INTERNATIONAL TELECOMMUNICATION UNION

CCITT

THE INTERNATIONAL
TELEGRAPH AND TELEPHONE
CONSULTATIVE COMMITTEE

F.200

(08/92)

TELEMATIC, DATA TRANSMISSION, ISDN BROADBAND, UPT AND TELECONFERENCE SERVICES:

OPERATIONS AND QUALITY OF SERVICE

TELETEX SERVICE

Recommendation F.200

FOREWORD

The CCITT (the International Telegraph and Telephone Consultative Committee) is a permanent organ of the International Telecommunication Union (ITU). CCITT 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 Plenary Assembly of CCITT which meets every four years, establishes the topics for study and approves Recommendations prepared by its Study Groups. The approval of Recommendations by the members of CCITT between Plenary Assemblies is covered by the procedure laid down in CCITT Resolution No. 2 (Melbourne, 1988).

Recommendation F.200 was revised by Study Group I and was approved under the Resolution No. 2 procedure on the 4th of August 1992.

CCITT NOTES

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

2) A list of abbreviations used in this Recommendation can be found in Annex C.

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Recommendation F.200

TELETEX SERVICE

(revised 1992)

1 Introduction

1.1 *Scope*

1.1.1 This Recommendation defines the general rules to be followed in the automatic international teletex service.

These rules apply also for the optional modes of operation described in § 1.2.3.3, but when required, some other additional service rules relevant for service uniquely for these modes are described in other F.200-series Recommendations (see below).

Relevant Teletex service Recommendations are:

- F.200: Teletex service.
- F.201: Interworking between teletex service and telex service – General principles.
- F.202: Interworking between the telex service and the teletex service – General procedures and operational requirements for the international interconnection of telex/teletex conversion facilities.
- F.203: Network based storage for the teletex service.
- F.220: Service requirements unique to the processable mode number one (PM1) used within the teletex service.
- F.230: Service requirements unique to the mixed mode (MM) used within the teletex service.

1.1.2 Teletex is an international service, offered by Administrations, enabling subscribers to exchange correspondence on an automatic memory-to-memory basis via telecommunication networks.

This correspondence may be:

- either, non-structured documents so-called “basic documents”:
  - the sender’s intention is to send these documents only in order to be presented to the user at the receiving side. The ability to exchange basic teletex documents is mandatory within the teletex service;
  - the element of correspondence between people is the page-formatted document with the page, as the smallest unit treated as an entity. No restrictions shall exist for generation of the text and/or the positioning of text within the printable area on a page;
- or, structured documents (optional in the teletex service). They are:
  - “mixed mode documents”: the intention is to send documents containing characters and graphics which can be mixed on the same page, mainly in order to print them out at the receiving side;
  - “processable mode documents”: the intention is to send documents which can be reprocessed at the receiving side. Three processables modes are defined: PM1, PM26 and PM36.

Optionally, the teletex service allows also the exchange of files of any kind using the file transfer communication mode called “transparent mode” (see Recommendation T.565).

1.1.3 It is not the intention of the service to compete with or to duplicate public data services, although the use of teletex for transmission of data (e.g., to question a data bank) may be a possible by-product.

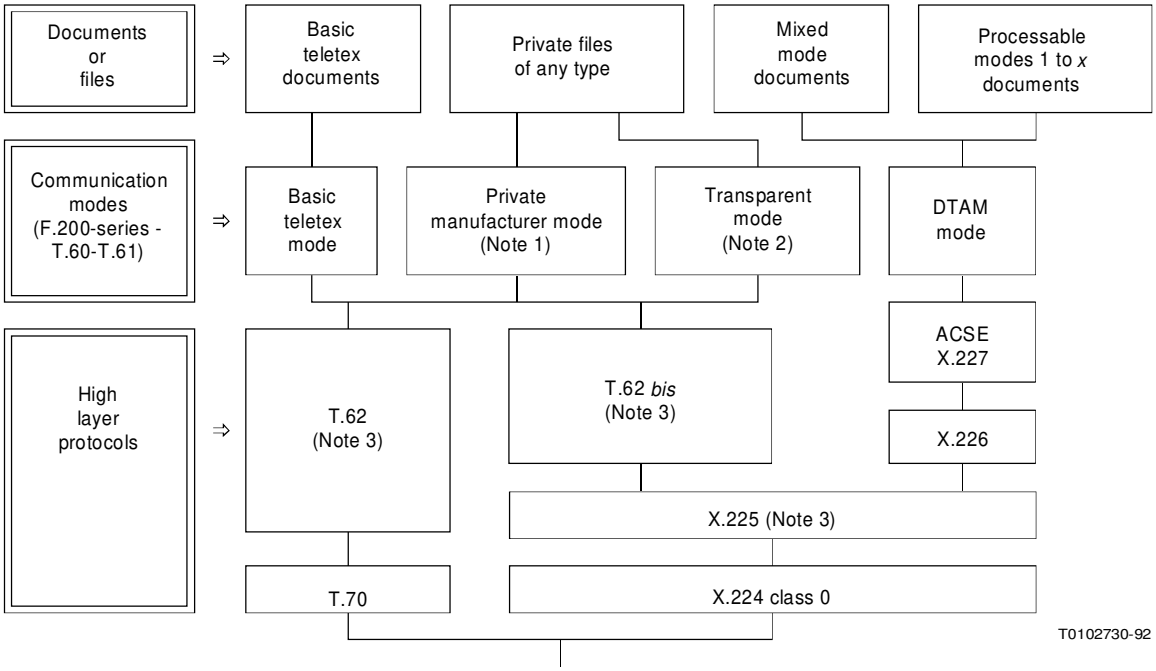
1.1.4 Questions of an essentially technical nature concerning the teletex service are dealt with by other Recommendations.

1.1.5 Throughout this Recommendation the term "teletex equipment" is used addressing user's equipment independently, whether this equipment is a dedicated teletex terminal or a terminal or system with added teletex capabilities. The term "terminal equipment" is used to identify the endpoint of responsibility of the teletex service.

1.1.6 Complex systems private automatic branch exchange [(PABX), local network, etc.] may participate in the teletex service.

1.1.7 *High layers teletex architecture*

This general model is given in order to summarize all the facilities provided by the teletex service to the user. More technical features are presented in the teletex equipment specification.



ACSE Association control service element
DTAM Document transfer and manipulation

Note 1 – Not defined in CCITT.

Note 2 – This mode allows exchange of documents or files generated by any application software (including any standardized documents) preferably using the transparent mode.

Note 3 – Recommendation T.62 bis together with Recommendation X.225 meet the requirements of Recommendation T.62.

1.2 *Service definitions*

1.2.1 *General*

1.2.1.1 The **basic teletex service** provides communication between equipment, which is used for the preparation, editing and printing of correspondence.

1.2.1.2 It is an essential characteristic of the teletex service that it provides a basic level of compatibility between all equipment participating in the service.

