based on TOS field of IPv4 and IPv6
	iii. Differentiated Services (Diff Serve) i.e. Priority based on DS Field of the IPv4 and IPv6.
	iv. Weighted Random Early Detection for congestion avoidance.
24	The router shall have minimum eight hardware queues per port feature for assignment of bandwidth/priority to a group(s) of applications.
25	The router shall support forwarding of traffic in load-balancing mode on links with equal metric based on Per session or Per destination-based load balancing.
26	The router shall support following Security features:
	i. PAP and CHAP
	ii. Data Encryption as per DES, 3DES and AES Standards
	iii. Generic Routing Encapsulation
	iv. Hardware Accelerated IPsec based Point to Point secure tunnels for minimum 100 IPsec tunnels and minimum IPsec throughput of 200 kbps.

	v. Access lists based on Network Address, Mask, Protocol Type and Socket Type
	vi. Access list violation Logging & Accounting
	vii. MD5 Route Authentication
	viii. Controlled SNMP Access through the use of SNMP with MD5 Authentication.
	ix. Multiple Privilege levels to provide different levels of access
	x. Remote Authentication Dial in User Service (RADIUS)
27	The Router shall support authentication, authorization and accounting through RADIUS / TACACS+.
28	Router shall support Network Management through:
	i. SNMP V-2 & V-3
	ii. MIB I/II
	iii. Router shall support all standard MIBs based on OSPF, BGP etc.
	iv. Software Upgrade through FTP or TFTP
	v. TELNET Client and Server
	vi. SSH Version-2
29	Router shall support following in the user level of access i.e. the user with minimum privileges:
	i. Ping
	ii. Telnet
	iii. Traceroute
	iv. Display of pre-configured description / label on each interface.
	v. Display of Input and Output error statistics on all interfaces.
	vi. Display of Input and Output data rate statistics on all interfaces.
	vii. Display of Dynamic ARP table.
30	Router shall support System & Event logging functions as well as forwarding of these logs onto a separate Server for log management.
31	The Hardware / Software of Router shall not pose any problem due to change in date and time caused by events such as changeover of millennium / century, leap year etc. in the normal functioning of the system.
32	Router shall have Debugging features to display and analyze various types of packets.
33	The router shall support NetFlow / SFlow / JFlow / NetStream.
	Regulatory Compliance
34	Router shall conform to UL 60950 or IEC 60950 or CSA 60950 or EN 60950 or equivalent Indian Standard like IS-13252:2010 or better for Safety requirements of Information Technology Equipment.
35	Router shall conform to EN 55022/55032 Class A/B or CISPR22 Class A/B or CE Class A/B or FCC Class A/B or equivalent Indian Standard like IS 6873 (Part 7): 2012 or better for EMC (Electro Magnetic Compatibility) requirements.
36	Router shall be manufactured in accordance with the international quality standards ISO 9001:2008 or latest valid ISO or equivalent Indian standard like BIS for which the manufacturer should be duly accredited.
	Product Certification Required
37	Router / Router's Operating System should be tested and certified for EAL 2 / NDPP (Network Device Protection Profile)/NDcPP (Network Device collaborative Protection Profile) or above under Common Criteria Program for security related functions or under Indian Common Criteria Certification Scheme (IC3S) by STQC, DEIT, Govt. of India.

