



INTERNATIONAL TELECOMMUNICATION UNION

ITU-T

TELECOMMUNICATION
STANDARDIZATION SECTOR
OF ITU

H.110

LINE TRANSMISSION OF NON-TELEPHONE SIGNALS

HYPOTHETICAL REFERENCE CONNECTIONS FOR VIDEOCONFERENCING USING PRIMARY DIGITAL GROUP TRANSMISSION

ITU-T Recommendation H.110

(Extract from the *Blue Book*)

NOTES

1 ITU-T Recommendation H.110 was published in Fascicle III.6 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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Recommendation H.110

HYPOTHETICAL REFERENCE CONNECTIONS FOR VIDEOCONFERENCING USING PRIMARY DIGITAL GROUP TRANSMISSION

(Malaga-Torremolinos, 1984; amended at Melbourne, 1988)

The CCITT,

considering

- (a) that there is growing evidence of a customer demand for a videoconference service;
- (b) that circuits to meet this demand can, at present, be provided effectively by digital transmission using the primary digital group;
- (c) that switched digital transmission networks known as the Integrated Digital Network (IDN) and Integrated Services Digital Network (ISDN) are under study, but the methods of exploiting these networks for the transmission of primary digital groups will not become clear until the studies have progressed further;
- (d) that the existence of different digital hierarchies and different television standards in different countries complicates the problems of defining hypothetical reference connections;
- (e) that a hypothetical reference connection may be used as a guide to simplify the problems of connections between countries with different television standards and digital hierarchies,

appreciating

that rapid advances are being made in research and development of video coding and bit-rate reduction techniques which may lead to further Recommendations being proposed for hypothetical reference connections for videoconferencing at bit rates which are multiples or sub-multiples of 384 kbit/s during subsequent study periods, so that this may be considered as the first of an evolving series of Recommendations,

noting

- (a) that a hypothetical reference connection is a model in which studies relating to overall performance may be made, thereby allowing comparisons with standards and objectives; on this basis, limits for various impairments can be allocated to the elements of the connection;
- (b) that such a model may be used:
 - by an Administration to examine the effects on transmission quality of changes of impairment allocations in national networks,
 - by the CCITT for studying the allocation of impairments to component parts of international networks,
 - to test national rules for prima facie compliance with any impairment criteria which may be recommended by the CCITT for national systems;
- (c) that hypothetical reference connections are not to be regarded as recommending particular values of impairments allocated to constituent parts of the connection, and they are not intended to be used for the design of transmission systems,

and recognizing

that the planning of the necessary transmission networks for a videoconference service will be facilitated if recommended hypothetical reference connections are available, even if only in a preliminary form without details of all transmission and switching arrangements,