

विद्यया विन्दतेऽमृतम्

The Institution of Railway Signal & Telecommunication Engineers

Journal
July - September, 2006

Rs. 60/- only

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: Shri Sudhir Kumar, DYCSTE/Project/NR

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GENERAL SECRETARY'S LETTER

Dear Members,

The aim of the Institute is to disseminate and share technical knowledge relating to design, construction, maintenance and adoption of modern S & T systems amongst persons associated with it. To this end the technical journal plays a vital role facilitating interchange and sharing of ideas.

The present issue is the second issue of the year. Railways Signalling is on the threshold of major revolution for improving safety and efficiency in train operations.

Some efforts have been made by CSTE's to increase membership of the Institution which is, the only one for Signalling & Telecommunication fraternity, as it is in the member's own interest and in the interest of the department in the long run. Life membership fee of our institution is the lowest among other similar comparable organizations. Each Life Member should make endeavor to make at least four new members in a year by spreading the message. In fact many individual and organization are interested but all of us had to tell them and pursue. I hope Heads of the Department and officers of S & T Organisation should encourage and persuade their officers and fellow S & T colleagues to take the benefit. List of existing members is available at our website www.irsteindia.com. Recently Railway Board has issued a no. of circulars, an effort has been made to compile them. I hope these will be of immense help to our readers. We wish that more and more S & T engineers should come forward and share their knowledge through articles (both technical as well as topics of general importance).

In September 2006, we are planning to hold 2nd International Signalling and Telecommunication Equipment Exhibition cum Seminar to be attended by representatives of World Railways, Industry and Technical Experts. It should be our endeavour to make it a grand success by way of active participation and contribution.

Distribution of this issue of the journal is directly done through CSTE's or Sr. DSTE's in the Railways as postal address in many cases gets out dated and not really available with IRSTE. It would be appreciated if members send their correct mailing address to undersigned to Shri Anshul Gupta. Of course, our esteemed retired members and sustaining members do get their copies by post. It is of course, essential that the retiring members do furnish their mailing address in advance to ensure prompt delivery and continued service.

Hope that you will find this issue an interesting one.

Sincerely yours



(Kundan Chaudhary)
General Secretary, IRSTE

New Delhi
July, 2006

Telephone : 2451200 Extn. : 42394
: 2465751
Tele Fax : 91-0522-2452332
E-mail : dsig4@rdso.rainet.gov.in



Government of India - Ministry of Railways
Research Designs & Standards Organisation
LUCKNOW - 226011

Ref. : STS/E/Exothermic Weld

M/s. Bhavnidhi Trading Co. Pvt. Ltd., H/54, Sumer Nagar, New Jain Temple, S.V. Road, Borivali (West), Mumbai-400092.	मे० भावनिधी ट्रेडिंग कं. प्रा० लि०, एच/54, सुमेर नगर, न्यू जैन मंदिर, एस.वी. रोड, बोरिवली (वेस्ट), मुम्बई-400092
M/s. McML Systems Pvt. Ltd., No. 4 Club House, Heritage Estate, Doddaballapur Road, Yelahauka, Bangalore-560064.	मे० एम.सी.एम.एल. सिस्टमस प्रा० लि०, नं० 4 क्लब हाउस, हेरिटेज एस्टेट, दोदाबालापुर रोड, येलेहन्का, बंगलौर-560064
M/s Sterling Transtel Ltd., 1417, Devika Tower, 6, Nehru Place, New Delhi	मे० स्टर्लिंग ट्रान्सटेल लि०, 1417, देविका टावर, 6, नेहरु प्लेस, नई दिल्ली
M/s. Bhagwan Dass & Co. 1855/3, Para Mohalla, Rohtak, Haryana	मे० भगवान दास एण्ड कं०, 1855/3, पारा मोहल्ला, रोहतक, हरियाणा
M/s. Ceno Tech Consultants Pvt. Ltd. D-236, Sushant Lok-1, Sector-43, Gurgaon, Haryana	मे० सेनो टेक कन्सल्टन्स प्रा० लि०, डी-236, सुशांत लोक-1, सेक्टर-43, गुडगांव, हरियाणा
M/s. Arun Verma Engineers & Contractors, 22/140, Vikram Vihar, Lajpat Nagar-IV New Delhi-110 024	मे० अरुण वर्मा इन्ज० एण्ड कान०, 22/140, विक्रम विहार, लाजपत नगर-4, नई दिल्ली-110024

Sub : Improper installation of Exothermic Bond by unskilled staff.

विषय : अनस्किल्ड स्टाफ द्वारा एक्सोथर्मिक बान्ड का इम्प्रोपर इन्स्टालेशन।

Ref. : Dir/Signal/Rly. Board's letter No. 2006/Sig/W/5 (T.C.) dt. 16.2.06.

संदर्भ : निदेश/संकेत/रेलवे बोर्ड का पत्रांक 2006/Sig/W/5 (T.C.) दि० 16.2.06.

★ ★ ★

Some Railways have reported that some times installation of Exothermic Bond is not being carried out by the authorized representative of RDSO recommended firm. This is resulting into premature deterioration of the bond connection provided by this welding procedure.

In view of the above, it is decided (vide above referred letter of Railway Board) that as far as possible following instructions may be adhered to by all concerned :-

- In all works where tender is being invited primarily for supplying and installation of Exothermic Weld/Pin Brazing method for track, circuiting application to make reliable and permanent electrical bond connection between two conductors, only RDSO recommended firms or the firms who had engaged technicians having valid competency certificate issued by the RDSO recommended firms are allowed to participate in the tender.
- In composite work, successful tenderer should purchase the material from RDSO recommended source and the installation should also be got done by RDSO recommended firm or by the technicians having valid competency certificate issued by the RDSO recommended firm.
- The material for "Exothermic Weld/Pin Brazing method for track circuiting application to make reliable and permanent electrical bond connection between two conductors" can also be procured through stores and the installation can be done by Railways trained staff, who have been given competency certificate by the RDSO recommended firms.

Therefore, you are advised to impart to technicians and issue competency certificate as per requirement mentioned in para (i), (ii) & (iii) above whenever you supply materials for this item to Railway's contractor for Railway's work, it shall be your responsibility to ensure that installation is done only by competent certified technical persons as mentioned above.

DA : Nil.

- Sd. -
(M. Mehrotra)
Director/Signal
for Director General/Signal

Copy to :-

- The Secretary/Signal Railway Board, Rail Bhawan, New Delhi - for information please.
- The CSTE & CSTE/Const. (for information & necessary action please) of all Railways.
CORE, Nawab Yusuf Road, Civil Lines, Allahabad-01
Metro Railway, 23-A, Jawaharlal Nehru Road, Kolkata-1
Konkan Rail Corp Ltd., Belapur Bhawan, Sector-11, Belapur, Navi Mumbai
Delhi Metro Rail Corporation Ltd., N.B.C.C. Place, Bhishma Pitamah Marg,
Pragati Vihar, New Delhi-110003

DA : Nil.

- Sd. -
(M. Mehrotra)
Director/Signal
for Director General/Signal

**GOVERNMENT OF INDIA
MINISTRY OF RAILWAYS
(RAILWAY BOARD)**

No. 92/Sig/SGF/5-Pt.

The General Manager (S&T)
All Zone Railways.

The General Manager (S&T) Construction
All Zone Railways

New Delhi, dtd. 22-11-05

The Director General (S&T)
R.D.S.O.
Lucknow.

Sub : Continuous Track Circuiting using Audio Frequency Track
Circuiting (AFTC) in electrified sections.

Ref. : Railway Board's letter No. 92/Sig/SGF/5-Pt. dtd. 20-4-2005.

Southern Railway vide their letter No. SG.190/P/CM Vol. 15 dated 8-2-2005 had reported complaint by a passenger about mild shock being experienced and had requested Railway Board to issue the guidelines regarding bonding and earthing scheme to be adopted for AFTC double rail track circuit of various designs.

In response to the above letter. Board vide letter referred above, has issued the scheme and the configuration for provision of continuous track circuiting using AFTC. The following was instructed :

"Single rail or double rail configuration may be adopted on Railways depending on local conditions. Single rail configuration shall be considered on sections, which are prone to theft and miscreant activities".

CSTE/Southern Railway vide letter No. SG.190/P/CN/Vol.15 dt. 12-5-05 has again approached Railway Board for issuing comprehensive guidelines for the installation of AFTC jointly with Electrical Branch.

RDSO have examined the issue and have submitted joint recommendations of Traction installation and Signal Dte's vide their letter No. STS/E/AS/CT Circuit dt. 7-10-2005. A copy of RDSO recommendations accepted by Board (ML) is enclosed herewith.

Board (ML) has approved that :

"Single Rail configuration shall be adopted on Railways for all future works".

For existing installations with double rail configuration, the matter has been referred to RDSO for recommending a definite scheme. Railway should circulate these instructions to all concerned and report compliance. These guidelines are issued in consultation with Electrical Ste. of RDSO and Railway Board.

- Sd. -
(P.K. Gupta)
Jt. Director (Signal)
Railway Board

Copy to : Sr. ED(Signal)/RDSO/Lucknow and Sr. ED(TI)/RDSO/Lucknow. This is in reference to letter dated STS/E/AS/CT Ckt dtd. 7-10-05 addressed to Secretary (Electrical) : RDSO should come out with definite scheme in line with recommendation No. 8.2 & 8.3.

**GOVERNMENT OF INDIA
MINISTRY OF RAILWAYS
(RAILWAY BOARD)**

RBS No. 7/06

No. 2005/RS(G)/779/12

New Delhi, dated 19.04.2006

The General Manager, All Indian Railways & PUs.
The Director General, RDSO, Lucknow.
The General Manager, CORE, Allahabad.
CAO/MTP, Mumbai, Chennai, Kolkata & Delhi.
CAO/DMW, Patiala and COFMOW, New Delhi.
The General Manager, NFR(C).

**Sub : Procurement policy for Signalling, Telecommunication and
Electrical Cables.**

While studying Action Taken Report (ATN) on one of the Audit Paras, it has come to Board's notice that Railways are incurring undue extra expenditure in procurement of cables through works contracts. This issue has been examined by Board in detail & after due deliberations, Board have decided that all types of cables i.e. signaling, telecom and electrical cables should be procured as a part of Stores Contracts.

In view of this, the following instructions should be followed scrupulously :-

- (1) The supply of cables needed for construction activity or maintenance activity should **not** be included in the works contract and should be procured **only** through Stores Supply Contract.
- (2) If in any eventuality, the need for including the supply of cables (signaling/telecom/electrical) in a particular works contract is felt absolutely necessary in the over all interest of the Railway, such decision should be taken after giving appropriate justification which should be agreed to by COS & FA&CAO and personally approved by GM.

This issues with the concurrence of Finance Directorate of Ministry of Railways.