	Tier-3/4 Router (04 WAN Ports)
Sr. No.	Item Description
	General Requirements
1	Router shall be designed for continuous operations. The bidder shall furnish the MTBF (Mean Time Between Failure) predicted and observed values along with calculations by the manufacturer.
2	In case of full system failure, Router shall maintain a trace area in the NVRAM / FLASH which would be used for analysis / diagnosis of the problem.
3	Router shall have built in power-on diagnostics system to detect hardware failures.
4	Router shall have suitable Visual Indicators for diagnostics and healthy / unhealthy status of Ports & modules.
5	The design of Router shall not allow plugging of a module in the wrong slot or upside down.
	Hardware Details
6	The proposed device should be mentioned as Router in the publically available OEM datasheet/document.
7	Router shall have minimum 02 Nos. 1G Base-T Ethernet LAN ports at wire-speed/Line rate complying to IEEE 802.3ab specification. The Gigabit ports shall have full duplex capabilities. The hardware of all these ports should be complete in all respect.
8	Router shall have minimum 4 WAN ports which shall be combination of both 100/1000 Base-T Ethernet Routed Ports and G.703 interface / E1 Ports. The hardware of all these ports should be complete in all respects. The combination of WAN ports shall be as follows:
(i)	Router shall have minimum 02 Nos. 100/1000 Base-T Ethernet Routed Ports at wire-speed / Line rate complying to IEEE 802.3ab specification. The Ethernet ports shall have full duplex capabilities.
(ii)	Router shall have minimum 02 Nos. WAN ports supporting G.703 interface / E1 Ports natively. These ports shall be operable up to speed of 02 Mbps.
9	Router shall have aggregate packet forwarding rate greater than or equal to 200 kpps (killo packets per second) for a packet length of 64 Bytes/128 Bytes. The performance of the router shall not degrade for IPv4 and IPv6 individually as well as for dual stack operations (IPv4 & IPv6).
10	Router shall have aggregate throughput minimum 200/400 Kbps for a packet length of 64 Bytes/128 Bytes respectively.
11	Router shall have minimum 20K active IPv4 and 10K IPv6 routes.
12	The Router shall have enough CPU capacity and Memory so as to efficiently meet all the functionalities laid down in the specifications. The bidder should specify the offered CPU and memory model.
13	The router hardware shall be designed to run both IPv4 & IPv6 simultaneously (Dual Stack) from day one.
14	Router shall support 19" rack mountings.
15	Router shall support Upgrade of Software through Flash Memory.
16	Router shall support on-line software reconfiguration to implement changes without rebooting.
17	Router shall be capable of working with 200 - 240 Volts AC nominal at frequency 50 +/- 2 Hz.
18	Router shall support a console port with RS-232 or RJ-45 Interface for configuration and diagnostic purposes.
	Software Details (required from day 1)

19	The router shall support following protocols:
	i. TCP/IP
	ii. ARP, ICMP, ICMPv6, DHCP, TFTP and DNS
	iii. Network address translation (NAT) and Port Address Translation (PAT)
	iv. Router shall support NTP (Network Time Protocol) or SNTP (Simple Network Time Protocol) for date & time synchronization from NTP Server. The router shall also be configured as NTP Server for serving the time.
	v. Support for both TCP and UDP at layer 4
	vi. Sub networking
	vii. Classless Inter Domain Routing (CIDR)
	viii. Variable Length Subnet Masking (VLSM)
	ix. IEEE 802.1Q based VLAN tagging
	x. VRRP
20	The router shall support following WAN protocols:
	i. PPP
	ii. Multi-link PPP
	iii. HDLC
21	The router shall support static as well as dynamic routing with following IP routing protocols:
	i. OSPF Version 3
	ii. BGP Version 4
	iii. Multi-Protocol BGP Version 4
22	The Router shall have following IP Routing features:
	i. Bidirectional Forwarding Detection (BFD) for Static and OSPF Routing.
	ii. Option to define a Router as Designated Router (DR) in OSPF Domain.
	iii. Option to define “Point to Point” and “Point to Multi-point” links in OSPF Domain.
	iv. Option to change the LSA and SPF timers as well as other timers / counters in OSPF.
	v. Router shall support tracking the reachability to remote destination which is not directly connected and thereby deciding the validity of static routes etc.
23	Router shall support following quality of service (QoS) features:
	i. Weighted Fair Queuing (WFQ)/Weighted Round Robin (WRR) or equivalent queuing mechanism
	ii. IP Precedence i.e. Priority based on TOS field of IPv4 and IPv6
	iii. Differentiated Services (Diff Serve) i.e. Priority based on DS Field of the IPv4 and IPv6.
	iv. Weighted Random Early Detection for congestion avoidance.
24	The router shall have minimum eight hardware queues per port feature for assignment of bandwidth/priority to a group(s) of applications.
25	The router shall support forwarding of traffic in load-balancing mode on links with equal metric based on Per session or Per destination-based load balancing.
26	The router shall support following Security features:
	i. PAP and CHAP
	ii. Data Encryption as per DES, 3DES and AES Standards
	iii. Generic Routing Encapsulation
	iv. Hardware Accelerated IPsec based Point to Point secure tunnels for minimum 50 IPsec tunnels and minimum IPsec throughput of 100 kbps.
	v. Access lists based on Network Address, Mask, Protocol Type and Socket Type
	vi. Access list violation Logging & Accounting