1.2.2 *Basic requirements*

1.2.2.1 The requirements of the basic teletex service are as follows:

a) A basic level of compatibility is provided between any two teletex terminal equipments both nationally and internationally so that they may communicate formatted documents composed of character-coded information to each other. This is to be achieved by requiring that terminals comply with Recommendations T.60, T.61, T.62, T.70 and T.90 when connected to integrated services digital network (ISDN).

b) It is for each Administration to decide on the networks(s) on which the teletex service will be carried. There shall be no restriction on the type of network to be used.

c) Real-time connection between teletex equipment operating at different speeds is required for the duration of the call. The information on the successful transmission should be given by the receiving equipment to the sending equipment within the call.

d) It should be possible to extend the teletex service to any number of countries.

e) The graphic character repertoire of any office machine keyboard that satisfies the provisions of Recommendation T.61 and that is acceptable to the national Administration for use within the teletex service should be permitted as a source.

f) In order to enable private use of applications, such as for example, encryption, there should be no technical limitation on the bit sequence of the subscribers' information that may be transmitted.

g) It is desirable, but not mandatory, that the local mode operation is not disturbed by incoming calls under normal operating conditions.

h) A received teletex document can be printed or displayed otherwise as decided by the recipient and equipment characteristics. If a basic document is printed, the receiving subscriber should be furnished with a document that is identical with that produced by the sending subscriber as far as its contents, layout and format are concerned.

i) It is intended that the service should require no changes to the Recommendations for existing services or networks.

j) It is desirable, but not mandatory, that the teletex service provides the ability to intercommunicate in both directions with the telex service by means of conversion facilities (refer to Recommendations F.201, F.202 and T.390).

k) The teletex service allows for intercommunication with the Interpersonal Messaging (IPM) service using a public teletex access unit (refer to Recommendation F.422).

l) Facilities for providing a permanent copy (not necessarily on paper, but possibly only in memory) of every message (documents and files) shall exist at every teletex terminal equipment.

m) The man/machine interface in the teletex service should be as simple as possible in accordance with the normal use of office equipment.

1.2.3 *Standardized options*

1.2.3.1 It is recognized that some subscribers may need to use teletex terminal equipment to communicate nationally and internationally using the service features which are not included in the basic teletex service. A number of CCITT standardized options are, therefore, defined. However, the provision of any option in a service could lead to some degree of incompatibility and the number of standardized options should be restricted, as shown below, to those features for which a clear international need can be foreseen.

The sending terminal equipment shall ensure the transmission of messages (documents or files) using only those options that have been indicated as being available at the receiving equipment.

1.2.3.2 The standardized options should provide means for:

a) different character spacings (initially 12 and 15 pitch);

b) different metric values for line spacing (initially 3.175 mm and 5 mm);

c) selection of different graphic rendition of any selected portion of the text;

d) indication that special stationery should be used;

e) use of a wide range of character repertoires other than the teletex basic character repertoires (both national and application orientated);

f) specification of increased printable areas for paper sizes normally used for office correspondence; e.g., ISO A4, A4L and North American paper size;

g) escape into national and private options;

h) use of Kanji character repertoires (JIS[1)] C6226) and associated spacing (6-pitch) and page formats (ISO A4, B5, B4);

i) specification of paper sizes other than ISO A4 or A4L as well as the associated printable areas.

Note 1 – Administrations are encouraged to ensure that standardized and nationally defined options are available and used in such a way as to minimize the need for the introduction of private use options.

Note 2 – There is a need for further study as the service develops. Changes may be required to this list.

1.2.3.3 In addition to the basic mode of operation, a number of possible other modes may be offered, which may also be able to exchange the basic mode between them:

a) *Use of the mixed mode (MM) of operation*

This mode provides the user, in addition to the basic features of the basic teletex service, with means for transferring documents containing graphical information encoded using techniques other than those defined for the basic teletex service, e.g., teletex/telefax mixed mode of operation (see Recommendation F.230).

b) *Use of the interactive mode (IM) of operation*

The interactive mode allows teletex terminal equipment (terminals or fully automatic systems) to communicate in real time with each other (for further study).

c) *Use of the processable modes of operation (PM1 to PMx)*

The processable modes of operation provides the user with means of interchanging documents containing sufficient information to reprocess them efficiently (see Recommendation F.220).

Note – Only PM1 is considered in Recommendation F.220. Other PMx are for further study.

d) *Network based storage*

In addition network based store-and-forward and (at the discretion of the recipient) store-and-retrieve facilities may become available (see Recommendation F.203).

e) *Transparent mode (TM) of operation*

This mode provides the user with the ability to transmit files of any kind, plus informations describing how to handle these files (see Recommendation T.565).

1.3 *Definition of terms used in the teletex service*

1.3.1 The terms listed in Annex B contain the definitions given as they are used in these provisions.

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1) JIS: Japanese Industrial Standard.

1.4 Availability of the service

1.4.1 In principle the teletex service offered by Administrations shall normally operate on a fully automatic basis and be open continuously.

1.5 *Operational aspects of service telecommunications*

Operational aspects of service telecommunications may be found in Recommendation F.17.

2 Network requirements

2.1 It is the responsibility of Administrations to decide on which network(s) the teletex service is to be provided. The term teletex network, as used in this Recommendation, shall be taken to mean a network on which teletex service is provided.

2.2 Considering that the teletex service may be operated on the following networks:

a) teletex in a circuit switched public data network (CSPDN);

b) teletex in a packet switched public data network (PSPDN);

c) teletex in a public switched telephone network (PSTN);

d) teletex in an integrated services digital network (ISDN),

the interworking between teletex terminal equipment supported on any network is possible in real time (end-to-end connection) through network gateways.

2.3 The procedures for call set-up to teletex equipment connected to different networks shall be as similar as possible.

2.4 The international connection shall use international data transmission facilities. Exceptionally, bilateral agreements to use other means may be made where necessary.

2.5 Connection between PSTNs may use international telephone circuits.

2.6 In the case of international interworking between teletex equipment connected to dissimilar networks, Recommendation X.300 shall apply.

2.7 International routes shall be capable of supporting user data rates of at least 2400 bits/s (see applicable Recommendations).

Note – It is recognized that national implementations of the teletex service on various types of networks may involve national operation at different information throughput rates. It should be noted that in these cases, buffering and/or flow control may be required (see Recommendations T.60, T.62 and T.70).

2.8 International routes between ISDNs for the teletex service shall be capable of supporting user data rates of 64 kbit/s.

2.9 Teletex terminal equipment connection to ISDN is described in Recommendation T.60.

2.10 Recommendations concerning ISDN may be found in the I-Series. Recommendation I.241.2 is relevant for the teletex service.

3 Numbering plan

3.1 Considering that it is the responsibility of each Administration to decide on the network(s) to be used for the teletex service in accordance with the options noted in § 2, the teletex numbering plan must accommodate these options.