- Sd. -
(Aruna Jain)
Dy. Director Railway Stores(G)-II
Railway Board

No. 2005/RS(G)/779/12

New Delhi, dated 19.04.2006

Copy to :

1. FA&CAO, All Indian Railways & Production Units
2. The ADAI (Railways), New Delhi (with 10 spare copies).
3. The Director of Audit, All Indian Railways.

for Financial Commissioner / Railways

No. 2005/RS(G)/779/12

New Delhi, dated 19.04.2006

Copy to :

1. CAO/Construction, All Indian Railways and PUs.
2. CEEs, All Indian Railways and Production Units.
3. CSTEs, All Indian Railways and Production Units.
4. The COS, All Indian Railways/PUs.
5. The COS/Konkan Railway Corporation Ltd., Raigad Bhavan, 8th Floor, Sector-11, CBD, Belapur, Navi Mumbai-400614.
6. The COS/Mumbai Rail Vikas Corporation, 2nd Floor, Church Gate Station Building, Mumbai-400020.
7. The Director General, Railway Staff College, Vadodara.
8. The Directors-
 1. Indian Railway Institute of Sig. Engg. & Telecom, Secunderabad.
 2. Indian Railway Institute of Mech. & Elec. Engg., Jamalpur.
 3. Indian Railway Institute of Elect. Engg., Nasik.
 4. Sr. Prof. (Material Management), Railway Staff College, Vadodara.
 5. Indian Railway Institute of Civil Engg., Pune.
 6. Indian Railway Institute of Logistics & Materials Management, IDA House, Sector IV, R.K. Puram, New Delhi.
9. Chairman, Railway Rates Tribunal, Chennai.
10. Executive Director, Iron & Steel, 3, Koila Ghat Street, Kolkata.
11. The Managing Director, RITES, RITES Bhavan, Sector-29, Gurgaon-1
12. Chief Commissioner, Railway Safety, Lucknow.
13. ED(QA)/RITES Bhavan, Sector-29, Gurgaon, Haryana-122001.

- Sd. -

(Aruna Jain)

Dy. Director Railway Stores(G)-II
Railway Board

No. 2005/RS(G)/779/12

New Delhi, dated 19.04.2006

Copy to :

1. The General Secretary, AIRF, 4, State Entry Road, New Delhi-55.
2. The General Secretary, NFIR, 3, Chelmsford Road, New Delhi-55.
3. The Secretary General, IRPOF, Room No. 268, Rail Bhavan, New Delhi.
4. The Secretary General, FROA, Room No. 256-D, Rail Bhavan, New Delhi.
5. The Secretary General, AIRPFA, Room No. 256D, Rail Bhavan, New Delhi

- Sd. -

(Aruna Jain)

Dy. Director Railway Stores(G)-II
Railway Board

Copy to :- Sr. PPs / PPS / PS to

- (i) CRB, FC, ML, MS, MM, MT, ME, SECY., DG (RHS), DG (RPF)
- (ii) All Additional Members / Advisors, Railway Board.
- (iii) All EDs of Railway Board.
- (iv) All Directors / Joint Director of Engg., Electrical, Mechanical, Stores, Signal, Telecom Directorates of Railway Board.
- (v) All Branches of Engg., Electrical, Finance, Mechanical, Signal, Stores and Telecom.

**GOVERNMENT OF INDIA
MINISTRY OF RAILWAYS
(RAILWAY BOARD)**

No. 2005/Tele/TW/1/Railnet Works

New Delhi, dated 24.01.2006

The General Managers,
All Indian Railways

Production Units,
MTP/Kolkata
CORE/Allahabad.

Director General/RDSO/Lucknow.
Director/Central Training Institutes.

Sub :- **Delegation of powers for Information Technology.**

Ref :- **Board's letter No. 2001/C&IS/Comp./Policy dt. 07.12.2001 & 14.07.2005.**

The issue of delegation of ceiling permitted for Internet through Broadband per user vide item No. 1.4 of the above referred letter has been considered and it has been decided that the cost ceiling per user should be enhanced from Rs. 1500/- to Rs. 3000/- per annum.

This issues with the concurrence of Finance Directorate of Ministry of Railways,

- Sd. -
(S.S. Mathur)
Director Mech. Engg. (C&IS)

**GOVERNMENT OF INDIA/BHARAT SARKAR
MINISTRY OF RAILWAYS/RAIL MANTRALAYA
RAILWAY BOARD**

No. 2001/C&IS/Comp./Policy

Dated : 07/12/2001

GMs/OSDs, All Indian Railways,
DG/RDSO, Principal/RSC,
CAO/COFMOW and DCW,
Directors, All Training Institutes,
DRMs/OSDs, All Divisions of the Indian Railways,
FA&CAO, All Indian Railways.

Sub : Delegation of Powers for Information Technology
Ref : All existing instructions, including local instructions

1. The issue of delegation of additional powers on the above subject at various levels in the Railways has been under consideration. Board has considered the issue and decided that in supersession of all existing instruction, including local instructions, on related matters, the following delegation of powers related to Information Technology shall hence forth apply -

Category	GMs	PHODs/ DRMs	SAG Officers heading independent establishments	Remarks
1.1 Procurement of PC based systems	No limit on numbers	10 nos per annum	5 nos per annum	1. Total per system cost, including hardware and software etc., as defined below, to be less than or equal to Rs. 1.0 lakhs chargeable to revenue. 2. All procurements to be done through Stores Officer nominated to look after Stores function, possibly using DGS&D rate contracts. 3. PCs shall be classified as "equipment" in terms of para 705(6) of the Indian Railways Finance Code. 4. Finance concurrence to be obtained in the usual manner as also indicated below. 5. Laptops are permitted for GMs and GM equivalents only, for all other requirements the case must be sent to Railway Board for sanction.

Category	GMs	PHODs/ DRMs	SAG Officers heading independent establishments	Remarks
1.2 Procurement of Local Area Network infrastructure	No limit on numbers, Cost per case not to exceed Rs. 20 lakh.	Railway Board desires to encourage the delegation of this power to DRMs to the limit of their Works Programme powers.	Railway Board desires to encourage the delegation of this power to SAG Officers heading independent establishments to limits to be decided by the Zonal Railways.	1. Prior concurrence of Associate Finance to be obtained in the usual manner as also indicated below. 2. If the <i>software and consultancy</i> component exceeds Rs. 10 lakhs then technical vetting directly from C&IS Dte shall be required <i>without exception</i> irrespective of sanction authority. 3. At least one terminal/node must be amde available for querying confirmation of information by external/ internal customer including the most interacting associate department. 4. Cases for sanction of PRS locations must be sent to Board for sanction.
1.3 Entering into Service agreements for IT Infrastructure (possibly on single tender basis), excluding Leasing eg. AMC, IT related Consultancy etc.	No limit on number, Value per case upto Rs. 10 lakh.	10 cases per annum. Value per case upto Rs. 5 lakh.	5 cases per annum. Value per case upto Rs. 2 lakh.	1. Contract requirements in connection with leasing of IT equipment shall be in line with instructions on Leasing of IT Infrastructure issued separately vide letter no. 2001/ C&IS/ Comp/ Policy dated 12/11/2001. 2. For certain software maintenance contracts where OEMs insist on advance payments, interest free advance payment can be made up to 20% of contract value in case of customisation/ development of software OR up to 20% of the initial purchase price, to OEMs or their authorised dealers only. 3. In case the per case advance payment value is greater than Rs. 5 lakhs, then an interest free Bank Guarantee @10% of the advance payment value, must be obtained as Performance guarantee for the period of the contract.
1.3 Internet, including E-mail, for non commercial usage including dial-up access	No limit	At any given point of time , in Divisions - all divisional officers and upto 5 additional connections, elsewhere upto 8 connections only.		1. The cost per user should be less than Rs. 1,500 per year.

2. The above powers are in addition to systems procured against any specific sanctioned works/estimates , regardless of their allocation.

3. Local Area Network Infrastructure/System in the context of this letter is defined as including all necessary hardware, software, networking, peripherals, software development, training, consultancy work etc. that are necessaru for it to be used as desired. Systems not covered under this letter shall require specific sanction directly from C&IS Dte in Board.

4. There should, in general, be no reason for deviation from the standard specification, as current, issued separately by C&IS Dte.

5. Procurement of software should normally be with the system, however, if a separate requirement comes up later, it shall be dealt with as a standard non-stock purchase.

6. Similarly consumables and spares, other than CPU motherboards, shall be treated as standard non-stock purchases. CPU motherboards should , in general, not be purchases- any specific requirement must be routed through associate finance.

7. Rules, as current, for vetting of non-stock requisitions shall apply to all IT cases.

8. The delegation of powers, as current, for repair of equipment shall apply for IT related hardware also.

9. The overall coordination, progress monitoring, budgeting and interation within the Railway and also with Railway Board in respect of all matters related to Information Technology would continue to be the responsibility of the AGM of the Railways, who may, if considered necessary, constitute an appropriate Steering Committee of concerned HODs to assist him in the discharge of these functions. He may also take the help of SrEDPMs organisation for discharge of these functions such as budgeting.

10. The concerned department at Headquarters would continue to be responsible for Planning, Formulation of proposals, monitoring the progress of the work etc. Accordingly, Workshop computerisation would be under CME, Stores computerisation under COS, PRS under CCM/PM and so on. Similarly, on Production Units the concerned HOD, which is most commonly the FA&CAO, shall look after the EDP Center.

11. On Divisions, the situation would be similar to Headquarters and an ADRM shall be responsible for overall coordination, budgeting, monitoring and interaction within the Division and with Headquarters. On divisions where the major workload in the EDP center is limited to PMIS and FMIS, close coordination with the zonal EDP center under FSA&CAO would be essential.

12. In All Training Institutes, the Institute in-charge shall be responsible for overall coordination, budgeting, monitoring and interaction within the Institute and with Headquarters.

13. The following officers are nominated to ensure *technical standards* as well as *keeping a record of the population of all Systems within their jurisdiction* irrespective of either the end-user or the method of procurement/sanction. They sahl be held directly accountable for this number. They shall also ensure technical standards of systems via technical getting of indents -

- | | |
|--------------------------|---|
| a. Zonal HQ | Sr. EDPM. |
| b. Divisions | Sr. EDPM or in his absence any other suitable officer so nominated by DRM/OSD/ADRM in-charge. |
| c. PUs/Independent Units | Sr. EDPM or in his absence any other suitable officer so nominated by the unit in-charge. |
| d. PRS Systems | CCM/PM or in his absence any other suitable officer so nominated by CCM. |
| e. FOIS Systems | Any of the CFTMs or in his absence any other suitable officer, so nominated by COM. |

14. This issues with the concurrence of Associate Finance.

- Sd. -
(TANMAY MEHTA)
Director (Mech Engg.)
Computerisation and Information Services

GOVERNMENT OF INDIA (BHARAT SARKAR)
MINISTRY OF RAILWAYS (RAIL MANTRALAYA)
RAILWAY BOARD

No. 2000/Tele/MW/7/RCIL-A

New Delhi,
Dated : 7.12.05

General Manager(S&T),
All Indian Railways.

Sub : Procedure for granting permission to RailTel for fixing equipment/additional antennae in existing telecom premises.

