

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

No.2006/C&IS/WP 2007-08/AZR/UTS/10      New Delhi, dt 3.9.07

The General Managers  
All Indian Railways

**Sub: Guidelines for design, implementation, management and  
Maintenance of data networks for PRS/UTS**

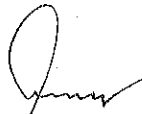
- Ref: (i) Board's letter No.2006/C&IS/WP/2007-08/AZR/UTS/10  
dated 22.5.07  
(ii) Board's letter No.2007/Tele/WP/1/IT dated 12.2.07  
(iii) Board's letter No.2007/Tele/WP/1/IT dated 5.3.07

The issue of execution of IT related works was reviewed in Board's Office. Following directives are issued in this regard in supersession of the earlier directives issued till date in the matter so far as it pertains to networking of datacom equipments: -

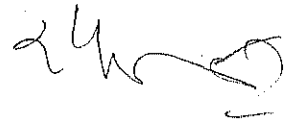
- 1.1 The responsibility for the design of network architecture and specifications of the requisite datacom equipment for IT applications shall continue to vest with CRIS. CRIS will issue a sample design of typical network to be followed by the Railways, which shall be approved by Board (C&IS Dte). Railways would design the network based on this model, which would be sent to Board (C&IS Dte) jointly signed, by CSTE and CCM for approval.
- 1.2 UTS/PRS network shall be a two-tier network with Tier-1 network hubs at Zonal level and Tier-2 network hubs at Divisional HQs and at important locations. The access network below Tier-2 locations network will be on Railway's OFC and will utilize the existing STM-1 to derive E1 for IT applications. Existing equipment room and power supply should also be used to the extent possible to keep the cost down. Where Railway's OFC is however, not available, network should be planned on channel hired from other service providers. A ring should be formed by using Railway's OFC or by fiber swapping/hiring channels as the case may be to provide redundancy.

- 1.3 Integrated network should be planned in such a way so that backbone cost for future applications at the same location is minimum. Network should cater for all IT applications planned to be rolled out on unified UTS/PRS Network in future.
- 1.4 Route, media & service provider diversity may be provided as needed with a view to ensure that up time of communication links is better than 99.95% in addition to the first level protection mentioned in para-1.2 above. Since local leads are normally the weakest link, diversity for local leads should also be provided as considered necessary.
- 1.5 Agreement entered for channel hiring from all service providers should include the clause of SLA of 99.95% and penalty clause in case contracted SLA is less.
2. All ongoing works sanctioned for 2006-07 will continue to progress according to the design of network architecture and equipment specifications given by CRIS. (SER & ECoR who are following different design architecture should also conform to the network architecture proposed by CRIS).
3. Detailed estimates for works sanctioned on 2007-08 should be made and sanctioned on the basis of SDH network. However, instructions regarding execution of network will follow.
4. Subject to Para 1.1 above, all works connected with provision, procurement, installation and commissioning of the access network below Tier-1 including procurement of datacom equipment, channel hiring and maintenance should be the responsibility of CSTE's on Zonal Railways.
5. The responsibility for installation, commissioning, operation and maintenance will lie with the same agency who does the procurement of equipment. CRIS shall provide end-to-end system integration support as and when needed. Procurement of equipment shall be done along with three years AMC support service. AMC cost for 4<sup>th</sup> and 5<sup>th</sup> year shall also be taken at the time of procurement to be co-terminus with the codal life of the asset after which it be replaced.

- 6.1 **NMS** architecture is an inherent part of the overall Network design and therefore shall be done by CRIS. Network Management System shall follow a hierarchical architecture. The central NMS, which will monitor the backbone network, will be managed, housed & manned by CRIS. Zonal NMS is to be managed by CCM and the Divisional NMS by CSTE. However, the central NMS should have the facility of drill down to the last unit connected on the network for diagnostic purposes.
- 6.2 Procurement of NMS shall be done by CRIS for all railways.



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