3.2 The teletex numbering plan is based on the individual numbering plans of each of these networks, i.e., Recommendation X.121 for public data networks (PDN) and Recommendation E.164 for PSTNs and for ISDN.

3.3 Each of these numbering plans provides for international calls between similar networks.

3.4 The numbering plan for PDNs (Recommendation X.121) provides for calls to PSTNs and ISDNs.

3.5 As the numbering plan for PSTNs does not provide for calls to PDNs, those Administrations that use the PSTN nationally for the teletex service must provide for call set-up procedures to give access to the teletex service on a PDN in other countries.

3.6 The numbering plan is based on the Recommendation E.164 for ISDN. Administrations are requested to consider the numbering plan due to their individual implementation of the ISDN within the existing networks. Further study is required.

3.7 Numbering and addressing in intercommunication between the teletex service and the IPM service are in accordance with rules as laid down in Recommendation F.422.

4 Character repertoire

4.1 The basic teletex character repertoire of graphic characters and control functions for the international teletex service and the coding of these characters for transmission between teletex equipment are found in Recommendation T.61.

4.2 Other recognized national and/or application-oriented character repertoires can be used. These repertoires should only be used after registration by the CCITT and in accordance with the rules given in Recommendation T.61.

4.3 If a graphic symbol that is not in the basic teletex character repertoire is generated, the service cannot guarantee that it will be represented in a recognizable form at the receiving teletex terminal equipment.

5 Operation of the teletex service

5.1 *General*

5.1.1 The teletex service in each country and the international interconnection between countries or networks, shall use automatic switching allowing any teletex user to reach any other teletex user using fully automatic selection.

Specific operating procedures deriving from the connection of the teletex equipment to ISDN should be kept as simple and as user-friendly as possible. In particular, the procedures for call set-up and transmission of messages should be as simple as possible.

5.1.2 It is a requirement to allow the through-connection of a call between a teletex equipment connected to a private automatic branch exchange (or similar systems) and equipment connected to public exchanges used for the teletex service.

5.1.3 Two-way alternate (TWA) communication is a capability of the teletex service, which also includes one-way communication (OWC); the calling subscriber will have full control of the teletex call. Two-way simultaneous (TWS) communication is not regarded as a basic requirement for the teletex service.

5.1.4 Intercommunication with other services such as telefax, interpersonal messaging, telex and videotex is envisaged and is (to be) defined in a separate Recommendation.

5.2 *Call phases*

5.2.1 The operations for each call may be divided into the following three phases:

a) *preparation:*

- preparation of the information in local mode;
- loading of the information into memory;

b) *transmission (in principle, automatic):*

- call establishment;
- pre-information phase (see Note 1);
- information transfer from memory-to-memory (see Note 2);
- post information phase (see Note 1);
- call clearing.

Note 1 – During these parts of the transmission phase the network must be transparent with respect to control procedures.

Note 2 – The information may consist of one or more teletex documents (or files).

c) *output:*

- emptying the memory.

5.2.2 The control procedures as specified in Recommendation T.62 shall be used as end-to-end communication procedures between any equipment participating in the basic teletex service.

Note – Recommendation T.62 *bis* together with Recommendation X.225 must meet the requirements of Recommendation T.62.

5.2.3 The network independent basic transport service for teletex is specified in Recommendation T.70.

5.2.4 The network-dependent control procedures for the teletex service should be those that are defined for that network on which the teletex service is provided (see the relevant Recommendations).

5.2.5 Further information should be available through end-to-end control procedures, which may be used by teletex equipment to identify additional information found in a document. Details of the additional document information are for further study.

5.2.6 Reference to the control procedures to be applied in intercommunication with other services can, in case of differences with the teletex service, be found in the appropriate Recommendation covering these intercommunication cases.

5.3 *Call identification*

5.3.1 *General*

5.3.1.1 The teletex procedures include the exchange of reference information prior to sending any document. This reference information includes identification of the parties to the call as well as the date and time. Also, supplementary reference information is exchanged during a call to allow reference to an individual document or page for error recovery or other purposes.

5.3.1.2 This reference information, taken together, is defined to be printable on a single line called the call identification line. Use of this information is a local decision except in recovering from an interrupted transmission. In the case of automatic linking, the use of this information is for further study.

5.3.2 *Format of the call identification line*

5.3.2.1 The call identification line is composed of four fields as follows:

- field 1: identification of the called terminal;
- field 2: identification of the calling terminal;
- field 3: date and time;
- field 4: supplementary reference information.

5.3.2.2 Presentation of this information must be possible. It may be presented on screen or printed.

When printed, it should be made on the first line on each page of a document or on only one page of a document. The maximum allowable number of printable lines transmitted per page is reduced by one to allow optional printing of the call identification line. The choice of whether and where (only the first page or all pages) this presentation is made, is an operator decision except in certain recovery situations. The relationship between the call identification line (CIL) and the document must be given.

5.3.2.3 Where the transmission of a document is interrupted for any reason, the call identification line and the words "not complete" (or national equivalent) are to be printed or otherwise displayed at the point of interruption as well as at the point at which transmission is resumed.

This is not necessary if automatic linking is used.

5.3.2.4 When the call identification line is presented, the format shown in Figure 1/F.200 is used.

Field 1		Field 2		Field 3		Field 4
Identification of the called terminal	/	Identification of the calling terminal	/	Date and time	/	Supplementary reference information
24 characters	1	24 characters	1	14 characters	1	7 characters
72 characters						

FIGURE 1/F.200

Format of the call identification line

5.3.2.5 Field 1 (identification of the called terminal) contains the identification of the called terminal in the format defined in § 7.5. It is originated in the control procedures by the called terminal equipment.

5.3.2.6 Field 2 (identification of the calling equipment) contains the identification of the calling terminal in the format defined in § 7.5. It is originated in the control procedures by the calling equipment.

5.3.2.7 Field 3 (date and time) contains the date and time reference information showing the year, month, day, hour and minute in the fixed format of 14 characters thus YY-MM-DD-HH:MM. This field is originated in the control procedures by the calling teletex terminal equipment.

On the ISDN the calling equipment shall obtain this information from the network. On the networks which do not supply date and time, the equipment obtains it from an internal clock which may be updated by the network with a monitor document or, if not available, manually.

This time represents the time of the call origination.

5.3.2.8 Field 4 (supplementary reference information) contains a document reference number, a hyphen (coding 2/13) as a separator and a page reference number as defined in Recommendation T.62. This field has a fixed length of seven character positions and is originated in the control procedures by the teletex terminal equipment that is sending the associated documents.

Specific rules for options of the service are defined in relevant Recommendations.

5.3.2.9 Each of the fields of the call identification line is separated by the solidus (/) character (coding 2/15).

5.3.2.10 Only graphic characters of the teletex graphic character repertoire corresponding to those of International Telegraph Alphabet No. 2 are used in the call identification line.