A. In order to simplify the procedure in respect of the above and to cut down the delays associated with the existing procedure, the following revised procedure shall come into force with immediate effect. :-

- (1) The details of all existing permissions granted for floor space as well as tower space including extent of the space, dimensions, shape and weight of the antenna, party for whom it is permitted, period for which it is permitted, annual lease amount etc. will be maintained in 3 copies in a register to be signed jointly by Dy.CSTE/MW, or Sr.DSTE of the Railway and a JA Grade officer from RailTel. This will be maintained in 3 copies in Sr. DSTE's office / MW office, CCE's office and RailTel's office. To start with all existing equipments should be entered in the register jointly in a serial fashion within one month's time.
- (2) For subsequent proposals, RailTel will give the above particulars and the permission should normally be granted within a period of one month from the date of receipt of the request from RailTel after ensuring that the particulars are entered in the relevant register and item number, page number, in the Register should be mentioned in the formal approval given by the CCE.
- (3) Where it is not feasible to spare the building space, RailTel should be informed about that within 15 days from the date of receipt of the request.
- (4) In case of additional antenna on the tower, normally up to 10 numbers of additional antenna each weighing not more than 20 Kg can be permitted without detailed structural analysis on the existing towers provided new antennas are not of solid parabolic shape (i.e. they are of grid type, ground plane type, array type, or yagi type) Likewise, detailed analysis for one additional antenna of parabolic shape or one antenna of any shape more than 20 kg will also not be necessary in cases where existing tower is designed for more number of parabolic dishes (say 3 or 4) and the tower is at present carrying only less number of parabolic dishes (like 1 or 2 as the case may be). This will in effect mean that detailed structural analysis for solid parabolic dishes or any antenna above 20 kgs will only be required in cases where the design capacity of the tower for solid parabolic antenna has been fully utilized.
- (5) For non-parabolic antenna more than 10 numbers or individual antennas weighing more than 20 kgs or for any additional parabolic antenna (which are not covered by clause (4) above), it may be necessary to have the feasibility from structural design point of view checked by a reputed consultant. For this purpose, RailTel will submit names of reputed consultant. For this purpose, RailTel will submit names of reputed structural engineering consultants and get them approved by the Board and the analysis

should be got done from one of them only.

- (6) In cases of additional antenna where the railway feels that structural analysis is called for as per the above criteria, the same should be intimated to RailTel within a maximum period of one month from the date of receipt of the proposal and on submission of positive feasibility report from the above structural engineering consultant, approval should be given within a period of 15 days from the date of receipt of consultant's clearance through RailTel; consultancy charges to be borne by RailTel.
- (7) Where the railway does not give any reply to RailTel within a period of one month from the receipt of date of the proposal, it will be presumed that the approval has been accorded and RailTel can go ahead with the commercial formalities and the railway will be responsible for implementing the decision.
- (8) All approvals referred to in the above paras shall be given by CCE/CSTE.

B. The above procedure would apply for the buildings and towers which are in use by the Railways, RailTel have also pointed that in number of sections where OFC with route diversity is available, the MW or UHF buildings, towers and RE repeater buildings etc. may become surplus since the telecom links will no longer be necessary. The list of such telecom premises which will become redundant with the commissioning of OFC may be advised to the Board within 15 days so that this in turn can be advised to RailTel. As per para 3.1.3. and 3.2.4 of the Agreement signed between Ministry of railways and RailTel (30th July'03), RailTel can fully exploit the surplus building space and the tower space at these premises and take over the operational control of the buildings and towers subject to the following conditions :-

- (1) RailTel will get the buildings maintained through AMC as per the standard AMC schedule to be approved once by the concerned CSTE (in consultation with Engineering Deptt.) and RailTel will also give undertaking to maintain the building as per the approved AMC schedule for the duration the building is under their operational control.
- (2) RailTel will get the preventive maintenance done for the MW towers including tightening of fixtures, painting, checking verticality, checking antenna mounting arrangements and also maintenance of aviation warning arrangements as per the periodicity laid down on the railways at present. For this purpose, they will enter into an AMC and the standard AMC schedule will be approved once by the CSTE to ensure its adequacy. A commitment will be taken from M/s RailTel that for the entire period of the tower being under their operational control, they will maintain the towers through an AMC as per the standard schedule approved by the concerned CSTE.

C. In both the cases above i.e. where in an existing telecom premises under railway's operational control building space or tower space is given to RailTel or in telecom premises whose operational control is transferred to RailTel due to its non-essentiality from Railway's point of view, whenever railway requires space in the building to mount communication equipment for their own operational requirements or mount additional antenna on the towers for Railways own requirement, these shall be given highest priority and RailTel shall make available the necessary floor space and the tower space within a period of 3 months of being directed to do so. If necessary, RailTel shall make available the required floor space and tower space by shifting the existing equipment / antenna and making alternative arrangements for the same at their cost. Necessary declaration to this effect may be obtained from the concerned regional office of RailTel.

- Sd. -

(Kapil Dev Sharma)
Esec. Director (Telecom Dev.)
Railway Board

Government of India (Bharat Sarkar)
Ministry of Railways (Rail Mantralaya)
Railway Board

No. 2003/Tele/RCIL/1

Date : 17th November, 2005

**General manager (S&T),
All Indian Railways.**

**Sub :- Access for RailTel officers and Supervisors and
RailTel's customers in railway premises.**

RailTel have brought out some difficulties experienced by them in some of the railways in installing their equipment in existing Railway Telecom premises and also difficulties in the entry for RailTel's staff and for their customer staff (whenever customer equipment is co-located) in Railway premises. It has been decided that where railway telecom staff are available round the clock in the telecom premises, access to RailTel's staff should be accorded based on photo identity Cards issued by RailTel and also for RailTel's customer's staff based on photo identity cards issued by RailTel on their behalf.

In respect of Telecom installations wherever Railway telecom staff are not available round the clock, premises should be provided with two keys, one of which may be given to RailTel and the premises should be opened by them only in the presence of the RailTel's staff even if it is required for some customer related equipment and a register should be maintained in such premises for the RailTel representative to enter the timings and purpose of the visit and details of the RailTel's staff who had undertaken the visit.

- Sd. -
(Sanjay Dungrakoti)
Director (Telecom)
Railway Board

Copy to : MD / RailTel, New Delhi, for information.

GOVERNMENT OF INDIA
MINISTRY OF RAILWAYS
RAILWAY BOARD

No. 200/Tele/TN/3

New Delhi dated 02.05.2005

**General Managers,
All Indian Railways,
Production Units,
MTP/Kolkata,
CORE/ALD.**

**Chairman/Railway Recruitment Boards,
Director General/RDSO/Lucknow,
Director/Central Training Institutes.**

**Sub : Provision of Phone at Stations/Locations - Fixed WLL
Telephones**

**Ref: Board's letter No. 2000/Tele/TN/3 dated 05.09.2003,
09.09.2004, and 16.09.2004**

Vide letters referred to above, Board had reiterated their directives on provision of BSNL/MTNL's FWT (Fixed wireless Telephone) at Stations/Locations where landline connectivity is not available/feasible.

2. It was brought to the notice of this office that BSNL had expressed their inability to provide FWT connections at some of the stations and a query was raised as to whether service providers other than BSNL/MTNL could be approached to provide FWT connections at these locations.
3. Ministry of Railways have considered the matter and agreed for the provision of FWT by other service providers at stations where facilities are not provided by BSNL/MTNL. Railways may do this with concurrence of FA&CAO and approval of the General Manager. Selection of vendor/service provider may be done in fair and transparent manner and this arrangement may be terminated as and when BSNL/MTNL are able to provide FWT facilities at such stations.
4. Necessary action may be taken accordingly under advice to his office.
5. This issues with the concurrence of Finance Directorate of Ministry of Railways.
6. Please acknowledge receipt.
(This disposes off Western Railway's letter No. G.617/12 Vol.VIII dated 15.12.2004).

- Sd. -
(Sanjay Dungrakoti)
Director/Telecom

No.2000/Tele/TN/3

New Delhi dated 02.05.2005

Copy to :-

- i) FA&CAO, All Indian Railways.
- ii) The Deputy Comptroller & Auditor General of India (Railways).
R.No.224, Rail Bhawan, New Delhi. (With 48 spares).

For Financial Commissioner/Railways.

No.2000/Tele/TN/3

New Delhi dated 02.05.2005

Copy to :-

- i) F(X)II & Budget Branches of Railway Board.
- ii) Chief Signal & Telecom Engineers/All Indian Railways.

**GOVERNMENT OF INDIA
MINISTRY OF RAILWAYS
RAILWAY BOARD**

No. 2000/Tele/MW/4/RIL-P(Internet)/Pt.

New Delhi. dt. 06.05.05

**General Managers,
All Indian Railways.**

Sub :- Setting up of Cyber Café by RailTel.

Board (ML & MT) has approved the setting up of Cyber Café at 82 stations on Indian Railways as per the list enclosed (Annexure-I), by RailTel, Corporation of India Ltd. The category of reservation for a particular station, assigned as per the Commercial circular No. 9 of 2004, is mentioned against its name.

The task of setting up of Cyber Café over Indian Railways by RailTel is a critical activity and needs to be completed at the earliest.

Therefore, it is requested that all assistance to RailTel should be given by the Zonal Railways to complete the above task within the target. The detailed guidelines for setting up the Cyber Café have already been issued vide Commercial circular No. 9 of 2004 of Railway Board.

- Sd. -
(Sanjay Dungarkoti)
Director/Tele

Copy to :

MD/RCIL, Bank of Baroda Building, 10th Floor, 16 Sansad Marg,
New Delhi for information and necessary action.

Sl.No.	Name of the Stations	Categories
1	Howrah	Women (General) Unreserved
2	Sealdah	Educated Unemployed (Unreserved)
3	Asansol	Open to all
4	Patna	Open to all
5	Gaya	Open to all
6	Dhanbad	Open to all
7	Mughalsarai	Open to all
8	Bhubneswar	Open to all
9	Cuttak	Open to all
10	Puti	Open to all
11	Vishakhapatanam	Open to all
12	Sambalpur	Women (OBC)
13	Guwahati	Educated Unemployed (OBC)
14	Kharagpur	Open to all
15	Tata Nagar	Educated Unemployed youth (SC)
16	Ranchi	Educated Unemployed (OBC)
17	Roukela	Open to all
18	Raipur	Physically Handicapped (SC)
19	Bilaspur	Open to all
20	Bareilly	Physically Handicapped (SC)
21	Lucknow (N.E.R)	Physically Handicapped (General) Un-Reserved
22	Gorakhpur	Open to all
23	Varanasi	Open to all
24	Amritsar	Open to all
25	Jalandhar	Educated Unemployed General (UR)
26	Ludhiana	Women (General) (UR)
27	Ambala	Educated Unemployed General (UR)
28	Jammu Tawi	Physically Handicapped (General) (UR)
29	Lucknow (N.R.)	Educated Unemployed (UR)
30	Chandigarh	Open to all
31	Moradabad	Educated Unemployed (OBC)
32	Saharanpur	Women (OBC)
33	Haridwar	Women (General)
34	Dehradoon	Open to all
35	Shimla	Physically Handicapped (ST)
36	Kanpur Central	Open to all
37	Agra Cantt.	Educated Unemployed (General)
38	Jhansi	Open to all
39	Mathura	Women (OBC)
40	Gwalior	Open to all
41	Allahabad	Educated Unemployed (UR)
42	Aligarh	Educated Unemployed (OBC)
43	Jaipur	Educated Unemployed (SC)
44	Jodhpur	Educated Unemployed (OBC)
45	Abu Road	Open to all
46	Ajmer	Women (General)
47	Secunderabad	Educated Unemployed (General) (UR)
48	Hyderabad	Open to all
49	Vijayawada	Women (ST)
50	Tirupati	Educated Unemployed (ST)
51	Guntur	Open to all
52	Bangalore	Open to all

**GOVERNMENT OF INDIA
MINISTRY OF RAILWAYS
(RAILWAY BOARD)**

No. 2000/Tele/TN/1/Pt.

