INTERNATIONAL TELECOMMUNICATION UNION

ITU-T Q.275

TELECOMMUNICATION
STANDARDIZATION SECTOR
OF ITU

SPECIFICATIONS OF SIGNALLING SYSTEM No. 6

SIGNALLING LINK

DATA CHANNEL FAILURE DETECTION

ITU-T Recommendation Q.275

(Extract from the *Blue Book*)

NOTES

1 ITU-T Recommendation Q.275 was published in Fascicle VI.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.

6.5 DATA CHANNEL FAILURE DETECTION

6.5.1 *General*

Detection of data channel failure is required to supplement the eight-bit cyclic code. In case of unsatisfactory data transmission conditions a data channel failure indication should be given to the terminal for use in the error control equipment (see Recommendation Q.277, § 6.7.2).

6.5.2 *Detector requirements*

6.5.2.1 *Data channel failure detector - analogue version*

In this case the data channel failure detector is known as the *data carrier failure detector.*

a) The data carrier failure detector is required to indicate failure when transmission becomes unsatisfactory because of decreased carrier level. A failure should be indicated when the received carrier is below the minimum sensitivity of the modem used, and should indicate no failure when the level is above -23 dBm0.

b) The detector is required to detect the loss of carrier even though the decrease in carrier power may be accompanied by an increase in noise power. If a signal guard technique is used to distinguish carrier power from noise power, the received spectrum from 300 Hz to 500 Hz should be used to detect the amount of noise power.

c) The indication of failure or re-establishment of carrier should have a nominal delay of 5 ms with limits of 4 ms minimum and 8 ms maximum.

6.5.2.2 *Data channel failure detector - digital version*

In the case of both the 1544 kbit/s and the 2048 kbit/s primary multiplexes, the data channel failure detector is known as the *loss of frame alignment detector*.

a) The loss of frame alignment detector is required to indicate when the digital multiplex has lost frame alignment.

b) The indication of loss or re-establishment of frame alignment should have a mean delay of 2 ms or less after the PCM equipment has detected the loss or re-establishment of frame alignment.

6.5.3 *Interface*

In the case of the 1544 kbit/s primary multiplex, data-channel failure is electrically indicated by inhibiting the 4 kHz receive clock.

In the case of the 2048 kbit/s primary multiplex, loss of frame alignment is electrically indicated by inhibiting the 8 kHz receive clock or by an indication transmitted from the primary multiplex over a separate connection.