5.3.3 The long term objective for identification of teletex equipment is the application of Recommendation F.351. This requires further study.

5.4 *Special services*

5.4.1 Since the effectiveness of the teletex service will be increased by the availability of special facilities such as those given in the list of examples below, Administrations should give attention to their early introduction:

- network-based storage (see Recommendation F.203);
- abbreviated address calling;
- multi-address calling;
- identification by the network;
- automatic date and time indication;
- indication of charge.

5.4.2 Most of these facilities will be provided by the network on a national basis and it should be borne in mind that the teletex service will be carried by different networks.

5.4.3 They may also be provided from teletex equipment and systems instead of, or as well as, from the network.

5.4.4 The network should not impose any limitations on optional and private use applications.

5.4.5 Intercommunication with other services is covered in separate Recommendations.

5.4.6 For the basic teletex service, no supplementary service is required. ISDN supplementary services may be used where they are appropriate.

5.4.6.1 The following supplementary services should be provided by the network and should be used by the equipment:

i) Multiple Subscriber Number (MSN)

   As the transmission of a dedicated teletex HLC-field in the D-channel is internationally not guaranteed, the application of the supplementary service MSN is highly recommended in the teletex service in order to allow international access to a teletex terminal equipment when other telematic equipment are also connected to the same passive bus;

ii) Direct-Dialling-In (DDI);

iii) Calling Line Identification Presentation;

iv) Connected Line Identification Presentation.

5.4.6.2 *High layer compatibility field*

In order to allow:

- the addressing of a teletex terminal equipment on a passive bus when other telematic equipment are also connected to the same bus and the supplementary service MSN is not used;
- the measurement of the specific teletex traffic by the network;

a dedicated high layer compatibility (HLC) field in the D-channel has to be sent out from the sending teletex equipment and shall be checked during an incoming call by the receiving teletex equipment.

Note – As international transmission does not guarantee any transmission of an HLC field by the network, a teletex terminal equipment should respond to a call if the bearer capability element 64 kbit/s unrestricted is only received and when MSN is used.

5.4.7 The use of national supplementary services is beyond the scope of this Recommendation. As an indication, the following is a list of national supplementary services available in the ISDN:

i) number selection barred;

ii) direct call;

iii) selective direct call;

iv) abbreviated address calling;

v) redirection of calls to a mailbox in the network;

vi) outgoing calls barred;

vii) incoming calls barred;

viii) line hunting with only one terminal identification (TID);

ix) connect when free;

x) call waiting;

xi) centralized distribution in original country of record private;

xii) information;

xiii) centralized private branch exchange facilities;

xiv) credit card calling from public booth;

xv) date and time call duration record for billing;

xvi) directory enquiries;

xvii) fault reporting service;

xviii) freephone service (name and definition of this service need to be changed for teletex);

xix) general desactivation;

xx) general telecommunication information;

xxi) operator access to, and control of, supplementary services;

xxii) out of area lines;

xxiii) priority selection;

xxiv) store and forward;

xxv) differed delivery;

xxvi) itemized bill;

xxvii) traffic statistics;

xxviii) bilateral closed user group;

xxix) bilateral closed user group with outgoing access;

xxx) on-line facilities parameter registration/cancellation;

xxxi) data terminal equipment (DTE) inactive registration/cancellation;

xxxii) RPOA selection.

5.4.8 *Supplementary services for teletex in the packet mode on the ISDN*

5.4.8.1 The provision of packet mode services within the ISDN in accordance with Recommendation X.31 is for further study.

5.4.8.2 Equally the use of international supplementary services for packet mode on international ISDNs is for further study.

6 Quality of Service

6.1 *General*

6.1.1 The teletex service provides any user with the facility to communicate text, or other suitable data, to any other user nationally and internationally. The characteristics of the user equipment, as described in § 7, are of relevance to this matter.

Note 1 – The quality notions for the teletex service do not necessarily apply to all extensions and types of intercommunication. Each case may need its own arrangements to be defined in the appropriate Recommendations.

Note 2 – Additional Quality of Service parameters is a matter of the service provider.

6.1.2 In order to ensure to the user of the teletex service (i.e., to the sender) an adequate Quality of Service, which includes information about the minimum presentation capabilities on the receiving side, the capability of printing a paper copy should be available at least once at each teletex installation. This capability need not necessarily reside at each terminal, but rather could be provided by a central facility.

The printer should have the ability to print as legibly as possible all graphic characters of the basic international teletex character repertoire.

6.2 *teletex equipment*

6.2.1 The Quality of the Service depends, among other things, on the ability of the called equipment to receive calls.

6.2.2 Circuit switched public data networks

6.2.2.1 In order to ensure an adequate grade of service, it should be an objective that the total loss probability of calls to a teletex number should not exceed 0.05.

6.2.2.2 It is understood that the total loss probability (P_E) is composed of the loss probability due to incoming traffic (P_i), outgoing traffic (P_o) and due to temporary memory overload (P_m). P_m should not exceed 0.005 at a traffic intensity of two received messages per busy hour.

6.2.2.3 The values specified above for total loss probability shall apply to basic teletex, not covering the use of processable, interactive and mixed modes of operation. For the purpose of calculation, it is assumed that 20% of the 24-hour total traffic occurs during peak hours. The foregoing values assume a skewed distribution for the character content of normal business correspondence, the distribution having a mean value of 1600 characters (including approximately 400 characters “header” information), a standard deviation of 800 characters and a mode of 1214 characters.

6.2.3 *Packet switched public data networks*

The Quality of Service criteria for these networks is the subject of separate Recommendations.

6.2.4 *Public switched telephone networks*

The Quality of Service criteria for these networks is the subject of separate Recommendations.

6.2.5 *Integrated services digital networks*

The Quality of Service criteria for these networks is the subject of the I-Series Recommendations.

In order to ensure an efficient transfer of documents, maximum transfer times are defined for reference documents in the teletex terminal equipment Recommendation T.60.

6.2.6 The Quality of Service criteria for the above networks is for further study. The network used should in principle not degrade the Quality of Service for teletex.

6.3 *Error protection*

6.3.1 To ensure call integrity, error protection will be provided by teletex control procedures (see Recommendations T.62 and T.70). The error rate on the pre-information, information and post-information phases should not exceed 1 in 10^6.

6.3.2 The control procedures to be applied to this end in intercommunication with other services may be different and are then a matter for the appropriate Recommendations (e.g., Recommendation F.422, for intercommunication between the teletex service and the IPM service).

6.4 *International routes*

6.4.1 The capacity of the routes between countries also has an important impact on the quality of the service. For that reason, the number of circuits provided between any two networks should be such that during peak hours not more than one call in 50 is lost due to a lack of international circuits (see Recommendation T.62).

6.5 *Availability of the service*

6.5.1 The national and international facilities of the teletex service, including the teletex/telex conversion facilities if provided, shall be open continuously.