New Delhi, dated 29.04.2005

**General Managers,
All Indian Railways.**

**Sub :- Provision of cellular phones to the officers of the Commission of
Railway Safety.**

Ref. :- Railway Board's letter of even no. dated 20.02.2004.

The matter of provision of cellular phone with roaming facility for Deputy CsRS was requested by CCRS and considered by Railway Administration in consultation with Ministry of Finance. It has been decided that Dy. ScRS can opt for GSM Cellular Phones as per the terms and conditions set and issued vide Railway Board's letter of even number dated 6.5.04.

This issues with the concurrence of the Finance Directorate of Ministry of Railways.

- Sd. -
(Sanjay Dungrakoti)
Director/Tele

No. 2000/Tele/TN/1/Pt.

New Delhi, dated 29.03.2005

Copy to:

1. FA&CAOs, All Indian Railways
2. Deputy Comptroller and Auditor General of India (Railways) Room
No. 224, Rail Bhawan, New Delhi

For Financial Commissioner/Railways

Copy for information to:

1. General Manager (S&T), All Indian Railways.
2. Chief Commissioner of Railway Safety/lucknow w.r.t. his proposed agenda item No. 6 for the meeting of Commission of Railway Safety with Railway Board in first quarter of 2005.
3. All Commissioners of Railway Board.
4. Advisor Safety, Railway Board.
5. F(X)II Branch of Railway Board.

53	Mysore	Open to all
54	Hubli	Open to all
55	Chennai	Open to all
56	Chennai Egmore	Physically Handicapped (OBC)
57	Calicut	Physically Handicapped (UR)
58	Coimbatore	Educated Unemployed (SC)
59	Madurai	Open to all
60	Tiruchirappalli	Educated Unemployed (SC)
61	Emakulam	Educated Unemployed (General) (UR)
62	Trivandrum	Open to all
63	Palghat	Educated Unemployed (OBC)
64	Lonavala	Open to all
65	Nagpur	Open to all
66	Dadar	Open to all
67	Pune	Open to all
68	Bombay Central	Open to all
69	Vapi	Open to all
70	Bandra	Physically Handicapped (OBC)
71	Surat	Women (SC)
72	Indore	Educated Unemployed (OBC)
73	Ujjain	Open to all
74	Valsad	Educated Unemployed (General) (UR)
75	Ahmedabad	Women General (UR)
76	Kota	Open to all
77	Vadodara	Educated Unemployed (General) (UR)
78	Borivali	Women General (UR)
79	Boisar	Open to all
80	Churchgate	Open to all
81	Bhopal	Open to all
82	Jabalpur	Open to all
SUMMARY		
Open to all		41
Educated Unemployed (General)		10
Educated Unemployed (SC)		4
Educated Unemployed (ST)		1
Educated Unemployed (OBC)		6
Women General		5
Women General (SC)		1
Women General (ST)		1
Women General (OBC)		3
Physically Handicapped General		5
Physically Handicapped General (SC)		1
Physically Handicapped General (ST)		1
Physically Handicapped General (OBC)		3
TOTAL		82

**GOVERNMENT OF INDIA
MINISTRY OF RAILWAYS
(RAILWAY BOARD)**

No. 2001/Tele/MW7/C/Pt.

New Delhi. dated 07.11.2005

**General Managers (S&T),
Central Northern, North Central,
North Western, Western & West Central Railways.**

**Sub :- Re-distribution of MW Assets
Ref :- Board's letter of even no. 17.11.2003.**

Vide Board's above referred letter, instructions were issued for re-distribution/re-imburement of MW assets. Some of the Railways and both the Federations requested for reconsideration of certain issues particularly assets placed at Thompson Road and Ghaziabad. Accordingly, the entire matter has been reconsidered and following directives are issued with the approval of Board (ML).

- i) Thompson Road, Delhi & Faridabad MW statin of NCR/CR link should be with NCR as these are part of long haul link Delhi-Jhansi-Mumbai. Earlier also, Thompson Road Delhi of Central Railway link was with CR.
- ii) Thompson Road Delhi & Ghaziabad MW stations of DLI-MGS link should continue to be with Northern Railway to maintain the status quo.
- iii) There are 4 directions for Devpura, three out of these directions Devpura-lalan, Devpura-Nimoda and Devpura-Sawai Madhopur caters for communication requirements of WCR. Sawaimadhpor too, falls under the jurisdiction of the WCR. Considering this, Devpura-Sawaimadhpor spur link should be transferred to WCR.
- iv) Palanpur prior to formation of Ahmedabad Division was with Ajmer Division of NWR. With the formation of 'Ahmedabad Division', Section 'Ahmedabad-palanpur', including Palanpur has been transferred to Ahmedabad Division of WR. Accordingly, Palanpur station may be transferred to WR as per territorial jurisdiction and also considering that Palanpur is an important terminal/Jn. of WR.
- v) 'Delhi-BKN' link should be transferred to NR and NWR as per territorial jurisdiction except Rewari station, which could remain with NR as the link Delhi-Nangloi-Rewari should be with single agency for effective maintenance and operations.
- vi) As regards repairs and maintenance activities, Northern Railway's existing analog & digital MW laboratories will also cater to the repairing, tuning and annual line up of analog & digital MW equipment of portions of links of Delhi-MGS & Delhi-BKN with NCR/NWR.
- vii) Directives in respect of seniority of MW staff will be issued shortly.

- Sd. -
(Sanjay Dungrakoti)
Director/Tele

Copy to :
DDB (LR), Railway Board - for information please.

**GOVERNMENT OF INDIA (BHARAT SARKAR)
MINISTRY OF RAILWAYS (RAIL MANTRALAYA)
(RAILWAY BOARD)**

No. 2006/Tele/TP/1

New Delhi,
Dated: 12.4.06

**The General Manager (S&T)
&
The General Manager(S&T)/Const.**

All Indian Railways.

Sub : Laying of OFC cable in the duct.

There are no precise policy guidelines available at present for laying of OFC/Quad cable in the duct/HDPE pipe on Indian Railways. This is resulting in large number of QFC/Quad cable cuts occurring due to construction works primarily alongwith tacks leading to prolonged disruption in telecom services as well as train operations. Besides, OFC cable directly laid/buried results in severe stress on the cable causing unwanted jitters, reflections and high value of attenuation thereby not permitting broader bandwidth. Laying of OFC cable in HDPE pipe/duct following advantages :-

- (i) High-density Polythylene (HDPE) Duct provides solid protection to the cable acting as a shield, thus, avoiding cuts.
- (ii) A trench with pipe/duct can be closed in advance and blowing of the cable is possible afterwards. Hence, by using ducts, investment on OFC can be suitably deferred without affecting progress of the work.
- (iii) In case of directly buried cable, each cut amounts to two additional splies in the cable. But in the case of duct blown cables additional length of cable provided in pits may be pulled to provide cable space for splicing, thus, reducing number of splices and hence improved performance.
- (iv) Use of HDPE ducts helps a great deal in improving of speed of construction work. Since ducts are available in drum length of 500 Mtrs., so there is no need of making a complete trench of equivalent to 3 Km. cable drum length. Additionally, the work of duct burial can be taken up simuntaneously at several locations in the block section.

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-
- (v) Experience have shown that availability of fibres in duct cables is distinctly superior to direct buried cables.
- (vi) Another advantage of ducting is multiple use of the cable path. In case of advent of superior cables in future, tedious exercise of trenching would not be needed for duct blown cables. Existing cables can be de-blown from existing ducts and new cables re-blown into them resulting in faster and cheaper installation.

2. In view of the above, it has been decided to standardise laying of OFC/Quad cables in all future works. Sanctioned works where OFC laying is yet to be taken up, should also be suitably revised to provide for duct.

3. This issues with the concurrence of Finance Directorate of Ministry of Railways.

Please acknowledge receipt.

- Sd. -
(Kapil Dev Sharma)
Exec. Director (Telecom Dev.)
Railway Board

No. 2006/Tele/TP/1

Dated : 12.4.06

1. FA&CAO, All Indian Railways.
2. FA&CAO (Const.), All Indian Railways.
3. Deputy Comptroller and Auditor General of India (Railways), 224, Rail Bhawan, New Delhi (with 46 spares).

For Financial Commissioner/Railways

Copy to: F(X)II & Budger Branches of Railway Board.

GOVERNMENT OF INDIA/BHARAT SARKAR
MINISTRY OF RAILWAYS/RAIL MANTRALAYA
(RAILWAY BOARD)

No. 2006/Tele/TC/1

New Delhi dated: 17.4.2006

Executive Director/QA(S&T)
RDSO,
Lucknow.

Sub: Inspection of Telecom items as per TEC specification.
Ref: RDSO's letter No. STT/G/Inspection/Policy/805 dt. 31.3.2006.

Vide above referred proposal of RDSO for streamlining the Inspection policy of telecom materials, the policy for inspection of items as per TEC specification is modified as under :

- i) The materials which are procured from RDSO approved firms with RDSO specification and if the cost of the material is over Rs. 1 lakh, the inspection shall be carried out by RDSO.
- ii) All the materials with TEC/BSNL specification and procured from TEC/BSNL approved firms (approved for bulk supply and not as interface approval) shall also be inspected by RDSO provided the cost of the material is more than Rs. 1 lakhs.
- iii) All the materials with TEC/BSNL specification and procured from sources not approved by TEC/BSNL (including firms having only interface approval) shall also be inspected by RDSO provided the cost of the material is over Rs. 5 lakhs. However, in such cases RDSO shall carry out prototype approval before taking up regular inspection.
- iv) Sophisticated telecom items as an exception can also be taken up for inspection by RDSO as per railway's specification. The approved acceptance test format shall have to be supplied by railways duly approved by the concerned CSTE.
- v) RDSO shall not inspect "Test and Measuring" equipments. Electronic exchange/ intercom, auto telephones and spare parts of all telecom equipments. The same may be inspected by railway's representative as nominated by zonal railways.

This policy is issued as a guideline to Quality Assurance (S&T) Dte. for taking up the inspection of the telecom items superseding all earlier guidelines issued from time to time by the Board as well as RDSO.

- Sd. -
(Sanjay Dugrakoti)
Director/Telecom

Copy to :
ED/Telecom/RDSO/Lucknow for information
GM(S&T)/All Indian Railways for information.

**GOVERNMENT OF INDIA
MINISTRY OF RAILWAYS
(RAILWAY BOARD)**

No. 2001/Tele/MW/7/C/Pt.