	vii. MD5 Route Authentication
	viii. Controlled SNMP Access through the use of SNMP with MD5 Authentication.
	ix. Multiple Privilege levels to provide different levels of access
	x. Remote Authentication Dial in User Service (RADIUS)
27	The Router shall support authentication, authorization and accounting though RADIUS / TACACS+.
28	Router shall support Network Management through:
	i. SNMP V-2 & V-3
	ii. MIB I/II
	iii. Router shall support all standard MIBs based on OSPF, BGP etc.
	iv. Software Upgrade through FTP or TFTP
	v. TELNET Client and Server
	vi. SSH Version-2
29	Router shall support following in the user level of access i.e. the user with minimum privileges:
	i. Ping
	ii. Telnet
	iii. Traceroute
	iv. Display of pre-configured description / label on each interface.
	v. Display of Input and Output error statistics on all interfaces.
	vi. Display of Input and Output data rate statistics on all interfaces.
	vii. Display of Dynamic ARP table.
30	Router shall support System & Event logging functions as well as forwarding of these logs onto a separate Server for log management.
31	The Hardware / Software of Router shall not pose any problem due to change in date and time caused by events such as changeover of millennium / century, leap year etc. in the normal functioning of the system.
32	Router shall have Debugging features to display and analyze various types of packets.
33	The router shall support NetFlow / SFlow / JFlow / NetStream.
	Regulatory Compliance
34	Router shall conform to UL 60950 or IEC 60950 or CSA 60950 or EN 60950 or equivalent Indian Standard like IS-13252:2010 or better for Safety requirements of Information Technology Equipment.
35	Router shall conform to EN 55022/55032 Class A/B or CISPR22 Class A/B or CE Class A/B or FCC Class A/B or equivalent Indian Standard like IS 6873 (Part 7): 2012 or better for EMC (Electro Magnetic Compatibility) requirements.
36	Router shall be manufactured in accordance with the international quality standards ISO 9001:2008 or latest valid ISO or equivalent Indian standard like BIS for which the manufacturer should be duly accredited.
	Product Certification Required
37	Router / Router's Operating System should be tested and certified for EAL 2 / NDPP (Network Device Protection Profile)/NDcPP (Network Device collaborative Protection Profile) or above under Common Criteria Program for security related functions or under Indian Common Criteria Certification Scheme (IC3S) by STQC, DEIT, Govt. of India.



ನೈಋತ್ಯ ರೈಲ್ವೆ/दक्षिण पश्चिम रेलवे/SOUTH WESTERN RAILWAY

प्रधान मुख्य संकेत व दूरसंचार अभियंता का कार्यालय, प्रथम मंजिल, रेल सौधा, गदग सडक, हुबल्ली।

Principal Chief Signal & Telecom Engineer, Rail Soudha, Gadag Road, Hubballi-20

सं. No. SG/SWR/ IP-MPLS/E-2-19

दिनांक Date: 19.04.2024

**CSTE/PROJ/UBL, CSTE/Planning
CSTE/CN/BNC,CPM/GSU UBL, SBC & MYS
Sr.DSTEs UBL, SBC & MYS**

विषय: Applicability of Trusted Telecom Portal (TTP) for Inspection of Non-RDSO approved Telecom Items.