6.5.2 It is desirable, but not mandatory, that the teletex user equipment for which call numbers are published in the directories, be available to accept calls continuously.

6.5.3 In order to meet § 6.5.2, it is permissible to use a document storage facility which can be network or customer premises based. This facility must appear in every respect to the originator as a teletex equipment (refer to Recommendation F.203).

6.5.4 Two methods of delivery are available from the document storage facility to the called teletex equipment automatic delivery, where the document storage facility delivers messages when the called equipment is available to receive them, and retrieval initiated by the users.

6.6 *Observation of the Quality of Service*

6.6.1 Administrations should make observations to evaluate the quality of the teletex service internally as required and internationally at least as described below.

6.6.2 Administrations should arrange to exchange statistics on the quality of the service at least once a year.

6.6.3 It is desirable that the statistics provide the information contained in Annex A (a first draft only – based on Recommendation F.70).

6.6.4 Observations should be made at such points and in such quantity as to provide a representative sample of at least 200 calls for each period on each route and to take into account the effects of store-and-forward services.

6.6.5 When exchanging statistics, administrations should forward not only statistics of the route concerned but also comparable statistics for either all international teletex traffic or teletex traffic over similar routes.

7 User's teletex equipment

7.1 *General*

7.1.1 In order to support a high Quality of Service, a minimum signalling rate of at least 2.4 kbit/s is recommended. On ISDN the signalling rate of 64 kbit/s is recommended.

Note – This does not exclude the possible connection of 2.4 kbit/s equipment to the ISDN. The signalling rate refers to the information transmission speed as seen by the subscriber's equipment.

7.1.2 The facilities required on equipment connected to the international teletex service are listed in the following.

7.1.3 It is recognized that in certain applications, there may be a need for equipment only having the ability to receive messages. For this type of teletex equipment, all the requirements concerning the receiving part of the teletex equipment, are mandatory.

7.1.4 A teletex equipment should be capable of managing the following documents:

7.1.4.1 *Normal document*

See this Recommendation and Recommendation T.60.

7.1.4.2 *Control document*

Teletex equipment capable to communicate with the telex service via a teletex/telex conversion facility (TTCF) shall be able to create and send a control document. In this case, it is strongly recommended that the application be able to generate automatically the control document in order to avoid human errors in the document creation.

The capability for teletex equipment to create and send control documents [e.g., access to TTCF, message handling system (MHS), data bases, etc.) is optional. Such a teletex equipment may offer two possibilities for control document generating:

– *explicit mode:* provision of means allowing the user to declare that a document is a Control Document;

– *implicit mode:* the control document is automatically generated by the application. This mode should be preferably provided in order to avoid human errors in document creation.

In both modes, the teletex equipment shall be capable of transmitting control documents chained with normal documents.

On the receiving side, a teletex equipment may handle a control document either as a normal document or process it automatically.

7.1.4.3 *Operator document*

Creating and sending operator document is optional.

This kind of document may be used in order to draw the attention of the operator of the receiving equipment.

A teletex equipment shall be able to receive this kind of document. It may be managed in reception as a normal document.

However, it is desirable that:

– the type of document “operator” is presented in the receiving log, when it exists;

– furthermore, a screen message “operator message” in the national language may be presented to the operator as soon as possible or printed out automatically on paper.

7.1.4.4 *Monitor document*

This kind of document may be used in certain countries in order to download information in the teletex equipment (for instance: TID, date and time, etc.).

A teletex equipment shall not generate such a document. It may only be transmitted by Administrations providing the teletex service.

Depending on national specifications, all teletex equipment may be able to receive monitor document in order to download the TID from the network (management centre). Anyway, it is mandatory that the TID can be installed manually by authorized persons.

7.2 *Character repertoire*

7.2.1 Teletex equipment shall have the ability to generate characters of the basic international teletex character repertoire (see Recommendation T.61).

7.2.2 Teletex equipment must be able to receive and store all the characters of the basic teletex character repertoire.

7.2.3 For the basic teletex mode, the equipment should have the ability to represent, as legibly as possible, all graphic characters of the basic international teletex repertoire and to respond to control characters.

7.2.4 No constraints should be made on the type of presentation technology employed.

7.3 *Storage*

7.3.1 *General*

7.3.1.1 The teletex equipment will have memory for storage to be used for both local and communication functions.

7.3.1.2 Memory is required in the receiving equipment so that it is possible to bridge the difference in speeds between reception from line and transfer to secondary storage media. Furthermore, documents being within receiving memory have a specific status. They have not been locally processed.

7.3.2 *Receiving capability*

7.3.2.1 The receiving capability of teletex equipment must be sufficient to meet the Quality of Service as specified in § 6 of this Recommendation.

The minimum capacity of the receiving memory is 32 K octets (sufficient for about eight business letters of 1.5 pages each, of 2000 characters per business letter).

If the memory capacity still available does not exceed 2 K octets, the receiving terminal:

– shall accept the network call so that the appropriate reason is sent to the caller; but

– shall refuse to receive the document.

7.3.2.2 If during a call the ability of the receiving equipment to continue to accept traffic is jeopardized (e.g., memory threshold reached) an indication of this condition will be passed to the sending equipment by the control procedures to permit the orderly termination and resumption of the transmission.

7.3.3 *Memory negotiation*

7.3.3.1 The control procedures may allow for negotiation of storage capability between equipment.

It is pointed out that the negotiation is:

– strongly recommended (but not mandatory) for the basic mode to avoid difficulties when linking the diverse parts of a received document;

– strongly recommended (but not mandatory) for the enhanced modes (mixed mode and processable modes), due to the type of documents to be transmitted;

– strongly recommended (but not mandatory) for the transparent mode, due to the length of the files to be transmitted.

7.3.3.2 Teletex equipment supporting memory negotiation must be able to interwork with equipment not supporting memory negotiation.

7.3.3.3 Requests for memory should be related to the size of the document(s) to be sent (i.e., must not be a value less than that required to send the document(s), should not be a predetermined value, and should not be significantly larger than the document(s) to be sent).

7.3.3.4 Reservations of memory should be related to the size of the memory requested.

7.3.3.5 It is to be determined by the sending teletex equipment whether or not to initiate sending. A document may have to be sent during more than one session, if the receiving equipment responds with not sufficient memory to receive that document.

7.3.4 *Interruption of local mode*

7.3.4.1 Appropriate indicators signifying the presence of a message, as well as receive storage full will be provided to allow for interruption of local mode operation to permit presentation of teletex message(s).

7.3.5 *Received documents deletion*

Deletion of received documents in the receiving memory is always due to the addressee's decision, even if the equipment is capable of automatic printing of the received documents.

The operator's deletion order should be taken into account only if at least one page (printed page or screen display page) of the document to be deleted has been printed or displayed. This capability does not concern files sent through the transparent mode.

7.3.6 *Loss of receiving messages*

Messages should be retained in the receiving memory even in the event of main failure for at least 72 hours.