New Delhi dated 29.03.2006

**General Managers (S&T)
All Indian Railways.**

**Sub :- Introduction of Optical Fibre Communication (OFC)
System - Reorganization of Telecom Cadre.**

**Ref:- Board's letters of even number dated 17.11.2003 &
07.11.2005.**

Vide above referred letters, the issues relating to re-distribution of MW assets has been finalized. Now in continuation of paras 5, 6 & 7 of Board's letter dt. 17.11.03 and para 1(vii) of their letter dt. 17.11.05 following further instructions are issued:

2. The introduction of various computer based data networks for applications like PRS, UTS, FOIS, COIS, MIS, Railnet etc. coupled with tremendous advancement in communication technology and the need for taking advantage of this technology have all necessitated installation of Optic Fibre Communication (OFC) system consisting of OFC cable, Quad cable and associated electronics such as PD MUX, STM equipments etc. in the Railways. With this change in the scenario the traditional Microwave links will disappear to make room for the new advanced technology. Accordingly while manpower will be required for operation and maintenance of OFC assets, its requirement for microwave system will drastically reduce and disappear altogether in the near future. Therefore, to meet the requirement of the changing scenario following steps may be taken to ensure that newly installed OFC and quad cable based communication systems including data networks are effectively maintained by the existing staff including those working on Microwave system of communication:

i) The MW staff may be given necessary training on various aspects of operation and maintenance of OFC, quad cable assets as well as data networks and deployed accordingly. For this purpose, Zonal Training Centres should organize special courses to train staff.

ii) Since OFC system is controlled by computer based network monitoring centres located at Divisional Headquarters and local leads are provided by the divisions, the Telecom cadre including that dealing with various data networks, has to be necessarily Division controlled their control will shift to the Divisions. However, to begin with while day to day administrative control of existing staff may be transferred to Divisions, for the purpose of their seniority and promotions they may continue to be headquarter controlled.

iii) As a corollary to (ii) above, the headquarter controlled MW (WTM) cadre and the Division controlled (WTM) cadre will get redeployed gradually both in respect of control and functions as follows :-

a) As and when headquarter-controlled MW posts against direct recruitment quota in Group 'C' at the level of Wireless Telecom Maintainer (WTM) Gr. III, JE (Telecom) Gr.II and SE (Telecom) and

at the lowest Group 'D' level of Helper Gr.II, fall vacant these vacant posts will be transferred and added to the strength of corresponding cadre/grade in the Divisions.

b) The posts at the level of Maintainers in Gr.III after transfer as per (a) above will be re-designated as Telecom Maintainers (TCM) at par with the practice on signaling side, where unified signal maintenance practices have been evolved with a common designation of Signal Maintainer.

This re-designation will also apply to direct recruitment quota of WTM posts in the divisions and also to promotional quota vacancies of WTM's in the divisions when there is no staff available to be promoted in the feeder grade below.

c) In the above process when there is no MW staff available to be promoted to the next higher grade, the vacant promotional quota post in MW will also be transferred to the Divisions and filled up by the divisions in various grades of Telecom Maintainers, JE(Telecom) and SE/SSE(Telecom)

d) Future induction by way of recruitment to begin with and by promotion in due course will be to the cadre of Telecom Maintainers in the Divisions. Henceforth, there shall be no recruitment in WTM cadre either in the Headquarter controlled posts or in the Divisions. Further, no more posts would be created in the MW cadre.

3. This issues with the approval of the Establishment Dte. and concurrence of the Finance Directorate of the Ministry of Railways.

4. The receipt of this letter may please be acknowledged.

- Sd. -
(Sanjay Dugrakoti)
Director/Tele

No. 2001/Tele/MW/7/C/Pt.

New Delhi dated 29.03.2006

Copy to: Dy. Comptroller & Auditor General of India (Rlys.)
Room No. 224, Rail Bhawan, New Delhi (with 40 spares)

For Financial Commissioner (Rlys)

Copy for similar action to:

1. CPOs/All Indian Railways/PUs
2. FA&CAOs/All Indian Railways/PUs

- Sd. -
(Sanjay Dugrakoti)
Director/Tele

Copy to :

1. The General Secretary, AIRF, 4, State Entry Road, New Delhi (with 35 spares).
2. The General Secretary, NFIR, 3, Cheimsford Road, New Delhi (with 35 spares).
3. The General Secretary, IRPOF (with 35 spares).
4. All members of the National Council/Deptt. Council & Secretary, Staff side. 13-C, Feroshah Road, ND (with 90 spares).
5. The General Secretary, FROA (with 5 spares).
6. The Secretary Genl. RPF Assocaiton, R.No. 549, Rail Bhawan, New Delhi(with 5 spares).
7. The Secretary, RBSS Group 'A officers' Associaton (with 5 spares).
8. The President, Railway Class II Officers Association (with 5 spares).
9. The President, Indian Railway Class II Officers Association (with 5 spares).
10. The Secretary, Railway Board Ministerial Staff Class II Officers Association (with 5 spares)
11. The Secretary, Railway Board Class IV Staff Association (with 5 spares)

FOR SECRETARY, RAILWAY BOARD

Copy to Sr. PPs/PPSs/ PSs/ PAs to:

MR, MSR(N), MSR(V), CRN, FC, ME, ML, MM, MS, MT, AM(B), AM(CE), AM(C) AM (C&IS), AM(Elect.), AM(C), AM(F), AM(Plg.), AM(Projects), Am9Staff), AM(Sig.), AM(MS), AM(Mech.), MA(PU), AM(RS), AM(T&C), AM(Tele), AM(T), AM(V), AM(Works), Adv.(IR), DG/RHS, DG/RPF, Secretary, ED(Plg.), ED(A), DF(BC), EDCE(B&S), EDCE(G.), EDCE(Plg.), EDCC, ED(Chg.), ED(C&IS), ED(E&R), EDEE(Dev.), EDEE(G), EDEE(RS)EDE, EDE(RRB_, EDE(N), EDE(Res.), EDF(C), EDF(S), EDF(B), EDF(RM), EDF(X)I, ED(H), ED(LM), ED(MIS), EDE(GC), EDT(MPP), EDME(Chg.), EDME(FR), EDME(TR), EDME(TOT), EDME(Dev.), EDME(W), EDPC-I, ED(Plg.), ED(PP), ED(Proj.), ED(Proj.)-DMRC, EDRE, EDRE(S&T), EDRE(S), ED(Safety), ED(Signal), ED(S&E), EDRS(C), EDRS(G), EDRS(P), EDRS(P), EDRS(S), EDRS(W), ED(TD), ED(TD), EDTTrack(ML),ED/Track(MC), ED/Track(P), ED(T&C), ED(CP), ED(PM), ED(PG), EDT(R), EDTC(FM), EDTT(M), EDTT(FM), EDTT(S), DV(A), EDV(E), EDV(S), EDV(T), ED(W), IG/RPF(HQ.)/IG/IR, JS, JS(C), JS(D), JS(E), JS(G), JS(P)

E(NG)iI, E(NG)II, E(MPP), M(C), E&R, F(E) Spl. & F(E)I (With 5 spares), Branches of Railway Board

**GOVERNMENT OF INDIA
MINISTRY OF RAILWAYS
(RAILWAY BOARD)**

No. 2002/Tele/WCM/6/Genl/Pt.

New Delhi, dated 27.03.2006

**General Managers (S&T),
All Indian Railways.**

Sub :- Guidelines for dealing with WPC.

It is being observed that Railways are not following proper procedure while dealing with EPC resulting in delay in getting required licenses and clearances for the new works. The following procedure should be adopted while dealing with WPC for different reasons :-

a) Obtaining API (Agreement-in-Principle) :

This is the first step for obtaining the permission to use a particular frequency for the new application such as MTRC, ACD and INMARSAT etc. Railways should apply in the format which is available at website of WPC (www.wpc.dot.gov.in). Normally, AIP is issued for a specified period between 3 months to one year and during that period, operating licence should be obtained. The AIP is only valid for the quantities of equipments mentioned therein. Normally the application of AIP should be routed through Railway Board but regular chasing with WPC is required for obtaining the AIP by concerned Railways. The details of concerned authorities of WPC are enclosed along with this letter as Annexure-1. Application for renewal should be sent well within the validity period if required.

b) Obtaining the Import licence :

The Import licence should be obtained by the firm who is executing the work for importing the radio equipments from abroad, if required. The following documents are required to be enclosed with the application :-

- i) Application in the required format :
- ii) Draft of Rs. 500/- in favour of Pay & Accounts Officer (Hqrs)DoT/New Delhi (code No. 0691).
- iii) Equipment literature
- iv) Copy of AIP.

While applying for Import licence, the no. of equipment should not exceed than that mentioned in AIP. This should be applied directly by the supplier and no reference needs to be made to the Board.

c) Obtaining SACFA clearance :

The procedure for obtaining SACFA clearance for various sites of new application is detailed at WPC website. The entire process has now been computerized and made available online. The application for obtaining SACFA clearance should be filed online and ID number is generated automatically after filling the application form. Complete application form should be given as hard copy along with following documents :-

- i) Application in the required format along with a demand draft of Rs. 1000/- per ID drawn in favour of Pay & Accounts Officer (Hqrs) DoT/New Delhi (code No. 0691).
- ii) ID acknowledgement form
- iii) Map

WPC will issue a WPC acceptance number through a letter and that letter along with the above mentioned documents should be submitted to all the SACFA members (the desired number of copies as detailed in the WPC website) for obtaining the clearance. As soon as WPC issues an acceptance number, the application also gets transmitted to all SACFA members online also automatically. It is advised that the Railways should chase up with the concerned SACFA members for the early clearance. Once the main SACFA members clear the application, WPC issues final site clearance. This document is required for obtaining operating licence.

d) Obtaining the Operating licence :

The regular licence for operating the frequency should be obtained within the currency of AIP. The following documents need to be attached along with application :-

- i) Application in the required format;
- ii) Copy of valid AIP
- iii) Type of radio equipment & model along with Invoice copy and delivery challan of the equipment.
- iv) Copy of SACFA site clearance
- v) Draft for licence fee and royalty, if applicable. (This will differ from case to case and will have to be obtained from WPC).

This application should be sent directly to WPC by Zonal Railways and need not be routed through Board.

e) Granting SACFA clearance to other applicants :

The following procedure should be adopted for granting SACFA clearance to the site clearance to the site clearance applications of other telecom users:-

- i) Application should be examined and comments should be issued within 15 days.
- ii) The NOC should be mailed to SACFA Cell of Board at the address sacfacell@rb.railnet.gov.in and also a hard copy should be sent to Board's office.
- iii) Copy need not be endorsed to SACFA Secretariat/WPC.
- iv) In case of deficiency in the application such as Map is not attached, spot frequency not mentioned, difference in geo-coordinates given in the application and map etc. should be brought to the notice of the applicant under intimation to this office at the above address.

The above are board guidelines which should be followed to avoid delay in dealing with WPC as has been experienced in the recent cases of MTRC, ACD and V-SAT projects. Board has also issued instructions for maintaining a separate SACFA & PTCC Cell at the Zonal level for dealing and monitoring these cases in a regular manner. With the proliferation of telecom infrastructure, both within and outside Railway, such arrangements are required to systematically cope with increasing workload on this account.

