INTERNATIONAL TELECOMMUNICATION UNION

ITU-T

TELECOMMUNICATION
STANDARDIZATION SECTOR
OF ITU

R.5

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TELEGRAPHY

TELEGRAPH TRANSMISSION

OBSERVATION CONDITIONS RECOMMENDED FOR ROUTINE DISTORTION MEASUREMENTS ON INTERNATIONAL TELEGRAPH CIRCUITS

ITU-T Recommendation R.5

(Previously "CCITT Recommendation")

FOREWORD

The ITU Telecommunication Standardization Sector (ITU-T) is a permanent organ of the International Telecommunication Union. 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, established the topics for study by the ITU-T Study Groups which, in their turn, produce Recommendations on these topics.

ITU-T Recommendation R.5 was revised by the ITU-T Study Group IX (1988-1993) and was approved by the WTSC (Helsinki, March 1-12, 1993).

NOTES

1 As a consequence of a reform process within the International Telecommunication Union (ITU), the CCITT ceased to exist as of 28 February 1993. In its place, the ITU Telecommunication Standardization Sector (ITU-T) was created as of 1 March 1993. Similarly, in this reform process, the CCIR and the IFRB have been replaced by the Radiocommunication Sector.

In order not to delay publication of this Recommendation, no change has been made in the text to references containing the acronyms "CCITT, CCIR or IFRB" or their associated entities such as Plenary Assembly, Secretariat, etc. Future editions of this Recommendation will contain the proper terminology related to the new ITU structure.

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

Recommendation R.5

OBSERVATION CONDITIONS RECOMMENDED FOR ROUTINE DISTORTION MEASUREMENTS ON INTERNATIONAL TELEGRAPH CIRCUITS

(New Delhi, 1960; amended at Geneva, 1964, Mar del Plata, 1968, Geneva, 1980 and Helsinki, 1993)

The CCITT,

considering

(a) Recommendations R.51, R.51 *bis*, R.54 and R.55;

(b) that, for the measurement of the degree of distortion of signals on an international telegraph circuit, it is necessary to specify the best condition of observation in order to be sure that the measurement obtained gives a good indication of what the performance of the circuit will be during periods of normal traffic;

(c) that the observation conditions should be such that their duration or their complexity does not unduly increase the load on the maintenance services;

(d) that certain Administrations, to determine these conditions, have carried out statistical measurements of the degree of individual start-stop distortion using distortion analyzers, the results of which seem to be in agreement,

unanimously declares the view

(1) that the tests should be carried out at nominal modulation rates of 50, 75, 100 and 200 bauds, depending on the type of circuits concerned;

(2) that the text transmitted during measurements should be that of Recommendation R.51 *bis*;

(3) that the degree of transmitter distortion of text signals should not exceed 1%;

(4) that, during normal maintenance tests, the duration of the observation should correspond to the examination of at least 800 significant instants, whatever the type of distortion meter used, isochronous or start-stop. At a modulation rate of 50 bauds this results in an observation period of about 30 seconds. At other modulation rates, the observation should last about 20 seconds;

NOTE – The period of observation required to assess properly the performance of tandem connected code-independent time-division multiplexors which are not synchronized to one-another may be much longer than for voice-frequency telegraph equipment. The probability of occurrence of this distortion and the duration of measurement to be assumed will differ in each case and requires further study.

(5) that, when making start-stop measurements using test equipment that does not register the peak early and peak late reading simultaneously, the observation period should be divided into two more or less equal parts: one part during which the significant instants in advance of their theoretical position could be observed and the other part during which the significant instants coming later than their theoretical position could be observed.