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TELEGRAPH SWITCHING

SIGNALLING OVER RADIO AND MULTIPLEXED CHANNELS

TELEX AND GENTEX SIGNALLING ON RADIO CHANNELS (SYNCHRONOUS 7-UNIT SYSTEMS AFFORDING ERROR CORRECTION BY AUTOMATIC REPETITION)

ITU-T Recommendation U.20

(Extract from the *Blue Book*)

NOTES

1 ITU-T Recommendation U.20 was published in Fascicle VII.2 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 U.20

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(Geneva, 1956; amended at New Delhi, 1960, Geneva, 1964, Mar del Plata, 1968, and Geneva, 1972)

The CCITT,

considering

(a) that numerous radiotelegraph circuits working in association with 5-unit start-stop apparatus make use of error-correcting synchronous systems having a special error-detecting 7-unit code enabling errors to be corrected by a request for a repetition (ARQ system);

(b) that when they are usable for switched communications, on the radio section these synchronous systems use two combinations α and β , which characterize the permanent conditions of start polarity and stop polarity respectively in the start-stop part of the connection (see Recommendation S.13 [1]);

(c) that the special make-up of these systems is such that a change in the significant condition at the input to the system is not reproduced at the output with a constant delay;

(d) that the experience acquired with telex and gentex switching through these radiotelegraph systems seems sufficient to justify the laying down of general rules specifying signalling arrangements for manual, semi-automatic and automatic working in such international radio channels,

unanimously declares the view

that the signals, enumerated in Recommendation U.1, to be used in setting up international telex and gentex calls over radio channels comprising synchronous systems with error correction by automatic repetition should be characterized as follows:

1 Free line condition

1.1 Successive α combinations on the forward and backward paths.

2 Call

2.1 Transition from combination α to combination β on the forward signalling path. Reception of two consecutive β signals over the forward signalling path shall be interpreted as a calling signal.

2.2 On circuits automatically operated in both directions, reception of a single β signal at the end of the circuit remote from the calling subscriber must cause the outgoing equipment on this circuit at that end to be marked busy immediately. This busy condition must be applied until two α signals are received.

2.3 If the motor of the FRXD (fully automatic reperforator transmitter distributor) or equivalent motor-driven storage device is not already running, it must be started without delay, in order to accept the subsequent selection signals. Furthermore, if the motor of the storage device at the called end is not already working, it must be started.

2.4 It is desirable that, in the busy hour at least, the starting of the motor of the storage device should not be dependent on the calling signal for each call. One simple method of meeting this requirement is to provide a device that delays the switching off of the motor until about 5 minutes after the call has been cleared.

3 Call-confirmation signal

3.1 Transition from combination α to combination β on the backward signalling path. The reception of two consecutive β signals over the backward signalling path shall be interpreted as a call-confirmation signal.