- Sd. -
(Sanjay Dungrakoti)
Director/Tele

WPC/Officers Name & Telephones Nos. **Annexure-1**
(6th floor, Sanchar Bhavan)

Officer Name	Designation	Telephones Nos.
Dr. J.S. Sarma	Secretary/DOT	23719898, 23711209
Shri P.K. Garg	Wireless Adviser	23755420, 23036776
Shri R.J.S. Kushwaha(GSM-R)	Joint Wireless Adviser	23355442, 23036889
Shri Ashoka Chandra(NFAP)	Joint Wireless Adviser	23036672
Shri Ashoka Kumar(Renewal of Licence)	Joint Wireless Adviser	23372183, 23036893
Shri Vardhakrishnan	Dy. Wireless Adviser	23372176, 23036950
Shri Singaravelu(Site Clearance)	Dy. Wireless Adviser	23372081, 23036539
Shri G.K. Agarwal(Frequency allotment)	Dy. Wireless Adviser	23755440, 23036603
Shri Gunashekar(Frequency allotment)	Dy. Wireless Adviser	230366507
R.B. Prasad	Asstt. Wireless Adviser	23372180, 23036613
R.K. Saxena	Asstt. Wireless Adviser	23359564, 23036630
Rama Rao	Asstt. Wireless Adviser	23036951
Shri M.K. Rao	Asstt. Wireless Adviser	23372182, 23036896
Smt. Deepa Agrawal	Asstt. Wireless Adviser	23036391
Shri Sukhpal Singh	Asstt. Wireless Adviser	23359562, 23036540
Dr. S.M. Sharma	Asstt. Wireless Adviser	23036775
Shri M.A. Siddiqui	Engineer	23359563, 23036084
R.K. Srivastava,LR/Section (Dealing Licence/Renewal of Licence)		23372182, 23036896
Sri Prabhakar/LR Section (Dealing Inmarsat Case)	Engineer	23372182, 23036896
Shri S.D. Sharma	Engineer	23036148
Shri H.S. Siddiqui	Engineer	23036721
Shri Jagdev Singh (Mast Height Category)	Engineer	23036891
H.M. Srivastava (Site Clearance Govt.)	Engineer	23036195
Shri Dev Raj (Site Clearance/Pvt.)	Engineer	20306891

**GOVERNMENT OF INDIA
MINISTRY OF RAILWAYS
(RAILWAY BOARD)**

'MISSION 700'

No. 2003/Tele/TCM/1/Pt.1

New Delhi, dated 04.05.2006

**General Managers,
All Indian Railways.
Director General/RDSO,
Lucknow.**

Sub:- Priorities for passenger business - Touch & feel items.

PA system and Train Indication Boards are listed in the priorities for passenger business which are being critically monitored by Board for improving the touch and feel of Indian Railways. Accordingly, the issue has been examined and following guidelines are issued regarding improving the availability and quality of these items with the approval of Board (CRB, ML, ME & FC):-

- 1. PA System :-**
 - i) Public Address system should be provided at all 'A', 'B' & 'C' category stations.
 - ii) All 'A', 'B' & 'C' class & model stations should be provided with digital announcement system. In case of digital system exhaustive list should be made for kind of message to be relayed. These are software based prerecorded speech messages in standard soothing voice taking care of the regional dialects. This will help in standardization of announcement and eliminate the human element.
 - iii) List of approved vendors to be fixed by RDSO.
 - iv) Equipments need to be standardized with detailed specifications to be drawn up to ensure sound quality and reliable working.
- 2. Train Indication Board :-**
 - i) All 'A' class stations, model stations and suburban stations should be provided with Train Indication boards.
 - ii) Equipments with different technology need to be standardized with detailed specifications for different ambient lighting conditions.
 - iii) List of approved vendors to be fixed for different technologies. It has to be ensured that the equipments are supported for the life period of 5-8 years.
 - iv) Detailed installation and maintenance instructions should be made and circulated among the staff. Manufacturer should impart the training for correct usage, maintenance and carrying out modifications to incorporate changes.
 - v) Guidelines for Annual Maintenance Contracts (AMCs) need to be framed & issued.
 - vi) Outsourcing at bigger stations should be planned and commercial gains should be quantified by calling expression of interest from interested parties.

Necessary action for items 1(iii) & (iv) and 2(ii), (iii), (iv) & (v) may please be taken by RDSO and action plan indicating time frame for each item be drawn and submitted to the Board for timely implementation.

Directives for newly created category of A1 class stations are under consideration and will be issued separately.

- Sd. -
(Sanjay Dungrakoti)
Director/Tele

**WLL EXCHANGE & VOIP COMMUNICATION
ON OFC FOR DISASTER MANAGEMENT
ON JHANSI DIVISION**

by :
D. K. SINHA,
Sr. DSTE / JHS

Introduction:

Chapter VIII of the Corporate Safety Plan deals with Modernisation of Disaster Management and as per High Level Disaster Management Committee, WLL Exchange has to be kept in all ART's for providing communication to all concerned at accident site. Accordingly it has now been planned over Indian railways to provide one WLL exchange in each of the ART. Arrangement in the system is such that all the 52 mobile handsets provided with WLL exchange can talk to each other.

given to officers & supervisors who have to move throughout the length & breadth of the site. The exchange can also have analog & digital subscriber cards for connecting landline phone at various points/camps at site. A digital key telephone (DKT) has also been connected to exchange for minor programming & for receiving/diverting/connecting calls.

DECT Handsets Handsets can be planned with following numbering scheme:

WLL exchange:

This is an ISDN exchange having capability of interface with DECT card. A DECT card, which can support up to 8 DECT base units, has been provided in this exchange. Each base unit can be connected to a port of DECT card through a single pair of wires. The maximum length of cable from DECT card to base can be 1000 meters. Each base has got a radius of coverage of 300 meters. Each base can support a maximum of 4 simultaneous conversations between DECT handsets. However, it can support up to 24 simultaneous conversations if it is connected to DECT card on 6 pair of wires. The base stations can be installed at site as per the requirement as shown in Fig.1 & Fig.2. DECT handsets can be

RLY MOBILE WLL PHONE NUMBERS			
HELP LINE	400	TRD	427
DRM	401	TRD	428
ADRM	402	TRD	429
CMS	403	ELECT	430
Sr DSO	404	ELECT	431
Sr DME	405	ELECT	432
DSE Co	406	ELECT	433
DSE/DEN	407	COMML	434
Sr DSTE	408	COMML	435
Sr DCM/DCM	409	ENGG	436
Sr DMO	410	ENGG	437
TCI ART	411	ENGG	438
DSC RPF	412	ENGG	439
RPF	413	ENGG	440
RPF	414	ENGG	441
RPF	415	ENGG	442
RPF	416	ENGG	443

RLY MOBILE WLL PHONE NUMBERS			
C&W	417	S&T	444
C&W	418	S&T	445
C&W	419	S&T	446
C&W	420	S&T	447
C&W	421	SPARE	448
C&W	422	SPARE	449
C&W	423	SPARE	450
C&W	424	SPARE	460
C&W	425	SPARE	461
TRD	426		
Dial number & press :-	☎		
For cancellation :-	☎		
Dial 9 press	☎	Then 1 then Rly No	
Dial 9 press	☎	Then 2 then BSNL No	

Miscellaneous as per site requirement - (448, 449, 450, 460, 461)

The allotted numbers can be pasted on the handsets and have also been saved in the *address book* of handsets for easy recall.

Junction Lines An 8-line CO card has also been installed in the exchange for outside connectivity. Out of 8 CO lines:

(i) 4 CO lines have been programmed as under:

81	for connecting Rly. Extension, if available
82	for connecting another Rly./BSNL extension, if available
83	for connecting BSNL extension, if available
84	Satellite phone

(ii) Remaining 4 CO lines have been programmed in a hunting group with code as 9 for connecting to VOIP-FXS card.

PRI Card PRI card has been provided in the exchange for 2 MB connectivity if available.

How to use Available Rly./BSNL/Satellite phones are to be connected to CO lines of exchange as per scheme above (Fig1). Any handset/landline user can dial Rly. or BSNL numbers by dialing the access code & then the desired number. He can also ask, by dialing 400, operator to get the desired number. Operator on getting such request can access the desired number through codes & can transfer the call to handset/landline.

Any incoming call on these Rly./BSNL/Satellite phones is automatically directed to DKT, where it can be received & transferred to the desired handset/landline phone.

Advantages

(i) No need to come to communication booth for making a call. Call can be made directly from handset or by booking to operator.

(ii) In case of incoming call, operator can transfer the call to user. No need to call the user asking him to come down to communication booth & unnecessary holding the line.

(iii) No need to discontinue the on hand job for making & receiving calls as these calls are now directly available on handsets at the work place itself.

(iv) Optimum utilization of communication as there is no need to hold the line as explained in (ii) above.

(v) Duplex intercommunication from handset to handset avoiding simplex communication of walkie-talkie.

VoIP

In OFC territory, a 64 KBPS channel can be extended from control office to the nearest station. From there, the same can be extended on a pair of wires, terminated on EC sockets, to the site using combination of G703/V35 modems. **Eight voice channels can be developed on this channel using VoIP & using Hub, a PC/Laptop can also be connected in LAN with RAILNET.** The entire connection arrangement is shown in Fig.3 & routing digit/numbering scheme in Fig.4.

The VoIP box at control office has been provided with one 4-port FXS card & one 4-port FXO card. The VoIP box at site will have two 4-port FXS cards. Four phones/FAX are connected to FXS ports of control office VoIP box & at the other end also 4 phones/FAX can be connected on FXS ports of VoIP box of site. Using this, four point-to-point phones/FAX can be provided from control office to the site. The numbers of phones/FAX in control office are 201, 202, 203 & 204 whereas at site these will be 301, 302, 303 & 304. The dialing from 201-204 to 301-304 & vice-versa is direct without any access code. These can be used for direct communication between these two points for voice & FAX communication.

Two Rly. lines in hunting group having number 100 & two BSNL lines having number xxxx/yyyy are connected to FXO ports, having access codes 1 & 2 respectively, of control office VoIP box. At site, 4 ports of other FXS card, having access code 0, are connected to 4 CO lines (access code 9) of DECT WLL exchange. All these four lines are in a hunt group.

The procedure for various combination of communication is as under:

(i) **From Railway network to Site subscriber/Operator** Any person on Railway network can reach to operator/subscriber at site by dialling 100 (gets RBT), wait for VoIP dial tone, then dial 0 (access code to get WLL exchange), wait for WLL exchange beep tone & then dial the desired subscriber's/operator's number.

(ii) **From Railway network to Site camp office** One can also reach to site from railway network by dialling 100 (gets RBT), wait for VoIP dial tone, then dial 301-304.

(iii) **From Railway network to Control office** Any person on Railway network can control office by dialling 100 (gets RBT), wait for VoIP dial tone, then dial 201-204.

(iv) **From BSNL network to Site subscriber/Operator** Any person on BSNL network can reach to operator/subscriber at site by dialling xxxx/yyyy (gets RBT), wait for VoIP dial tone, then dial 0 (access code to get WLL exchange), wait for WLL exchange beep tone & then dial the desired subscriber's/operator's number.

(v) **From BSNL network to Site camp office** One can also reach to site from BSNL network by dialling xxxx/yyyy (gets RBT), wait for VoIP dial tone, then dial 301-304.

(vi) **From BSNL network to Control office** Any person on Railway network can control office by dialling xxxx/yyyy (gets RBT), wait for VoIP dial tone, then dial 201-204.

Note: In all above cases, all the digits after 100/xxxx/yyyy are to be necessarily dialed in tone mode. For pulse subscribers, it is compulsory that they press * button on their phone after dialling 100/xxxx/yyyy.

(vii) From control office to Site camp office From 201-204, one can directly dial 301-304 without any access code.

(viii) From control office to Site subscriber From 201-204, dial 0 (access code for WLL exchange), wait for beep tone & then dial operator/subscriber number.

(ix) From Site camp office to Control office From 301-304, one can directly dial 201-204 without any access code.

(x) From Site camp office to Railway network From 301-304, dial 1 (access code for railway line), wait for railway dial tone & then dial the desired number.

(xi) From Site camp office to BSNL network From 301-304, dial 2 (access

code for BSNL line), wait for BSNL dial tone & then dial the desired number.