7.4 *Alarm indicators*

7.4.1 The minimum requirement is a visual or sonorous alarm/indicator presented at least to one operator and to the called party if sub-addressing is used (addressable equipment). It should be active even if another local application is active.

A unique general alarm/indicator may be used to draw the operator's attention. But, in any case, the user should have the ability to identify the following minimum list of alarms/indicators (for instance, by consulting some alarm/indicator menu or other):

7.4.1.1 *Indicators*

A received document, which is not consulted or printed must be indicated as soon as possible either immediately or after the process of a local application has been finished or after the equipment has been started for use.

The following situations shall be indicated:

– received document(s) not consulted or printed;

– receiving memory full or nearly full (less than 4 K octets);

– historic log full or nearly full (if provided).

Note – These indicators generate a visual or sonorous alarm.

7.4.1.2 *Transmission alarms*

– called equipment not available;

– network incident;

– distant receiving memory full;

– negative local called TID checking;

– called equipment disconnection;

– problem with no identified reason.

Note – These transmission alarms should be presented in the historic log when it exists. They are optional as visual or sonorous alarms, but should be presented in a user friendly manner.

7.5 *Teletex equipment identification*

7.5.1 The teletex terminal equipment shall have a unique identification. The different parts of this identification are contiguous as shown in Figure 2/F.200 and no characters other than those specified there are used.

The implementation of TID is only allowed by downloading from the network or installation by licensed persons.

The TID itself must be protected against unauthorized manipulation.

Note – See Recommendation T.60.

Part 1		Part 2	Part 3		Part 4
Network and country code	–	National subscriber number	Additional information	=	Mnemonic abbreviation
Up to 24	1	Up to 12	Up to 4	1	Minimum 3
Maximun 15					
Maximun 24 characteres					

FIGURE 2/F.200

Format of the terminal identification

7.5.2 It is the responsibility of the calling terminal to verify the identification of the called terminal prior to the information transfer phase of the call.

The sender should have the capability to choose, for each communication, between sending his document (or file) with checking (implicit mode) or without checking (explicit mode) the mnemonic literal part of the called equipment TID (Part 4).

7.5.3 Part 1 (Network and country[2)] code) contains the relevant information about the network and country concerned, in accordance with the principles of Recommendation X.121[3)]. For equipment connected to the ISDN, i.e., Part 1 contains 0 followed by 1 to 3 digits country code of Recommendation E.164. (see also Recommendation F.351).

7.5.4 Part 2 (National subscriber number) is the number of the main station or of the private branch exchange. It will be the complete call number including any national area code and terminal selection number [Multiple Subscriber Number MSN)] applicable within the country concerned, by means of which a user can be reached by other subscribers of the same country and on the same network[3)]. This part is separated from Part 1 by hyphen (coding 2/13).

7.5.5 Part 3 (Additional information), when used, begins with a hyphen (coding 2/13) and may contain alphanumeric characters for the code identifier of specific equipment. This possibility can be used for indication of, for example, teletex equipment in a "group number" or when a call is terminated in a document storage facility outside the terminal. In the latter case the value in Part 3 will be returned to the calling terminal.

The indication of special service signals within Part 3 is for further study.

Where alphabetic characters are used, the use of capital or small letters does not affect the meaning. The maximum number of characters in Part 3 is normally four. However, observing the other rules in § 7.5., Part 3 may be enlarged. (This item requires further study.)

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2) Country or geographical area code.

3) These are not necessarily the numbers used in call establishment.

7.5.6 Part 4 (Mnemonic abbreviation) will consist of a minimum of three letters as information for the automatic identification of the connected subscriber. Both capital and small letters can be used and mixed. Only non-accented letters A-Z and a-z must be used (coding 4/1 to 5/10 and 6/1 to 7/10).

The use of capital or small letters does not change the meaning of the mnemonic especially in the telex/teletex intercommunication case (e.g., "ABC" mnemonic has the same meaning as "AbC" mnemonic). The mnemonic abbreviation must always be preceded by the character = (equals sign, coding 3/13).

7.5.7 The parts of the terminal identification are justified to the left and the format is fixed at a length of 24 characters. If the total number of characters in parts 1 to 4 is less than 24, the format must be filled to 24 characters by the addition of space characters (coding 2/0) immediately following Part 4.

7.5.8 The directories issued by Administrations must include at least Parts 1, 2 and 4 of the teletex user's terminal identifications.

7.5.9 In intercommunication with other services as much as possible the identification systems of the separate services should be maintained, with required conversion to be provided by network devices. This point will be covered by each intercommunication case separately via the appropriate Recommendations.

7.6 *Page format for the basic documents*

7.6.1 *Objectives*

7.6.1.1 It is a basic objective of the teletex service to achieve as much similarity as possible to existing operating procedures of office machines. Another objective is to establish a basic, defined mode of operation common to all teletex equipment machines used in the service. Therefore, a minimum basic requirement is defined, and all terminals used in the teletex service shall comply with this minimum basic requirement. This, however, does not preclude the possibility that equipment may by prior agreement between the parties concerned operate in modes different from these basic minimum requirements.

7.6.2 *General*

7.6.2.1 The maximum printable areas for various standard paper sizes are defined in Recommendation T.60 and shall not be exceeded. The range of equipment capabilities is exchanged during session establishment, prior to document transmission. These procedures are defined in Recommendation T.62 along with the default values for these capabilities if this exchange is not explicitly stated.

7.6.2.2 A particular selection from this established range of capabilities is made preceding transmission of each document. Some of these selections may be changed at page boundaries and some may also be changed within a page.

7.6.3 *Basic requirements*

7.6.3.1 As minimum requirements for the specification of the format used, three parameters are required. These parameters are:

a) Paper Orientation;

b) Line Spacing per Line Feed Character;

c) Character Pitch.

Additional parameters may be used to identify optional capabilities for a document.

7.6.3.2 These parameters remain effective until changed. In the absence of an explicit selection these parameters must be automatically restated in every control signal that causes feeding of the next page.

7.6.4 *Paper size and paper orientation*

7.6.4.1 It is a requirement that the teletex service should accommodate the common area of ISO A4 and North American paper format.

7.6.4.2 The standard paper orientation, in the absence of an appropriate control signal, is with the long dimension being vertical as viewed for reading. This orientation is hereafter called the A4 orientation.

7.6.5 *Number of characters per page*

It is a requirement to have a page of undefined size. Theoretically it must be of sufficient size to contain all characters, including control characters when the originating equipment negotiated impartitioned storage of a specific transmission.

7.6.6 *Line spacing per line feed character*

7.6.6.1 This parameter may be changed at any point within a document. In the absence of an operator selection the default value shall be on line-feed (= 4.23 mm). Provision shall be made for selecting 0.5, 1, 1.5 and 2 line-feeds per line-feed character.

