



INTERNATIONAL TELECOMMUNICATION UNION

ITU-T

TELECOMMUNICATION
STANDARDIZATION SECTOR
OF ITU

R.44

TELEGRAPHY

TELEGRAPH TRANSMISSION

**6-UNIT SYNCHRONOUS TIME-DIVISION
2-3-CHANNEL MULTIPLEX TELEGRAPH
SYSTEM FOR USE OVER FMVFT CHANNELS
SPACED AT 120 Hz FOR CONNECTION TO
STANDARDIZED TELEPRINTER NETWORKS**

ITU-T Recommendation R.44

(Extract from the *Blue Book*)

NOTES

1 ITU-T Recommendation R.44 was published in Fascicle VII.1 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 R.44

6-UNIT SYNCHRONOUS TIME-DIVISION 2-3-CHANNEL MULTIPLEX TELEGRAPH SYSTEM FOR USE OVER FMVFT CHANNELS SPACED AT 120 Hz FOR CONNECTION TO STANDARDIZED TELEPRINTER NETWORKS

(Mar del Plata, 1968, amended at Melbourne, 1988)

The CCITT,

considering

(a) that synchronous modulation enables a larger number of telegraph channels to be constituted by time-subdivision of a standardized telegraph channel (Recommendation R.35);

(b) that such an increase may be of interest in the case of long submarine cables of the telephone type in view of the resulting economies;

(c) that, in addition to the signals of International Telegraph Alphabet No. 2, transmission of the selection and supervisory signals is essential when incorporating the telegraph channels thus provided into the international switching network;

(d) that it is desirable to allow for the provision of half-rate and quarter-rate channels;

(e) that correct phase-relationship should be established and also maintained automatically;

(f) that systems using 5- and 6-unit codes have been proposed,

unanimously declares the view

that, where the synchronous multiplex system uses a 6-unit binary code, the equipment should be constructed to the following standards (Administrations may of course by mutual agreement use a different system with a 5-unit code such as that described in [1]).

1 Telegraph modulation

1.1 The character period should be 145 5/6 ms.

1.2 The multiplexing should provide for the derivation of either 2 or 3 time-division channels from each voice-frequency telegraph (VFT) channel. The aggregate modulation rate will be 82 2/7 bauds for a 2-channel multiplex and 123 3/7 bauds for a 3-channel multiplex. Generally it is found that VFT systems conforming to Recommendation R.35 will operate satisfactorily at 82 2/7 bauds, but to ensure satisfactory operation at 123 3/7 bauds, it is necessary to employ characteristic distortion compensation (CDC) at the receiving end of the VFT channel.

1.3 The time derived channels shall be element interleaved to form the aggregate signal.

2 Connection to start-stop circuits

2.1 The channel inputs shall be capable of accepting signals from start-stop equipment conforming to Recommendation S.3 [2] (except § 1.6 of S.3). The channel output should be start-stop with a modulation rate of 50 bauds. Standards of performance are given in § 9 below.

3 Alphabet

3.1 Combinations 1 to 31 of the 5-unit International Telegraph Alphabet No. 2 shall each be preceded by an A-condition element, while the continuous start and continuous stop conditions shall utilize the 6-unit combinations AAAAAA and ZZZZZZ respectively. The remaining combination No. 32 shall be preceded by a Z element.

3.2 The alphabet should be as shown in Annex A.