(xii) From Site subscriber/Operator to Control office From handset dial 9 (access code to enter into VoIP) & then 201-204.

(xiii) From Site subscriber/Operator to Railway network From handset dial 9 (access code to enter into VoIP), wait for VoIP dial tone, dial 1 (access code for railway line), wait for railway dial tone & then the desired railway number.

(xiv) From Site subscriber/Operator to BSNL network From handset dial 9 (access code to enter into VoIP), wait for VoIP dial tone, dial 2 (access code for BSNL line), wait for BSNL dial tone & then the desired BSNL number.

Routing digit chart

	Control Office	Railway Network	BSNL Network	Site Camp Office	Handsets/ Operator
Control Office	•	1-Rly. No.	2-BSNL No.	Direct	0-(400 to 450)+ 460 to 461
Railway Network	100-(201 to 204)	•	•	100-(301 to 304)	100-0-(400 to 450) + 460-461.
BSNL Network	xxxx/yyyy-(201 to 204)	•	•	xxxx/yyyy-(301 to 304)	xxxx/yyyy-0-(400 to 450)+ 460 to 461.
Site Camp Office	Direct	1-Rly. No.	2-BSNL No.	•	0-(400 to 450)+ 460 to 461
Handsets/ Operator	9-(201 to 204)	9-1-Rly. No.	9-2-BSNL No.	9-(301 to 304)	•

Note: wherever '-' is shown, it means 'wait for dial tone'

Fig.4 Routing digit & Numbering Scheme

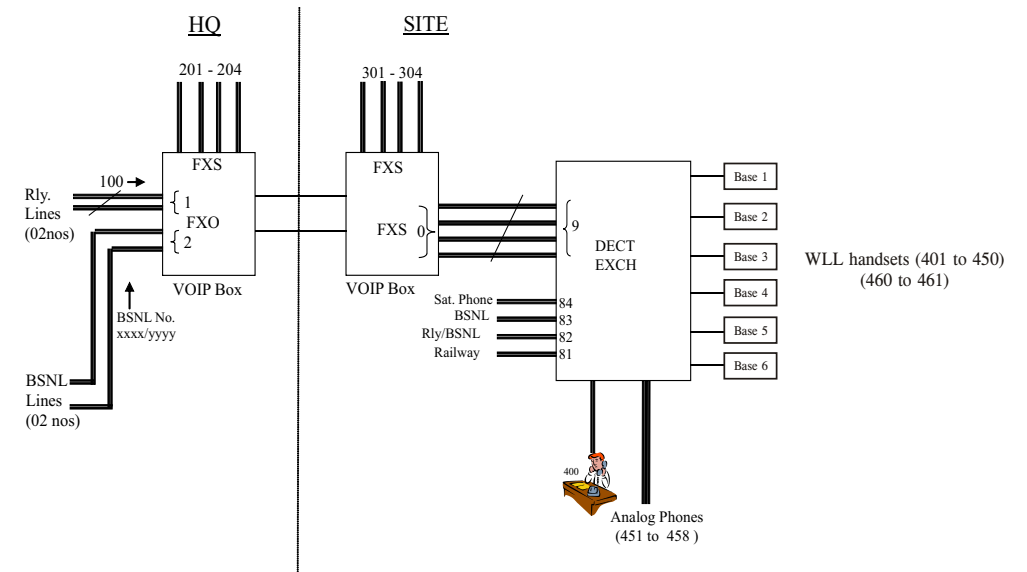


Fig.1 Arrangement of Base Units for longer site

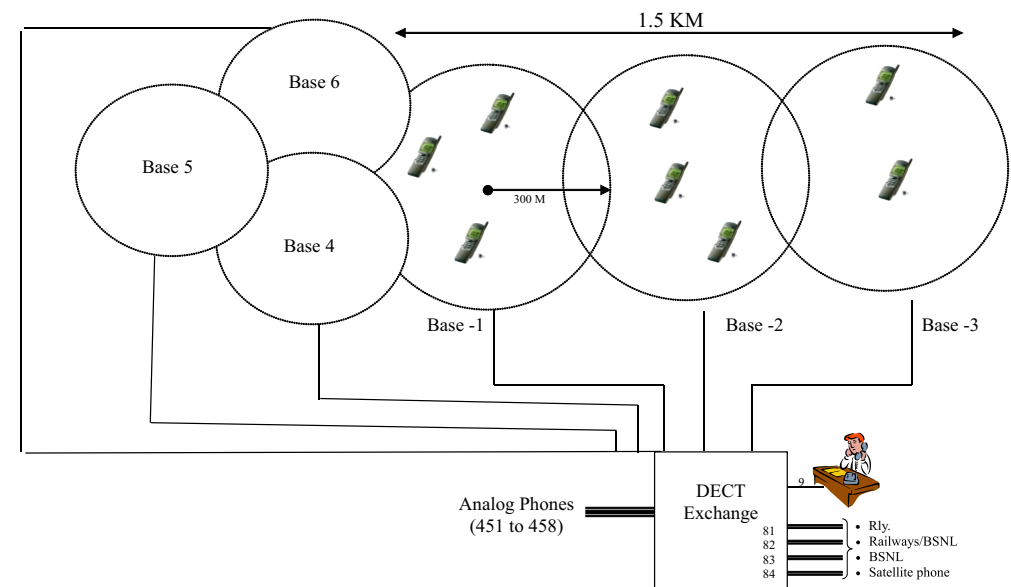


Fig.2 Arrangement of Base Units for wider site

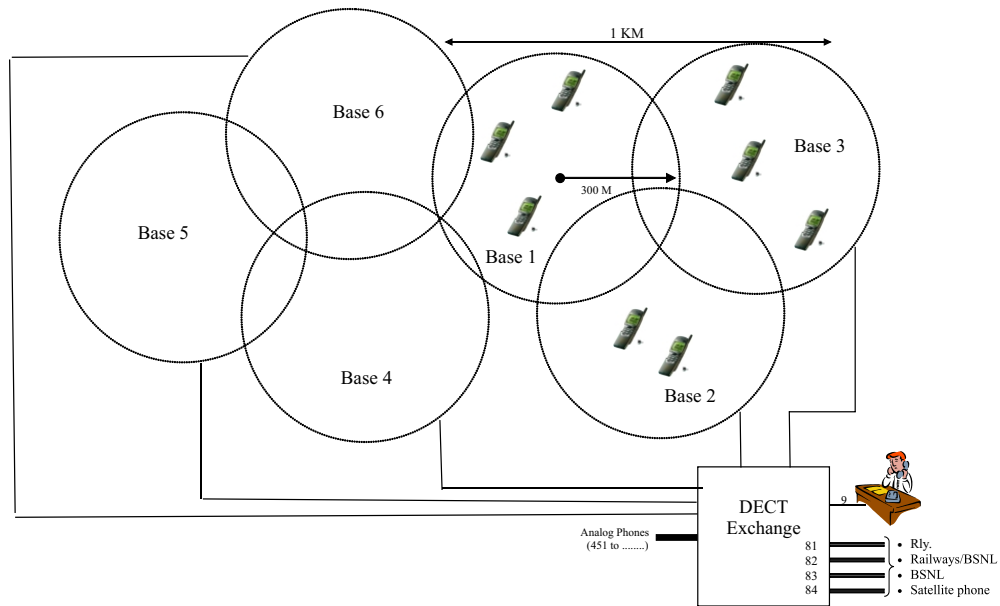
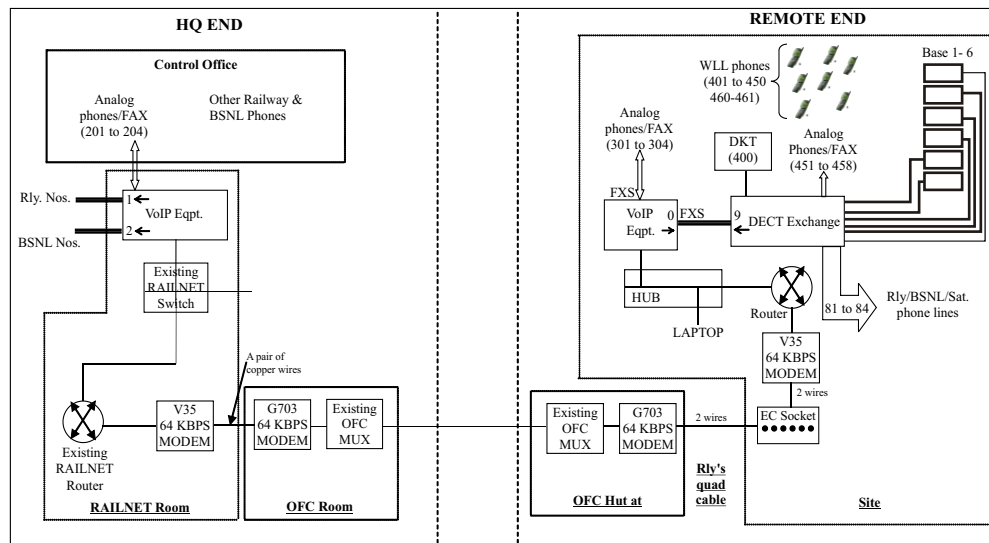


Fig.3 SCHEME OF INTERCONNECTION



CENTRINO: BUILT FOR WIRELESS

Compiled by:
LOKESH VISHNOI,
DyCSO/S&T/SECR

With Intel® Centrino™ mobile technology, you're ready to connect to the Internet or a corporate network without wires or an add-on adapter card, thanks to integrated wireless LAN (WLAN) capability. WLAN uses radio waves to wirelessly connect computers to each other, to the Internet or to wired networks. And this means it's easier for you to stay connected.

With Intel Centrino mobile technology's integrated WLAN capability, you can access information to respond to a tough client question on the spot. Or collaborate instantly with team members across the globe. Or update documents on the fly and send revisions to the home office. It's the kind of experience you expect from your primary workspace. But now you can have it on the go, when you're away from home your small business or the office.

Intel Centrino mobile technology has single band 802.11b or dual band 802.11a/b Wi-Fi CERTIFIED WLAN capability, which enables wireless connectivity from Wi-Fi CERTIFIED WLAN networks including thousands of hotspots worldwide. An increasingly popular way to work and play on the go, hotspots provide WLAN service, for free or for a fee, from a wide variety of public meeting areas, including coffee shops, airport lounges and convention centers. In support of Intel Centrino mobile technology, Intel is actively working with various industry leaders to help accelerate wireless LAN infrastructure deployment and expand content and service capabilities to deliver a more compelling mobile experience.

Importantly, Intel Centrino mobility technology is built from the ground up for mobility, supporting a wide range of industry wireless-LAN security standards and leading third party solutions now and in the future. Intel is working with VeriSign and Check Point Software Technologies† to enhance and optimize its products to provide a better wireless security solution. In addition, Intel and Cisco are working together to extend Intel Centrino mobile technology's security capabilities to support leading wireless security protocols (LEAP and CKIP).

Intel Wireless networks are rapidly becoming more popular because of their capabilities and affordable cost. Since they don't require cables and you can set up multiple access points for broad coverage, you can use the devices anywhere in the home, maybe even in your backyard. With a wireless home network, you can also connect to the Web with a Wi-Fi-enabled notebook PC or other WLAN device in any room of the house (provided you have coverage). Use this step-by-step guide to plan and set up your wireless LAN home network.

