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S.13

TELEGRAPHY

ALPHABETICAL TELEGRAPH TERMINAL EQUIPMENT

USE ON RADIO CIRCUITS OF 7-UNIT SYNCHRONOUS SYSTEMS GIVING ERROR CORRECTION BY AUTOMATIC REPETITION

ITU-T Recommendation S.13

(Extract from the *Blue Book*)

NOTES

1 ITU-T Recommendation S.13 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 S.13

USE ON RADIO CIRCUITS OF 7-UNIT SYNCHRONOUS SYSTEMS GIVING ERROR CORRECTION BY AUTOMATIC REPETITION

(former CCIT Recommendation C.24, Geneva, 1956; amended at New Delhi, 1960,
Geneva, 1964, Mar del Plata, 1968, and Geneva, 1972)

(This Recommendation corresponds to CCIR Recommendation 342-2, New Delhi, 1970)

The CCITT,

considering

(a) that it is essential to be able to interconnect terminal start-stop apparatus employing International Telegraph Alphabet No. 2 by means of radiotelegraph circuits;

(h) that radiotelegraph circuits are required to operate under varying conditions of radio propagation, atmospheric noise and interference, which introduce varying degrees of distortion that may at times exceed the margin of the receiving apparatus;

(c) that, in consequence, the transmission of 5-unit code signals over radio circuits is liable to errors and that such errors are not automatically detectable by the receiving apparatus;

(d) that an effective means of reducing the number of wrongly printed characters is the use of codes permitting the correction of errors by detecting the errors and automatically causing repetition;

(e) that the method using synchronous transmission and automatic repetition (ARQ) is now well proven;

(f) that it is desirable to permit the correct phase to be established automatically on setting up a circuit;

(g) that certain circumstances can occur that result in a loss of the correct phase relationship between a received signal and the receiving apparatus;

(h) that it is desirable to permit the correct phase relationship to be re-established automatically after such a loss, without causing errors;

(i) that to avoid misrouting of traffic, it is essential to prevent phasing to a signal that has been unintentionally inverted;

(j) that in certain cases there is a need to subdivide one or more channels in order to provide a number of services at a proportionately reduced character rate;

(k) that the method of automatically achieving the correct phase relationship between the received signal and the sub-channelling apparatus should be an integral part of the phasing process;

(l) that compatibility with existing equipment designed in accordance with the former Recommendation S.13 (New Delhi, 1960) is a requirement,

unanimously declares the view

(1) that, when the direct use of a 5-unit code on a radio circuit gives an intolerable error rate and there is a return circuit, a 7-unit ARQ system using International Telegraph Alphabet No. 3 should be used;

(2) when automatic phasing of such a system is required, the system described in the Annex should be adopted as a preferred system;

(3) that equipment, designed in accordance with (2) above, should be provided with switching, to permit operation with equipment designed in accordance with Recommendation S.13, New Delhi, 1960;

(4) that the start-stop sections of the receiving and transmitting portions of the radiotelegraph circuit, points X and Y in Figure 1/S.12, should satisfy the conditions of Recommendations S.3 and S.12. In conformity with Recommendation S.12, the aggregate modulation rate for a 2-channel time-division multiplex system will be 96 bauds and for a 4-channel system will be 192 bauds;

(5) that if such systems are used in establishing telex connections, the signalling position should conform to the arrangements shown in Recommendations U. 11 [1], U.20 [2], U.21 [3], U.22 [4].