संदर्भ: 1.RDSO Letter No.RDSO-TELE0LKO(TECH)/8/2020 to ED/QA/S&T/RDSO/SBC, Dated 09.02.2024.

2. Railway Board's Telecom Circular No. 12/2023, Dated 11.10.2023.

3. Authority Para b) section A of Chapter-I of Indian Railway Telecom Manual 2021.

Vide Railway Board's Telecom Circular No. 12/2023, Dated 11.10.2023 (copy enclosed), Railway Board emphasizes the use of trusted products from reliable sources to maintain network integrity and security. Railway Board has directed that the LTE e-Node-B, cell site routers, switches and the IP/MPLS routers that will be used on Indian Railways should be got cleared through the Trusted Telecom Portal before the supply of equipment & it is applicable with immediate effect for all equipment being procured.

Vide RDSO Letter under Ref-1 Dated 09.02.2024, (copy enclosed), RDSO reiterated that at present it is mandatory for four items i.e. LTE e-Node-B, cell site routers, switches and the IP/MPLS routers irrespective of the specification whether it is VSS, IPMPLS Router or VoIP Based TCCS. Inspection of IPMPLS Routers, VSS and VoIP based TCCS equipments should be carried out accordingly.

Therefore, all concerned are once again strictly advised that the Railway Board/RDSO instructions to adhere adopt for implementation and follow this policy for systematic and professional working of Telecommunication System and professional work for all telecommunication matters over SWR without any deviation and laxity.

in this regard to ensure compliance with the Trusted Telecom Portal requirements for the specified telecom equipment used on Indian Railways. Any non-RDSO approved items should undergo the necessary clearance processes before procurement and deployment.

Compliance to be submitted to this office for appraisal of Railway Board/RDSO.

Matter should be treated as Important and Most Urgent.

Encl: Letters in Ref-1&2.

(जय प्रकाश शिवाजी/Jai Prakash Shivaji)
मुख्य संचार अभियंता/Chief Communication Engineer

Copy to: 1. **Dy.CSTE/Proj/SBC:** for necessary action to ensure Applicability of Trusted Telecom Portal (TTP) for Inspection of All Non-RDSO approved Telecom Items.

2. **Dy.CSTEs/CN/SBC & UBL** for necessary action for necessary action to ensure Applicability of Trusted Telecom Portal (TTP) for Inspection of All Non-RDSO approved Telecom Items.

3. **Dy.CSTEs/GSU/UBL, SBC & MYS:** for necessary action for necessary action to ensure Applicability of Trusted Telecom Portal (TTP) for Inspection of All Non-RDSO approved Telecom Items.

Phone : 0522 – 2456389
Fax : 0522 – 2462635
E-mail : edtelecomrdso@gmail.com
edtele@rdso.railnet.gov.in



भारत सरकार, रेल मंत्रालय
अनुसंधान अभिकल्प और मानक संगठन
लखनऊ-226 011
Government of India - Ministry of Railways
Research Designs & Standards Organisation
LUCKNOW – 226011



संख्या: RDSO-TELE0LKO(TECH)/8/2020

दिनांक : As signed.

Executive Director/QA/S&T
Bangalore

Sub: Applicability of Trusted Telecom Portal (TTP) for inspection of non-RDSO approved Telecom items.

Ref: ED/QA/S&T/SBC letter No. DI/SBC/General Correspondence/A-8 dated 08.02.2024

Vide Railway Board circular No. 12/2023 dated 11.10.2023 it is directed the LTE e-Node-B, cell site routers, switches and the IP/MPLS routers that will be used on Indian Railways, should be got cleared through the Trusted Telecom Portal before the supply of equipment & it is applicable with immediate effect for all equipment being procured. The same is reiterated for ensuring compliance vide this office letter no. RDSO-QAST0LKO(VEND)/3/2019 dated 13.10.2023.

In reference to your letter, it is mentioned that at present it is mandatory for above mentioned four items i.e. LTE e-Node-B, cell site routers, switches and the IP/MPLS routers irrespective of the specification whether it is VSS, IPMPLS Router or VoIP Based TCCS.