1. A Few Basics: A wireless network communicates over the airwaves using small, low-powered radio transceivers. Several wireless standards are available, including 802.11a, 802.11b, and 802.11g. The most common and prevalent wireless networking products are compatible with the 802.11b standard, working in the 2.4 GHz band with a data-transfer rate of up to 11Mbps. Click here to learn more about these standards or check out the WiFi Alliance's.

2. Get a Mobile Notebook PC: A great way to unwire is with an Intel® Centrino™ mobile technology-based notebook PC, which features single (802.11b) and dual (802.11a/b) band Wi-Fi CERTIFIED wireless LAN capabilities. Intel Centrino mobile technology is built from the ground up for mobility, supporting a wide range of industry wireless LAN security standards and leading third-party solutions.

If you choose to go wireless with an existing notebook, you'll need a wireless PC Card or a notebook with a built-in wireless solution. If you want to wirelessly enable your desktop, you'll need to install a PCI wireless card in the computer, or buy a USB-to-wireless adapter. The latter device simply plugs into the USB port on your computer. All of these devices are readily available wherever notebook and desktop PCs and PC supplies are sold. Or check out Intel's Where to Buy.

3. Install an Access Point: No matter how your notebook is equipped, a key part of any wireless home network is a broadband connection to the house and a wireless LAN access point, or base station, connected to the broadband hub.

Make sure that all wireless components are Wi-Fi CERTIFIED and are using a compatible protocol. For example, if you have a mobile notebook PC with 802.11b wireless LAN capability, you need to choose an access point and router that also have 802.11b. (Note that 802.11g products are compatible with 802.11b products and vice versa.) Keep in mind that the speed of your Internet experience is dependent on your broadband connection and traffic.

Some of today's cable modems and DSL routers include a built-in wireless LAN access point, so you may already be set to go wireless. Depending on the size of your house and the distance you want to be able to move computers within it, you may need more than one wireless access point in your house to ensure quality signal strength.

Another factor to consider is that metal and other dense materials can affect the transmission. Remember: Wi-Fi is based on radio transmissions so you can expect that your Wi-Fi system will have difficulty transmitting from one room to another if the walls in the house are composed of, or heavily reinforced with, metal. You can solve this by placing more access points, which will bolster the radio strength. Additionally, home cordless phones and microwaves may interrupt your wireless signal, and you may not be able to use your wireless PC connection simultaneously with certain cordless phones and microwaves.

Carefully read the manufacturer's instructions that come with your access point. Then connect the broadband router to the access point. Turn on the access point.

4. Connect the First Computer: If you already have a wireless LAN-enabled notebook PC or Laptop, simply initiate the appropriate program or utility software to scan and find the access point. Once your notebook recognizes the network, open a browser and go to a favorite site. If that works, you're connected. If it doesn't work, you may need to enter some information from your Internet Service Provider in the access point's setup program.

Be sure to consult the access point manufacturer's instructions for any troubleshooting.

5. Connect Other Computers and Printer: If you want to connect a desktop computer, you'll need to add a wireless LAN adapter

card: either PCI or USB. Another device you may want to consider is a wireless LAN print server. It allows you to wirelessly connect a printer to your home network and place it in any room (provided there's no obstruction or interference). This means you no longer have to have a printer taking up valuable workspace right beside a PC.

6. Security: As with any wired network, you'll want to ensure that your wireless network is secure. Like your cell phone, a wireless LAN is constantly broadcasting over the airwaves and you'll want to take some simple steps to secure your transmissions. Follow these procedures to maximize the security of your wireless network and to prevent improper use. You can learn more about security overall at Intel Business Computing.

Change the default password. To prevent outsiders from reconfiguring your access point, be sure to change its default password. Many access points come with default passwords such as "admin" or "default," making them an easy target for hackers. You'll also want to change the default Service Set Identifiers (SSIDs) for your access point. Refer to your access point manufacturer's manual for details.

Limit access rights. MAC (Medium Access Control) addressing lets you restrict access to your base station by specifying the unique hardware address of each authorized user. Turn on WEP (Wired Equivalent Privacy). WEP is the underlying security technology provided by the 802.11b standard. To activate it, follow the instructions provided by your access point's manufacturer. WEP encrypts traffic broadcast across a network so that only devices on your network can read it. Although WEP isn't perfect, it does provide basic security. According to the Wi-Fi Alliance, from 60 to 80 percent of all wireless LAN networks operate with WEP not turned on. (Note: A new security enhancement called Wi-Fi Protected Access, or WPA, is available now and increases wireless network security.) Check with your PC and/or access point manufacturer on how to upgrade to WPA for your notebook PC and home network.

Download or purchase a firewall. Firewalls can make your network whether unwired or wired appear invisible to the Internet, and they can block unauthorized and unwanted users from accessing your files and systems. Hardware and software firewall systems monitor and control the flow of data in and out of computers in both wired and wireless enterprise, business and home networks. There are numerous types and levels of firewall technology available on the Internet and at retail stores to meet your specific needs. Many firewall solutions are software only, and many are powerful hardware and software combinations

ROLE OF E-LEARNING IN ENHANCING SAFETY AND IMPROVING EFFICIENCY IN TRAIN OPERATIONS

by:
PIYUSH GUPTA
Director (Sig) / Railway Board

Indian Railway is the world's largest employer, and this work force is involved in the movement of passenger and freight traffic all over the country. Training has been identified as one of the priority area by IR not only to train its new work force but all the existing staff so that the train traffic can move safely, efficiently and productively.

Even Railway Safety Review Committee headed by Justice H.R. Khanna has also emphasized the importance of Training:

"Para 2.9.1. With the increasing sophistication of equipment being inducted into the Railways, it is crucial that the staff assigned to operate and maintain such equipment have the necessary skills."

"Para 2.9.2 IR's recruitment standards did not keep pace with the technological advancements. As a result, today skills of a large number of existing employees need radical upgrading/change which can be accomplished only through special training."

At present there are 10 Signal and Telecommunication training centers on zonal railways primarily to train artisan and technician staff and one centralized Indian Railways Institute of Signal Engineering & Telecommunications (IRISET), which undertakes training programmes for supervisory and officer categories.

Among the main goals in the field of human resource management belong the labour productivity increase, optimization of the number of employees and their corresponding education and training. At present traditional training methodology are largely employed to impart the training. However to train artisan staff who are semi literate and at times illiterate, traditional methods are not quite effective. In the standard training model following problems remained:

- Majority of training inputs are routine and uses conventional black board approach . It was not possible to expect a high level of motivation of employees in this type of training especially when they are commuting to training centers from many outside locations away from there duty place.
- As the employes are not motivated often it results into limited attendance wasting trainee slots.
- All training lessons had been prepared by the same lecturer, which could lead to a subjective concept of the presented topic.
- Training is too general, not always bringing new facts, because the information is made available to the employees through notes, books etc. During the trainings, information

already known to the employee has been repeated.

- Within the standard model explanations dominated and the training on important aspects like many technical aspects ,easy ways to fault finding and practical exercises were missing.
- There was no system ensuring running updates.

e-Learning Systems:

Even on European Railways , a few of the recent rail accidents had highlighted the need for the implementation of effective training and assessment strategies supported by training technology and simulation. In addition to the obvious procurement costs of equipment and associated facilities, the railway should consider the range of less tangible costs that will be incurred on training needs. These result from the need to integrate and coordinate with existing training schedules, facilities, certification and licensing, safety systems, and personnel development policies. On these Railways, the training systems approach is based on the delivery of measurable training outcomes clearly agreed between the trainer and the future user. The use of technology in some parts of the process maximises efficiency and enables performance to be assessed in circumstances which cannot be provided in day to day work, either safely or economically. In fact there in the field of training , industry also makes significant contributions by effective use of technology in the adoption of scenario driven approaches to the development of training and assessment programmes. The development of training scenarios to provide understanding and test performance indicate the level of training

technology and simulation needed to achieve training objectives. Cost benefit analysis may be applied at each stage of the training system to ensure that optimum investment is made in training tools as well as the parallel development of training personnel and other resources. Effective use of **e-learning tools** , animated training capsules, real time simulation techniques etc. is required.

World over e-learning has evolved into a major force in the training process in highly successful corporate organizations. It has been possible through e-learning to train more number of trainees that too irrespective of their family background, educational qualifications etc, than was possible earlier. The system provides full flexibility to choose according to one's requirement, interest, topics, and subject. It provides training anywhere through a computer network and help in collaborating coordinating and assimilating efforts at various points to enhance the e-learning experience.

On Indian Railways it is necessary to create prerequisites for active participation of the employee in the training, which will be more graphic, and oriented to the needs, and abilities of the trainee so that they are motivated to attend training rather make excuses for not attending the training.

In this era of meager resources and high demand on safety, productivity etc., modernization of the training process will lead to long term benefits. Human resource is one of the costliest resources of an organization and it is more than true for Indian Railways. E-enabling the training will ultimately lead to better achievement of out corporate goals. E-learning is a mechanism to enhance the training institute and not to replace it.

E-learning is an homogenous integration of existing training facilities, software content, computer network along-with the course content in electronic form with both audio and video linkages. If the content is good, with both audio and video, the e-learning experience will be good or else it will be an unsuccessful venture even with the best of hardware and software. The speed of network of content delivery also matters. So it is the overall integration and synchronization for software tools, hardware tools, networking and electronic content which ultimately results in enhancing the capability of training institutes. With training being identified one of the most important tool for improving safety on Indian Railways, it is high time that we should e-enable our training process. E-learning comprise not only of e-training but following other aspects also:

- Distance Learning
- On-line evaluation of a trainee
- e-Trouble shooting
- Simulation models for new systems
- Knowledge mines/ warehousing
- Web enabled e-design with suitable authorization and protection features

Some people may suppose that this form of education would not get popular with the employees, because they do not use computers regularly and in general they are not highly educated. However world over on railway systems where also employees were of similar educational level and were not computer literate, once e-training started through e learning tools and when the time of the choice (e-Learning or conventional) was up to the employees, it was found that e-Learning became very popular with the employees and employees in general prefer this way of training. Even on some developed railways, they demanded that Internet access to be able to study at their homes , like Czech Railways, British Railways(DB) and many other railways.

Objectives :

Objective of introducing e-learning modules are as below:-

- Establishing a reliable training network for S&T institutes at least cost and single supervision & updating facilityat IRISSET.
- Facilitate anywhere, anytime, measured, interactive learning.
- Central repository of all signalling and telecommunication content.
- Professionally developed multimedia content enabling better understanding and retention by the use of animation graphics etc.
- Provide requisite skills and infrastructure for trainers to develop course content for incorporation into their routine teaching.
- Facilitate collaborative development across all these institution for course structure, content and schedules.
- Provide instantaneous access to information such as technical circulars, specifications, papers etc. to all trainees.
- Create centralized team for developing content and distributing the same amongst all the institutes for use. For this Learning Management Server and Learning Content Management Servers are to be placed at IRISSET & connected to Zonal Training Centers through Broad band.
- Train trainers in developing rich multimedia content and administering training network.
- Tracking all the users and create a distributed repository of training profiles of S&T employees.
- Adopt standard compliant platform to enable import and use of readily available 'off-the-shelf' e-learning content.
- Online Updating of course content on IR. The work of e-learning is sanctioned under SRSF to line IRISES with all STTCs. The work is likely to be completed by 31.03.08.