



INTERNATIONAL TELECOMMUNICATION UNION

ITU-T

TELECOMMUNICATION
STANDARDIZATION SECTOR
OF ITU

X.51

PUBLIC DATA NETWORKS

TRANSMISSION, SIGNALLING AND SWITCHING

FUNDAMENTAL PARAMETERS OF A MULTIPLEXING SCHEME FOR THE INTERNATIONAL INTERFACE BETWEEN SYNCHRONOUS DATA NETWORKS USING 10-bit ENVELOPE STRUCTURE

ITU-T Recommendation X.51

(Extract from the *Blue Book*)

NOTES

- 1 ITU-T Recommendation X.51 was published in Fascicle VIII.3 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 X.51

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(Geneva, 1976; amended at Malaga-Torremolinos, 1984)

The CCITT,

considering

(a) that Recommendation X.50 sets out the fundamental parameters for a multiplexing scheme for the interworking of networks where at least one makes use of the 8-bit envelope structure or of the four 8-bit envelopes grouping,

(b) that there is a requirement for a multiplexing scheme for the interworking between two networks where both use 10-bit envelope structure,

unanimously declares the view

that the following fundamental parameters shall be used between networks using the 10-bit envelope structure.

1 Gross bit rate

For transmission on the international link the multiplexed bit stream shall have a gross bit rate of 64 kbit/s. The fundamental multiplex structure shall have a gross bit rate of 60 kbit/s and shall utilize padding techniques for transmission on the 64 kbit/s international bearer.

2 Fundamental multiplex

For the fundamental multiplexing of information bearer channels, the following applies:

2.1 The signal elements of each individual channel shall be assembled in 10-bit envelopes, in which bit 1 is a status bit (see Note), bit 2 is an envelope alignment bit, and bits 3-10 are information bits, as in Figure 1/X.51.

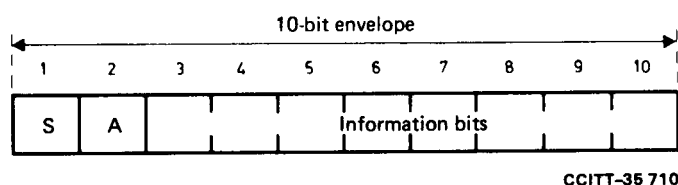


FIGURE 1/X.51

The addition of the status and the envelope alignment bits results in a 25% increase in bit rate, so that the bearer channel rates are:

- 12.0 kbit/s for the 9.6-kbit/s data signalling rate;
- 6.0 kbit/s for the 4.8-kbit/s data signalling rate;
- 3.0 kbit/s for the 2.4-kbit/s data signalling rate;
- 750 bit/s for the 600-bit/s data signalling rate.

Note - A status bit S bit is associated with each envelope and in conjunction with the associated 8-bit data byte conveys call control information (cf. Recommendations X.21, X.21 bis, X.60, X.71 and X.50).