



INTERNATIONAL TELECOMMUNICATION UNION

ITU-T

TELECOMMUNICATION
STANDARDIZATION SECTOR
OF ITU

G.981

(01/94)

DIGITAL SECTIONS AND DIGITAL LINE SYSTEMS

PDH OPTICAL LINE SYSTEMS FOR THE LOCAL NETWORK

ITU-T Recommendation G.981

(Previously "CCITT Recommendation")

FOREWORD

The ITU-T (Telecommunication Standardization Sector) is a permanent organ of the International Telecommunication Union (ITU). The ITU-T is responsible for studying technical, operating and tariff questions and issuing Recommendations on them with a view to standardizing telecommunications on a worldwide basis.

The World Telecommunication Standardization Conference (WTSC), which meets every four years, establishes the topics for study by the ITU-T Study Groups which, in their turn, produce Recommendations on these topics.

The approval of Recommendations by the Members of the ITU-T is covered by the procedure laid down in WTSC Resolution No. 1 (Helsinki, March 1-12, 1993).

ITU-T Recommendation G.981 was prepared by ITU-T Study Group 15 (1993-1996) and was approved under the WTSC Resolution No. 1 procedure on the 20th of January 1994.

NOTE

In this Recommendation, the expression "Administration" is used for conciseness to indicate both a telecommunication administration and a recognized operating agency.

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Recommendation G.981**PDH OPTICAL LINE SYSTEMS FOR THE LOCAL NETWORK***(Geneva, 1994)***1 General****1.1 Scope**

This Recommendation covers digital line systems for the transmission of signals based on the plesiochronous hierarchy on optical fibre cables in the local network and includes systems conveying the following bit rates:

- 1544 kbit/s;
- 2048 kbit/s;
- 34 368 kbit/s.

This Recommendation is applicable together with the relevant Recommendations on digital sections for the respective applications. Those include:

- G.962 for ISDN primary rate access at 2048 kbit/s;
- G.963 for ISDN primary rate access at 1544 kbit/s.

1.2 Objectives

The aim of this Recommendation is to achieve longitudinal compatibility of different digital line systems on elementary cable sections, i.e. the possibility of installing digital line systems, produced by different manufacturers, on the same optical fibre cable.

The systems should:

- be in line with the error performance specified in Recommendations G.821 (local grade) and G.826 and should harmonize with the relevant Recommendations;
- be able to provide access to the majority of customers without the use of regenerators;
- be able to support the relevant maintenance functions;
- comply with various national regulations concerning EMI.

NOTE – The possibility of transverse compatibility is for further study.

1.3 Definitions

For the purpose of this Recommendation, the digital optical line systems can be represented as in Figure 1. The systems have no intermediate regenerators.

1.4 Applications and configurations

The transmission system may be applied for ISDN-primary rate access, leased lines or access to other network capabilities using the bit rates defined in 1.1.

Possible configurations in the access network are shown in Figure 2.