Inspection of IPMPLS Routers, VSS and VoIP based TCCS equipments may be carried out accordingly.

This has the approval of DG / S&T.

Digitally Signed by Dinesh Verma

Date: 09-02-2024 17:38:15

Reason: Approved

दिनेश वर्मा | Dinesh Verma
कार्यनिदेशक / टेली-1 | ED /Telecom-1
कृते महानिदेशक / सिग. एवं दूर. | for DG/S&T
edtele@rdso.railnet.gov.in

Copy To:

Executive Director/QA/S&T/Mumbai
Executive Director/QA/S&T/Kolkata
Executive Director/QA/S&T/New Delhi
Executive Director/QA/S&T/Jaipur
Director/QA/S&T/Lucknow
Dy. Director/QA/S&T/Bhopal

For information and necessary
action accordingly.



दक्षिण पश्चिम रेलवे

South Western Railway

प्र. मु.संकेत एवं दूरसंचार इंजीनियर कार्यालय, क्षेत्रीय कार्यालय, गदग रोड, हुबबल्ली
PRINCIPAL CHIEF SIGNAL & TELECOMMUNICATION ENGINEER, ZONAL HQ,
RAIL SOUDHA, GADAG ROAD, HUBBALLI, KARNATAKA - 580020.

सं: No. SG/ SWR/RB Corres/E:3-3

दिनांक : 12/08/2024

CSTE/Project/SBC, CSTE/CN/BNC
CPMs/GSU UBL, SBC and MYS
Sr.DSTEs UBL, SBC and MYS

Sub: Regarding implementation of Trusted Products from Trusted Sources for backbone Telecom network of IR.

- Ref:** 1. Railway Board Telecom Circular 12/2023 Dated 11.10.2023.
2. RDSO letter No. RDSO-TELE0LKO(TECH)/8/2020 Dated 09.02.2024.
3. This office letter No. SG/ SWR/RB Corres/E:3-3 Dated 27.10.2023.
4. DoT letter No. F.No.20-1236/2021-AS-I dated 13.12.2021 and 10.05.2022.

With reference to the Railway Board Circular 12/2023, referenced under Ref:1, and a recent WhatsApp message from AM/Tele/Railway Board, we would like to draw your attention to the stipulations outlined in Telecom Circular 12/2023 regarding the procurement of LTE e-Node-B, cell site routers, switches, and IP/MPLS routers.

It is imperative to re-emphasized once again the key points highlighted in the Telecom Circular 12/2023 for strict compliance:

1. The backbone network of Indian Railways is paramount in supporting all critical applications and networks, including ticketing, freight operation, and train control (Kavach), necessitating the use of trusted products from verified sources within the railway's backbone network.
2. National Security Council Secretariat (NSCS) of the Government of India has set up a Trusted Telecom Portal (TTP) for ensuring only trusted telecom equipment are being used by the Telecom /Internet Service Providers in India from trusted sources with an aim to address the security concerns of the telecom networks.
3. The NSCS has granted the Railway access to the TTP, making it essential for the Indian Railways to adhere to the guidelines set forth.
4. It is mandatory that all LTE e-Node-B, cell site Routers, Switches, and IP-MPLS Routers to be utilized in Indian Railways' infrastructure undergo clearance through the Trusted Telecom Portal prior to procurement. This directive is to be immediately enforced for all related equipment being procured.
5. Vide under Ref:2, as per RDSO instructions regarding the applicability of the Trusted Telecom Portal (TTP) , it is clearly mentioned that at present it is mandatory for four items i.e. LTE e-Node-B, cell site Routers, Switches and the IP-MPLS Routers irrespective of the specification whether it is for VSS, IP-MPLS Router or VoIP Based TCCS. Inspection of IP-MPLS Switches, VSS and VoIP based TCCS equipments should be carried out accordingly.

