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TERMINALS FOR TELEMATIC SERVICES

CLASSIFICATION OF FACSIMILE TERMINALS FOR DOCUMENT TRANSMISSION OVER THE PUBLIC NETWORKS

ITU-T Recommendation T.0

(Previously “CCITT Recommendation”)

FOREWORD

The ITU-T (Telecommunication Standardization Sector) is a permanent organ of the International Telecommunication Union (ITU). The ITU-T is responsible for studying technical, operating and tariff questions and issuing Recommendations on them with a view to standardizing telecommunications on a worldwide basis.

The World Telecommunication Standardization Conference (WTSC), which meets every four years, establishes the topics for study by the ITU-T Study Groups which, in their turn, produce Recommendations on these topics.

The approval of Recommendations by the Members of the ITU-T is covered by the procedure laid down in WTSC Resolution No. 1 (Helsinki, March 1-12, 1993).

ITU-T Recommendation T.0, was revised by ITU-T Study Group 8 (1993-1996) and was approved under the WTSC Resolution No. 1 procedure on the 3rd of July 1996.

NOTE

In this Recommendation, the expression "Administration" is used for conciseness to indicate both a telecommunication administration and a recognized operating agency.

SUMMARY

Recommendations T.2 and T.3 define Group 1 and Group 2 facsimile terminals respectively; such stand-alone terminals have not been manufactured for many years and Group 3 facsimile terminals are the only type being used on the GSTN.

In recognition of this market situation, Study Group 8 has agreed to delete references to Groups 1 and 2 in Recommendations T.4 and T.30.

In order to be consistent and to minimize the possibility of any confusion, it is proposed that this Recommendation be amended to delete references to Group 1 and Group 2 terminals and also to use consistent terminology.

Recommendation T.0

CLASSIFICATION OF FACSIMILE TERMINALS FOR DOCUMENT TRANSMISSION OVER THE PUBLIC NETWORKS

(Geneva, 1976; amended at Geneva, 1980;
Malaga-Torremolinos, 1984, Melbourne, 1988 and in 1996)

1 For document facsimile transmission by international communications carried on the public networks there is a need for providing sufficient operating speeds to meet users' requirements.

2 Users' requirements may best be served at the present time by classifying the following four basic categories of document facsimile terminal.

2.1 Terminals for use over the public telephone network

Group 3 (see Note)

A terminal which incorporates means for reducing the redundant information in the document signal prior to the modulation process and which can achieve a transmission time less than 1 minute for a typical typescript document of ISO A4 size via a telephone-type circuit. The terminal may incorporate bandwidth compression of the line signal.

NOTE – This terminal has been standardized in Recommendation T.4.

2.2 Terminals for use over the public data networks

Group 4 (see Note)

A terminal which incorporates means for reducing the redundant information in the document signal prior to transmission mainly via Public Data Networks (PDNs). The apparatus will utilize procedures applicable to the PDN and will assure an essentially error-free reception of the document.

NOTE – This terminal has been standardized in Recommendations T.6, T.503, T.521 and T.563.

3 The users will choose among these terminals, in accordance with their needs and the facilities afforded by the connection and the network.

4 Procedures for Group 3 document facsimile transmission in the public switched telephone network should be in accordance with Recommendation T.30.

5 Procedures for Group 4 document facsimile transmission should be in accordance with Recommendations T.62, T.62 *bis*, T.70 and T.90.

6 Annex A contains definitions for terms used in the T-Series Recommendations applicable to facsimile terminals.

Annex A

Definitions for terms used in the T-Series Recommendations applicable to facsimile terminals

(This annex forms an integral part of this Recommendation)

The following definitions apply to Recommendations T.1 and T.4:

A.1 **dead sector** (Recommendation T.1): In drum terminals, that portion of the drum surface the scanning time of which cannot be used for picture signal transmission.

A.2 **drum factor** (Recommendation T.1): In drum terminals, the ratio of the usable scanning length of the drum to its diameter.

A.3 **facsimile** (Series T): The process of scanning a document (page), converting the image scanned into electrical signals for transmission to a remote receiver and the conversion of the received signals to produce a copy of the image originally scanned.

A.4 **factor of cooperation** (Recommendation T.1): The product of the total scanning line length and the scanning density.

A.5 **flat-bed transmitter** (Recommendation T.1): A terminal in which the original document is placed flat and scanned line by line.

A.6 **index of cooperation** (Recommendation T.1): Quotient of the factor of cooperation divided by the quantity π. In the case of a drum terminal, the index of cooperation is also equal to the product of the drum diameter and the scanning density.

A.7 **judder, longitudinal** (Recommendation T.1): Effect due to the irregular rotation of the drum or helix causing, on the reproduced picture, slight waviness or breaks in lines that are regular on the original document.

A.8 **judder, transverse** (Recommendation T.1): Effect due to irregularity of the scanning pitch resulting in concurrent overlapping and underlapping in the reproduced picture.

A.9 **nominal black (white)** (Recommendation T.1): Level or frequency of the signal corresponding to a pure black (white).

A.10 **pel** (Series T): A contraction of "picture element".

A.11 **phasing** (Recommendation T.1): At the receiver, ensuring the exact coincidence of the midpoint of the scanning field, with the corresponding point at the transmitter so as to ensure the correct positioning of the picture on the recording medium.

A.12 **phasing signal** (Recommendation T.1): A signal sent by the transmitter for phasing purposes.

NOTE – Phasing is known as "phase white (black)" if the phasing signal is a black (white) signal of which a short interruption corresponding to the white (black) is sent during the lost time.

A.13 **phototelegraphy** (Recommendation T.1): Method of reception of facsimile telegraphy which is chiefly intended for the reproduction of graded tonal densities and in which a photographic process is used at the receiver.

A.14 **picture element** (Recommendation T.4):

a) *at transmission:*

The part of the area of the original document which coincides with the scanning spot at a given instant and which is of one intensity only, with no distinction of the details that may be included.

b) *at reception:*

The area of the finest detail that can be effectively reproduced on the recording medium.

A.15 **reproduction ratio** (Recommendation T.1): The ratio of the linear dimensions of the reproduced document to the corresponding dimensions of the original document.

A.16 **resolution** (Series T): A measure of the capability for delineating picture detail. In Group 3 and Group 4 facsimile transmission resolution is expressed as picture elements or pels per mm (horizontal resolution) and lines per mm (vertical resolution).

A.17 **scanning density** (Recommendation T.1): Number of scanning pitches per unit length.

A.18 **scanning line** (Recommendation T.1): The area explored by the scanning spot in one sweep from one side to the other of the scanning field.

A.19 **scanning pitch** (Recommendation T.1): The distance between the corresponding edges of two consecutive scanning lines.

A.20 **skew** (Recommendation T.4): A defect in reproduction in which lines that should be at right-angles to the scanning direction are inclined to it, owing to a difference between the scanning speeds at transmission and reception.

A.21 **synchronization** (Recommendation T.1): The establishment of equal scanning line frequencies at the transmitter and receiver.