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TELEPHONE NETWORK AND ISDN

QUALITY OF SERVICE, NETWORK MANAGEMENT AND TRAFFIC ENGINEERING

CONNECTION ACCESSIBILITY OBJECTIVE FOR THE INTERNATIONAL TELEPHONE SERVICE

ITU-T Recommendation E.845

(Extract from the *Blue Book*)

NOTES

1 ITU-T Recommendation E.845 was published in Fascicle II.3 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.

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**CONNECTION ACCESSIBILITY OBJECTIVE FOR THE
INTERNATIONAL TELEPHONE SERVICE²⁾**

Introduction

This Recommendation is one of a set of closely related Recommendations, comprising Recommendations E.810, E.830, E.845, E.850 and E.855 concerned with the accessibility, retainability and integrity of telephone services.

Preamble

This Recommendation provides an overall end-to-end connection accessibility (availability) objective for *international* switched telephone service.

Connection accessibility is a component of service accessibility as defined in Recommendation E.800.

This Recommendation contains a measure of connection accessibility, an objective, and an allocation of the objective to the national systems and international chain of international connections. The Recommendation also relates the overall end-to-end performance to the reliability and availability of circuits and exchanges in a way useful for network design purposes.

The objective includes the effects of equipment faults and traffic congestion.

The CCITT,

considering

- (a) that connection accessibility is defined in Recommendation E.800;
- (b) that customers rank connection inaccessibility as one of the most annoying of call set-up impairments;
- (c) that an objective for connection accessibility which takes into account customer opinion about the call set-up phase is consistent with other Recommendations which have recommended an objective for service retainability based, in part, on customer opinion;
- (d) that connection accessibility will not be constant over time, even for a particular calling and called line pair. One suitable measure is a long-term average network connection failure probability. (Other suitable measures may also be required.);
- (e) that the overall objective for connection accessibility should be allocable to the national systems and the international chain of the international connection;
- (f) that the objective should take into account the concerns of network planners and system designers, provide useful guidance to both and may be used by Administrations in providing a method for verifying whether or not network performance is acceptable;
- (g) that the overall connection accessibility should be controlled by the accessibility performances of individual exchanges and circuits, and that to obtain this control, the overall connection accessibility must be mathematically linked to the equipment availability and reliability,

recommends

1 Measure of connection accessibility

Connection accessibility shall be measured using the long-term average network connection failure probability, which is the complement of the connection access probability as defined in Recommendation E.800.

The network connection failure probability P_{NCF} can be estimated by using the following formula:

$$P_{NCF} = \frac{Q_N}{N}$$

1) Formerly G.180, in *Red Book*, Fascicle III.1.

2) Some of the terms in this Recommendation, for example, the noun “measure”, are used in the sense of their definition given in Recommendation E.800.