Therefore, all concerned are once again strictly advised that the Railway Board/RDSO instructions to adhere, adopt, implement and follow these policy for systematic and professional working of Telecommunication System and professional work for all telecommunication matters over SWR without any deviation and laxity.

In this regard to ensure compliance with the Trusted Telecom Portal requirements for the specified telecom equipment used on Indian Railways. Any non-RDSO approved items should undergo the necessary clearance processes before procurement and deployment.

Moreover, in light of the amendments in Telecom Licenses issued by the Department of Telecommunications in March 2021, and the subsequent instructions issued for the appointment of Nodal Officer for the Trusted Telecom Portal, it is essential to note that not all Licensees have registered on the Trusted Telecom Portal.

In view of the above, it is once again emphasized the utmost importance of ensuring strict compliance with the directives issued in the Railway Board Circular 12/2023, and prompt action must be taken in the right professional spirit to ensure the registration and compliance with the Trusted Telecom Portal.

Compliance to be submitted to this office before 19.08.2024 for appraisal of Railway Board/RDSO.

Encl: All reference letters

JAI PRAKASH
SHIVAJI

Digitally signed by JAI PRAKASH
SHIVAJI
Date: 2024.08.12 17:22:34 +05'30'

(जय प्रकाश शिवाजी/Jai Prakash Shivaji)
मुख्य संचार अभियंता/Chief Communication Engineer

Copy to:

1. PCSTE/SWR; for kind information please.
2. CSTE/Plg/SWR: (Nodal Officer of TTP for SWR): for kind information please.



ನೈಋತ್ಯ ರೈಲ್ವೆ/ದಕ್ಷಿಣ ಪಶ್ಚಿಮ ರೇಲ್ವೆ/SOUTH WESTERN RAILWAY

प्रधान मुख्य संकेत व दूरसंचार अभियंता का कार्यालय, प्रथम मंजिल, रेल सौधा, गदग सडक, हुबबल्ली।

Principal Chief Signal & Telecom Engineer, Rail Soudha, Gadag Road, Hubballi

SG/SWR/UTS/259/Vol.XI

दिनांक: 10.02.2026

Sr. DSTE/ UBL, SBC & MYS

Sub: Modification in Technical Specifications of Routers for PRS Modernization Project (Tier- 2/3/4 locations).

Ref: 1. CAO/PTS Letter No. CAO/PTS/129/PRS/Phase-II/Impl/2020/Part-2 dated 10.02.2026.

2. Railway Board Letter No. 2024/Tele/6(3)/1 dated 06.02.2026.

In reference to above, the Railway Board has issued modifications to the Technical Specifications of routers to be deployed at Tier-2, Tier-3, and Tier-4 locations under the PRS Modernization project.

Attention is drawn to the revision in the security certification clause. The existing specification requiring testing/certification under EAL2/NDPP/ND CPP or Indian Common Criteria Certification Scheme (IC3S) has been replaced with the following:

"Router/Router's operating system should be tested and certified with the Mandatory Testing and Certification of Telecom Equipment (MTCTE) Essential Requirement (ER) and ITSAR as per the 'The Telecommunications (Framework to Notify Standards, Conformity Assessment and Certification) Rules, 2025'."

It is further clarified that all other technical specifications for the routers remain unchanged.

Encl: Letters under reference.

Digitally Signed by P S

Alawa

Date: 10-02-2026 17:13:36

Reason: Approved

(पी एस अलावा /P S Alawa)

मुख्य संचार अभियंता

Chief Communication Engineer

Copy to: PCMM/SWR for kind information.

SN-1

**OFFICE OF CHIEF ADMINISTRATIVE OFFICER/PS
STATE ENTRY ROAD, IRCA BUILDING
NEW DELHI-110055**

No: CAO/PTS/129/PRS/Phase-II/Impl/2020/Part-2

Dated: 10.02.2026.

Chief Commercial Manager (PM/PS)
(All Zonal Railways including KRCL)

Sub: Modification in Technical Specifications of Routers - PRS Modernization PAN India roll-out reg.

