INTERNATIONAL TELECOMMUNICATION UNION

ITU-T

TELECOMMUNICATION
STANDARDIZATION SECTOR
OF ITU

G.101

Appendix I

(05/2000)

SERIES G: TRANSMISSION SYSTEMS AND MEDIA, DIGITAL SYSTEMS AND NETWORKS

International telephone connections and circuits – General definitions

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The transmission plan

Appendix I: A computational model for guidance in transmission planning

ITU-T Recommendation G.101 – Appendix I

(Formerly CCITT Recommendation)

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For further details, please refer to the list of ITU-T Recommendations.

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APPENDIX I

A computational model for guidance in transmission planning

Source

Appendix I to ITU-T Recommendation G.101 was prepared by ITU-T Study Group 12 (1997-2000) and approved under the WTSC Resolution 1 procedure on 18 May 2000.

FOREWORD

The International Telecommunication Union (ITU) is the United Nations specialized agency in the field of telecommunications. The ITU Telecommunication Standardization Sector (ITU-T) is a permanent organ of ITU. 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 turn, produce Recommendations on these topics.

The approval of ITU-T Recommendations is covered by the procedure laid down in WTSC Resolution 1.

In some areas of information technology which fall within ITU-T's purview, the necessary standards are prepared on a collaborative basis with ISO and IEC.

NOTE

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

INTELLECTUAL PROPERTY RIGHTS

ITU draws attention to the possibility that the practice or implementation of this Recommendation may involve the use of a claimed Intellectual Property Right. ITU takes no position concerning the evidence, validity or applicability of claimed Intellectual Property Rights, whether asserted by ITU members or others outside of the Recommendation development process.

As of the date of approval of this Recommendation, ITU had not received notice of intellectual property, protected by patents, which may be required to implement this Recommendation. However, implementors are cautioned that this may not represent the latest information and are therefore strongly urged to consult the TSB patent database.

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The transmission plan

APPENDIX I

A computational model for guidance in transmission planning

This informative appendix previously described the initial version of a computational model, known as the E-model, that has proven useful as a transmission planning tool for assessing the combined effects of variations in several transmission parameters that affect conversational quality of 3.1 kHz handset telephony. This computational model can be used, for example, by transmission planners to help ensure that users will be satisfied with end-to-end transmission performance whilst avoiding over-engineering of networks. It must be emphasized that the primary output from the model is the "Rating Factor" R which can be transformed to other estimates of customer opinion. Such estimates are only made for transmission planning purposes and not for actual customer opinion prediction (for which there is no agreed-upon model recommended by the ITU-T). Accordingly, the E-model is intended to be used to do relative comparisons of transmission conditions.

In 1998, the algorithm for the so-called E-model [as contained in Appendix I (1996)] as the common ITU-T Transmission Rating Model has been published as ITU-T G.107.

In 2000, the algorithm of the E-Model has been enhanced and a revision of ITU-T G.107 has been posted.

This revision provides an enhanced version of the E-Model to better take into account the effects of room noise at the send side, and quantizing distortion.

Therefore, the version of the E-Model as provided in Appendix I (1996) should no longer be used.

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Series H	Audiovisual and multimedia systems
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Series M	TMN and network maintenance: international transmission systems, telephone circuits, telegraphy, facsimile and leased circuits
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Series U	Telegraph switching
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Series X	Data networks and open system communications
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