



INTERNATIONAL TELECOMMUNICATION UNION

ITU-T

TELECOMMUNICATION
STANDARDIZATION SECTOR
OF ITU

G.801

DIGITAL NETWORKS

DIGITAL TRANSMISSION MODELS

ITU-T Recommendation G.801

(Extract from the *Blue Book*)

NOTES

1 ITU-T Recommendation G.801 was published in Fascicle III.5 of the *Blue Book*. This file is an extract from the *Blue Book*. While the presentation and layout of the text might be slightly different from the *Blue Book* version, the contents of the file are identical to the *Blue Book* version and copyright conditions remain unchanged (see below).

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

Recommendation G.801

DIGITAL TRANSMISSION MODELS

(Malaga-Torremolinos, 1984)

The CCITT

considering

(a) that digital networks support a wide variety of connections for which digital transmission impairments and other performance parameters need to be controlled;

(b) that, if proper control is not exercised, then under certain circumstances, digital transmission impairments cause unacceptable service degradations;

(c) that various network performance objectives need to be allocated to the elements of a digital network;

(d) that equipment design objectives need to be formulated for individual digital elements;

(e) that networks need to be configured to a level of transmission quality consistent with the needs of different services (voice and non-voice) and in particular of services in the ISDN;

(f) that Administrations need to examine the effect on transmission quality of possible changes of impairment allocation in national networks;

(g) that there is a need to test national rules for prima facie compliance with any impairment criteria which may be recommended by the CCITT for national and international systems,

(h) that guidelines need to be formulated governing the use of certain digital elements (e.g. satellite links, transcoders, digital pads, circuit multiplication devices, etc.),

recommends

that in the study of digital transmission impairments and other performance parameters, the following network models and associated guidelines should be applied.

1 Introduction

Digital transmission network models are hypothetical entities of a defined length and composition for use in the study of digital transmission impairments (e.g. bit errors, jitter and wander, transmission delay, availability, slip, etc.). The diversity of possible network situations requires that individual models can only represent a small portion of typical real entities. However, a limited number of such models (e.g. 2 or 3) together may be sufficiently representative to provide a useful tool upon which studies may be based.

The network models, where applicable, take account of the following features:

a) physically reflect the length of the overall connection with some indication of frequency of occurrence,