7.6.7 *Character pitch (to be selected)*

7.6.7.1 The basic character pitch shall be ten (= 2.54 mm character spacing).

7.6.8 *Positioning of text*

7.6.8.1 One line in the maximum printable area is reserved for the call identification line, see § 5.3 for details.

7.6.8.2 The printable areas include an allowance for printing with an offset of 2.12 mm above the first baseline and 2.12 mm below the last baseline for exponents and indices respectively. Equally, such offsets may be used within the page. Text should not be positioned by such offsets in such a way that characters overlay characters previously printed or displayed.

7.6.8.3 The left margin shall be approximatively 20 mm. Printing left of the defined margin, on per line basis, must be possible by means of operator commands.

7.6.9 *Use of the page format*

7.6.9.1 Table 1/F.200 gives the maxima of lines per page and characters per line that may be used in the basic service with the basic values given below. For intercommunication with telex, see Recommendation F.201.

TABLE 1/F.200

	Vertical format	Horizontal format
Maximum number of text lines	55 a)	38 a)
Maximum number of characters per line	5 + 72 b)	5 + 100 b)

a) The call identification line is not included in this figure.

b) The five characters can be positioned in the left margin by using appropriate control commands (see § 7.6.6).

7.7 *Information to the teletex user*

7.7.1 Sufficient information should be provided to enable an operator to perform a status check to be made of documents in store.

7.7.2 If equipment cannot automatically transmit a document, sufficient information should be given to the operator to be able to:

i) identify the document;

ii) identify the reason for failure.

This information will enable the operator to take appropriate action to resolve this difficulty.

Multi-address calls will be reported on a per address basis.

7.7.3 If the CIL is presented on every page of a document, information will need to be provided to enable an operator to identify interrupted and continued documents received.

7.7.4 In view of the importance of using the same indicators/reason codes for a clear understanding and efficient way for the exchange of information between international operators to overcome service difficulties, it is recommended to adopt the same indicators/reason codes to report service abnormalities detected by the teletex equipment to the international operators.

With this approach, difficulties for the international operator should be minimized to change his working equipment.

7.7.5 In the case of document interruption during transmission, the receiving equipment should automatically notify the interruption to the operator. After the interruption the terminal should generate and/or add a note to the text of the unfinished message specifying the event of the interruption. This note should be in such a way as to easily separate the original text to allow message reconstruction. The message bearing the note should be printed or otherwise displayed showing the event of the interruption.

7.7.6 After an interruption of a document transmission, two resumption procedures should be considered: manual (§ 7.8) and automatic (§ 7.9).

7.7.7 *Logs*

Optionally, two kinds of logs may be managed by the teletex equipment. They are:

– the *historic logs* which provide the operator with a trace of any communication event or any local incident;

– the *transmission logs* which provide the operator with the means to handle documents (or files) waiting for, or in course of, processing.

The provision of these logs is not mandatory in the teletex service. However, it is pointed out that they help a lot for the management of the communication by the operator. The way this information is presented is free and up to the manufacturer.

7.7.8 *Conversion from a wordprocessing native format to a teletex or a telex format*

The sending equipment should control the conformance to Recommendations T.61 and T.60 of any sent teletex or telex documents (not applicable in transparent mode).

It is desirable, but not mandatory, that the equipment warns systematically the operator when some presentation modifications occurred during the conversion in order not to transmit documents containing bad presentation or errors. However, the operator may explicitly accept before the conversion the transmission of the converted document without any presentation control.

The user should have the possibility to display or print locally the document resulting from the conversion of a local wordprocessing native format to a teletex or Telex format before sending it.

It should be possible to prevent the transmission.

7.8 *Manual procedure for interrupted document resumption*

7.8.1 If a message from a teletex equipment could not be received completely, see § 5.3.2.3.

7.8.2 The operator who receives an unfinished document should keep the received part waiting for document completion and, if required, manual linkage.

7.9 *Automatic procedure for interrupted document resumption*

7.9.1 This procedure is optional and should be activated after the receiving teletex equipment has detected that the message concerns the completion of a previously received unfinished document.

7.9.2 After interruption, the sending teletex equipment should keep in its permanent memory the remaining pages of the interrupted document with the receiving equipment to keep the received pages of the unfinished document.

At the resumption of communication, the sending equipment transmits the remaining pages, sending and presenting all the information the receiving terminal needs to link the parts of the interrupted document.

7.9.3 If the receiving teletex equipment is not able to link the interrupted document, it should submit to the operator within the time limit of 12 hours the part of the document received. In this case the operator will follow the manual procedure.

8 Customer information

8.1 *Directories*

8.1.1 A directory of teletex users/call numbers should be provided by each Administration that operates a teletex service. It is a decision of a service provider how the information is published.

8.1.2 As far as possible each administration shall publish a directory of its users at least once a year.

8.1.3 Directories should be A4 size (210 × 297 mm). The printed area should be compatible with the printable area in the basic teletex service.

8.1.4 The directories sent to Administrations shall be set up in Roman letters. The entry for each installation should show the full terminal identification as defined in § 7.5 of this Recommendation.

8.1.5 When directories are written in a language other than the language used in that country, they shall be accompanied by an explanatory note to facilitate the use of such directories. This note shall be drawn up in whatever official language of the Union has been agreed by the Administrations concerned.

8.1.6 Each directory shall include the following:

a) how to use the directory, including lists of any symbols or abbreviations used;

b) an alphabetic list of subscribers with the full terminal identification and business descriptions;

c) a list of the network codes for those networks to which the subscribers have access together with the full access prefixes to those networks;

d) how to use the service;

e) how to establish international calls;

f) how to establish calls to the telex service;

g) how to establish calls to other services with which intercommunication is offered;

h) how to use standardized options;

i) where to go for help, responsible contact addresses for further information and/or maintenance.

8.1.7 Each Administration should supply free of charge to Administrations with which a teletex service exists a sufficient number of copies of its subscriber directories for official use. The number of such copies shall be fixed in advance by bilateral agreement and shall be regarded as applying until a request to change is received; such requests must be made at least three months in advance.

8.1.8 Each Administration should supply, against payment, to Administrations with which a teletex service exists, a number of its directories to be put on sale. The number of copies intended for sale shall be regarded as applying until a request to change it is received; such request must be made at least three months in advance.

8.1.9 Since the updating of directories in new services is a complicated matter Administrations should develop adequate procedures to keep each other informed on a regular basis of the changes to their directories. To that end electronic directory access may be adequate, e.g., using the mechanisms of the interactive mode of operation, whereas a further or alternative mechanism may also be provided by offering national operator services or help desks in such a way that efficient procedures come into existence for obtaining information on foreign teletex services and on their users.

8.1.10 A user wishing to obtain a copy of the directory of another Administration must apply to his own Administration. If an application for its directory is received directly by an Administration from a user of another Administration the request shall be forwarded to the user's own Administration.

8.2 *Operating instructions*

These instructions are being provided nationally taking into account the typical national environment of the teletex service. Possible international aspects are for further study. Administrations are suggested to release user manuals.

