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Maintenance of the international data transmission network for use by the railways

*Maintenance du réseau international de transmission de données à l'usage des chemins de fer
Wartung und Instandhaltung des internationalen Datenübertragungsnetzes für die Eisenbahnen*



UNION INTERNATIONALE DES CHEMINS DE FER
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Summary

The purpose of this leaflet is to provide limits for the commissioning and maintenance of international data transmission within railway data-transmission networks. The preventive maintenance of international data transmission is based on the in-service measurement of erroneous data blocks.

1 - General

1.1 - International data transmission network

1.1.1 - The International Railway Data Transmission Network (IRDN) consists of a set of International Data Nodes (IDN) forming the network and link layer of the OSI model, a set of International Telecommunication Lines (ITL), together forming the physical layer (generally transport layer), and a Network Management Centre (NMC). The IRDN is a packet-switched network with a variable length of packets (blocks).

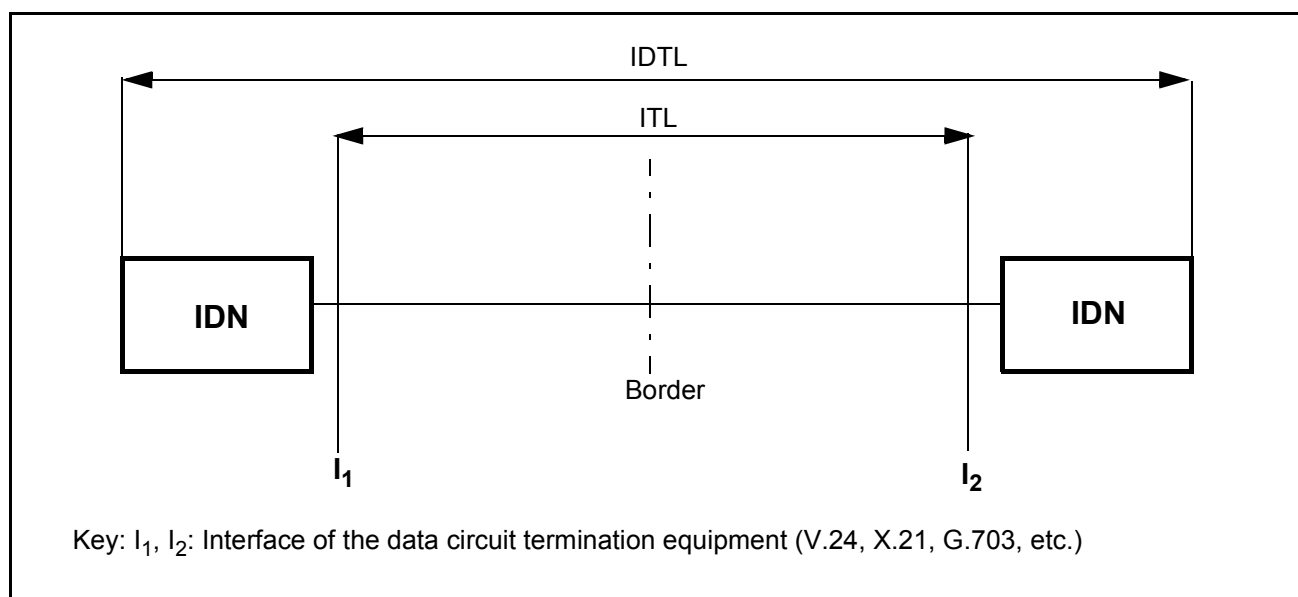
1.1.2 - An international data node is described in *UIC Leaflet 917-1* (see Bibliography - page 16). The IDN need not be dedicated to international data transmission.

1.1.3 - The ITL with two adjacent IDNs establishes an International Data Transmission Line (IDTL).

1.1.4 - An ITL must comply with *UIC Leaflet 753-1*; an IDTL with *UIC Leaflet 917-4* (see Bibliography - page 16).

1.1.5 - The NMC can be subordinated to, or replaced fully with, a National Telecommunication Centre (NTC), if such NTC exists. The distribution of tasks between NMC and/or NTC is a national matter.

1.1.6 - The figure below gives a possible example of an IRDN.



1.2 - Operation of the ITL

1.2.1 - An ITL used for connection between international data nodes crosses one or more borders. Points of lines are defined in *UIC Leaflet 917-4*.

1.2.2 - An ITL can consist of several analogue or digital circuits. These circuits can be built from two or four wire analogue telephone circuits (using modems) or digital paths in transmission equipment of different types (PDH, SDH, ATM, PCM, xDSL) or even as semi-permanent circuits in ISDN (see [List of abbreviations - page 15](#)). The definition of the data circuit termination interface is beyond the scope of this leaflet.

1.2.3 - Data transmission is controlled by the IDN and when a failure causes an interruption in data transmission, the data flow is re-routed over a diversion line and the information is given from the IDNs to the NMCs concerned.

1.3 - Purpose of maintenance

1.3.1 - Maintenance includes all operations necessary to keep the international data transmission network operational with the quality of service parameters laid down in this leaflet. A distinction is made between:

- settings for commissioning (bringing-in-service) according to the values defined in this leaflet;
- preventive (in-service) maintenance based on information of block errors supplied by the IDN and collected in NMC;
- corrective maintenance for finding a defect and for adjustments that must be made after a failure has occurred.

1.3.2 - The organisational procedures for international communication between railway staff engaged in maintenance of IRDN are defined in *UIC Leaflet 917-4*.