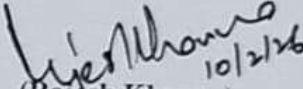
Ref: 1. Director ME(C&IS)/RB letter No. 2024/Tele/6(3)/1 dated 06.02.2026.
2. This office letter No. CAO/PTS/129/PRS/Phase-II/Impl/2020/Part-1 dated 30.11.2023.

Railway Board, vide letter No. 2023/C&IS/PRS Modernization/01 dated 23.11.2023 has mentioned that Technical Specification of Routers to be deployed at Tier-2/3/4 locations of the Unified Ticketing Network (UTN) based on 'as-is' architecture.

Kindly connect this office letter referred (2) above, through which the technical specifications of the routers for Tier-2, 3 & 4 locations have been circulated to all Zonal Railways.

Now, Railway Board dated 06.02.2026 (referred (1) above), has decided to modify the specifications of routers for Tier-2, 3 & 4 locations. The copy of Railway Board's letter dated 06.02.2026 is being forwarded for kind information and needful action in the matter.

Encls: As above.


(Rajesh Khanna)
10/2/26

Assistant Commercial Manager/PTS

Copy to:

1. **ED(C&IS)**, Railway Board, New Delhi for kind information.
2. **EDPM**, Railway Board, New Delhi, for kind information.
3. **GM/PRS/CRIS**, New Delhi for needful action in the matter.



भारत सरकार Government of India
रेल मंत्रालय Ministry of Railways
(रेलवे बोर्ड) (Railway Board)

SN-140
Dy. CCM/PS - (Com/Secy)

10/2/26
CM/PS
10/2/26
Ch. CCM/PS

No.2024/Tele/8(3)/1

Dated : As signed

The CAO/PTS
Northern Railway,
New Delhi.

Sub.: **Modifications in Technical Specifications of routers.**

Ref.: i) Dy.CCM/PTS' letter No.CAO/PTS/129/PRS/Phase-II/Impl/2020/Part-I dated 30.11.2023.

ii) Railway Board's letter No.2023/C&IS/PRS Modernisation/01 dated 23.11.2023.

Vide Railway Board's letter referred above, Technical Specifications of Routers to be deployed at Tier-2/3/4 locations of the Unified Ticketing Network (UTN) based on 'as-is' architecture, were forwarded for further necessary action.

In this context, it has been decided to modify the specifications as under:

Existing specification	To be replaced as
Router/Router's Operating system should be tested and certified for EAL2/NDPP (Network Device Protection Profile)/NDcPP (Network Device Collaborative Protection Profile) or above under Common Criteria Certification Scheme (IC3S) by STQC, DeitY, Government of India.	Router/Router's operating system should be tested and certified with the Mandatory Testing and Certification of Telecom Equipment (MITTE) Essential Requirement (ER) and ITSAR as per the "The Telecommunications (Framework to Notify Standards, Conformity Assessment and Certification) Rules, 2025".

All other Technical Specifications of Routers mentioned in Railway Board's letter referred above will remain unchanged.

This issues in consultation with Telecom Directorate of Railway Board and has the approval of the competent authority.

Digitally signed by
Bharat Bhushan Harit
Date: 06-02-2026
22:41:55
Director ME(C&IS)

Copy to : i) ED/Tele, Railway Board.
ii) MD/CRIS, Chanakyapuri, New Delhi.

भारत सरकार Government of India
रेल मंत्रालय Ministry of Railways
(रेलवे बोर्ड) (Railway Board)

No.2023/C&IS/PRS Modernization/01

New Delhi, Dated: As signed.

The General Manager,
South Western Railway,
Hubli.

Sub: Requirement of TTP approval for PRS/UTS routers at Tier-2, Tier-3 and Tier-4 locations.