8.2.1 *Maintenance*

The subscriber has to ensure the proper maintenance of the private terminal installation.

The service provider grants authorizations to persons or companies to install or maintain private equipment.

Note – See also Recommendation M.21.

8.3 *Printing of teletex numbers*

Standardized printing of teletex numbers (terminal identification) on letterheads is especially valuable for international purposes. It is recommended that this printing contain the word teletex, followed by the complete number in accordance with the terminal identification format of Figure 2/F.200, § 7.5. For example:

Teletex: 933-99384965 = DAIISEDE

9 Tariff principles

These are laid down in separate Recommendations, called the D-Series. For intercommunication with other services different tariff principles may apply.

ANNEX A

(to Recommendation F.200)

Standard format for reporting the results of service observations

Administration (or RPOA) .....

Traffic from ..... a .....

Period of observation:

..... 19 ..... to ..... 19 .....

Period of day:

..... UTC to .....UTC

Route busy hour (outgoing):

..... UTC to ..... UTC

Total calls observed: .....

Subject	Observation traffic to …	Average of all outgoing teletex traffic
Effective calls (% of total call attempts)		
Average chargeable time(s)		
Analysis of ineffective attempts (% stated in each of ineffective attempts) to be:		
– cut-offs during call selection		
– cut-offs during call progress		
– lack of outgoing international circuits		
– lack of circuits in distant national network		
– invalid selection		
– wrong number obtained		
– distant terminal engaged		
– distant terminal not ready		
– mutilations		
– other (specify)		

ANNEX B

(to Recommendation F.200)
(Refers also to the F.200-series Recommendations)

Glossary of terms used in the teletex service

B.1 call phases

F: phases d'une communication

S: fases de la comunicación

The five phases of a teletex call that cover the activities between the calling terminal's call request signal and the disconnection of the terminals are:

a) call set-up;

b) pre-information sequence;

c) information transmission;

d) post-information sequence;

e) call clearing.

B.2 calling terminal

F: terminal demandeur (terminal appelant)

S: terminal llamante

That terminal that initiates the procedures to establish a call.

B.3 called terminal

F: terminal demandé (terminal appelé)

S: terminal llamado

That equipment to which a call is made.

B.4 interactive mode

F: mode interactif

S: modo interactivo; modo dialogado

The exchange in real time of user information during a call or series of calls between calling and called equipment.

B.5 fully automatic operation

F: exploitation automatique

S: explotación automática; operación automática

Operation such that Teletex equipment is able to send documents (prepared in local mode, e.g., by an operator) into receiving storage without the intervention of an operator beyond the initial command and similarly are capable of receiving messages while they are unattended. Operator selection and operator assisted printing are not excluded.

B.6 interworking in the teletex service between different networks

F: interfonctionnement dans le service télétex entre réseaux différents

S: interfuncionamiento de redes diferentes en el servicio teletex

The facility of making calls from a teletex equipment served by one network to a teletex equipment served by a different (and possibly a different type of) network.

B.7 **interworking between teletex and other services**

F: interfonctionnement du service télétex et d'autres services

S: interfuncionamiento del servicio teletex con otros servicios

The facility of sending and receiving information between a teletex equipment and an equipment/user of another service, such as telex, interpersonal messaging, videotex, etc.

B.8 **intercommunication**

F: intercommunication

S: intercomunicación

In the context of teletex, a relationship between services, where one of the services is teletex, enabling the user of the teletex service to communicate with users of other services.

Note – Examples are the intercommunication between the Teletex service and the telex service, the intercommunication between the teletex service and the IPM service.

B.9 **local mode**

F: mode local

S: modo local

That state of an equipment that permits operation of some of its functions independently of any network functions.

B.10 **mixed mode of operation**

F: mode d'exploitation mixte

S: modo mixto de explotación

In the teletex service, the mixed mode of operation provides the user, in addition to the basic features of the teletex service, with means for transferring documents containing encoded graphical information using techniques other than those defined for the basic teletex service.

B.11 **multi-station teletex installation**

F: installation télétex multipostes

S: instalación teletex multiestación

A teletex installation that includes more than one workstation.

B.12 **standardized option**

F: option normalisée

S: opción normalizada

A service feature, defined by CCITT as an addition to the basic requirements, that may optionally be used by subscribers in the international teletex service.

B.13 **storage within the network**

F: stockage dans le réseau

S: almacenamiento dentro de la red

A network-provided facility that will accept and store messages and relay them to the addressee(s), or (in case of store-and-retrieve) will be retrieved by the addressee.

B.14 **teletex call**

F: communication télétex

S: comunicación teletex

The temporary connection (or apparent connection as perceived by the caller) of teletex equipment to other teletex devices for the purpose of exchanging information.

B.15 **teletex page**

F: page télétex

S: página teletex

The smallest unit of text treated as an entity in office correspondence in the teletex service. One A4 (or A4L or North American standard) page or the information that may be presented on it. Paper sizes other than ISO A4 or A4L may be included as standardized options.

B.16 **basic teletex document**

F: document télétex de base

S: documento teletex básico

A sequence of one or more pages intended by the originator to be delivered as a single entity in the original page sequence.

The sender's intention is to send these documents only in order to be presented to the user at the receiving side. The ability to exchange basic teletex documents is mandatory within the teletex service.

The element of correspondence between people is the page-formatted document with the page, as the smallest unit treated as an entity. No restrictions shall exist for generation of the text and/or the positioning of text within the printable area on a page.

B.17 **teletex terminal equipment**

F: tterminal télétex

S: equipo terminal teletex

A device that is capable of transmitting and receiving teletex documents in accordance with the basic requirements of Recommendation T.60.

B.18 **terminal equipment**

F: équipement terminal

S: equipo terminal

"Terminal equipment" is used to identify the endpoint of responsibility of the teletex service.

B.19 **transparent mode**

F: mode transparent

S: modo transparente

In the teletex service, the transparent mode provides the user, in addition to the basic service, with means for transferring files of any type (see Recommendation T.565).

ANNEX C

(to Recommendation F.200)

Alphabetical list of abbreviations used in this Recommendation

ACSE	Association control service element
CIL	Call identification line
CSPDN	Circuit switched public data network
DDI	Direct-dialling-in
DTAM	Document transfer and manipulation
DTE	Data terminating equipment
HLC	High layer compatibility
IM	Interactive mode
IPM	Interpersonal messaging
ISDN	Integrated services digital network
JIS	Japanese industrial standard
MHS	Message handling system
MM	Mixed mode
MSN	Multiple subscriber number
OWC	One-way communication
PABX	Private automatic branch exchange
PDN	Public data network
PM1	Processable mode number one
PSPDN	Packet switched public data network
PSTN	Packet switched telephone network
TID	Terminal identification
TM	Transparent mode
TTCF	Teletex/telex conversion facility
TWA	Two-way alternate
TWS	Two-way simultaneous