Ref: (i). DRM/UBL's Letter No. H/G.157/UBL/2025-26 dtd 10.04.2026
(ii). CAO/PS/NR office's letter No. CAO/PTS/129/PRS/Phase-II/Impl/2020/Part-2 dtd.10.02.2026
(iii). Telecom Circular No. 12/2023 dtd 11.10.2023 (copy enclosed)
(iv). CPE/CN/CRIS' letter No. CRIS/HQ/MTWG/26/2023-CM dated 20.10.2023.

Please refer to SWR's letter referred at (i) above vide which clarification has been requested regarding requirement of TTP approval for PRS/UTS routers to be deployed at Tier-2, Tier-3 and Tier-4 locations under PRS Modernization project.

2. Matter was referred to Telecom Dte., and the clarification provided by it is as under:

- (i) As per latest technical specifications issued vide letter under reference (ii), compliance with MTCTC Essential Requirements (ER) and ITSAR, in accordance with the Telecommunications (Framework to Notify Standards, Conformity Assessment and Certification) Rules, 2025, is mandatory requirement for routers to be deployed for PRS/UTS.
- (ii) Regarding the applicability of Trusted Telecom Portal (TTP), Telecom Dte. has issued instructions vide Telecom Circular (Ref.iii), for the use of "Trusted Products from Trusted Sources" for the IR backbone telecom network, such TTP clearance was mandated for products (viz. LTE e-Node-B, cell site routers, switches and IP/MPLS routers).

3. In view of above and as per extant guidelines issued vide CRIS' letter under reference (iv) above, TTP is not considered mandatory for PRS/UTS routers.

4. Zonal Railway is therefore, requested to process the matter accordingly.

5. This issues with the approval of competent authority.

DA: As above.

Digitally signed by
BHARAT BHUSHAN HARIT
Date: 04-06-2026
16:35:39

Director/ME(C&IS)

Copy to:

1. **ED/Tele Dev., Railway Board:** For information please.
2. **Secy to GM/SWR:** For kind information of GM/SWR.
3. **PCSTE/SWR :** For information and necessary action please.
4. **DRM/UBL:** For information and necessary action please.
5. **CAO/PS/NR:** For information and necessary action please.



भारत सरकार Government of India
रेल मंत्रालय Ministry of Railways
रेलवे बोर्ड (Railway Board)



International Year
of Cooperatives
2025
Cooperatives Build
a Better World

No.2025/Tele/15(13)/1(3489218)

रेल भवन, नई दिल्ली -110001
दिनांक: (As signed)

The GM/DG/PCAO/CAO,
All Indian Railways, PUs, CORE, RDSO
All CTIs & COFMOW
(As per standard list)

Sub.: Circulation of "The Telecommunications (Framework to Notify Standards, Conformity Assessment and Certification) Rules, 2025" – Compliance Requirements
Ref.: Board's letter of even number dated 18.02.2025

Please find enclosed a copy of *The Telecommunications (Framework to Notify Standards, Conformity Assessment and Certification) Rules, 2025*, as published by the Department of Telecommunications in the Gazette of India: Extraordinary, dated 16.05.2025.

2. The aforesaid Rules lay down, inter alia, the following key **compliance obligations**:

- (1) Every person to which a notified standard applies, shall ensure that the details of such standard, including the Certificate of Conformity Assessment, is displayed in such manner as may be specified by the Appropriate Authority.
- (2) No telecommunication equipment to which a standard applies, shall be sold or deployed in any telecommunication network, or otherwise be used in India, unless it has a valid Certificate of Conformity Assessment.

3. In view of the implications of these Rules on the future deployment of telecommunication equipment across Indian Railways, all stakeholders under the Ministry of Railways are advised to ensure strict compliance with the provisions of the said Rules, as applicable.

DA: As above.

Digitally signed by
GAURAV KUMAR
Date: 24-06-2025
10:59:36

(गौरव कुमार | Gaurav Kumar)
निदेशक (दूरसंचार)-I | Director (Telecom)-I
दूरभाष ☎: 011-47843013; 030-43013
ई-मेल ✉: dtele@rb.railnet.gov.in

...2/-

कमरा सं. 124, रेल भवन, रायसीना रोड, नई दिल्ली - 110001