

ECMA

EUROPEAN COMPUTER MANUFACTURERS ASSOCIATION

PERMISSION TO CONNECT
PTT REQUIREMENTS
FOR OBTAINING APPROVAL
TO CONNECT APPARATUS
TO THE NETWORK

TR/17

September 1983

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European Computer Manufacturers Association
114 Rue du Rhône – 1204 Geneva (Switzerland)

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BRIEF HISTORY

This ECMA Technical Report TR/17 is a compilation of data made available by the PTTs listed below. It brings into one volume the essential data regarding the requirements for obtaining approval to connect apparatus to the network - "Permission to Connect". It is believed to be up to date as of June 1983. Comments and amendments should be sent to ECMA.

The following PTTs are included:

- B - Belgium
- CH - Switzerland
- D - Germany (FR)
- E - Spain
- F - France
- GB - United Kingdom
- I - Italy
- NL - The Netherlands
- S - Sweden

The information provided in this Report is based on the documentation available to ECMA at the time of publication. Whilst it is believed that this information is reliable, ECMA cannot guarantee its accuracy. Further implementations by PTT Administrations may render obsolete part or all of this information. In case of doubt the official PTT publications prevail.

This Technical Report ECMA TR/17 was adopted by the General Assembly of ECMA on June 16, 1983.

1. Name of Country

BELGIUM

2. PTT AdministrationRégie des Télégraphes et Téléphones (RTT)
Regie van Telegrafie en Telefonie (RTT)3. Address for Enquiries, or for Permission to ConnectFor enquiries:RTT
Department DT
Tour RTT
Boulevard E. Jacqmain 164
B-1000 BRUXELLESFor permission to connect:RTT
Département Transmission de Données
LABO DT
Boulevard de l'Impératrice 17-19
B-1000 BRUXELLES4. Types of Service

See the "EURODATA Foundation Yearbook" for more details.

4.1 On PSTN

The maximum transmission speed authorized until now is 2400 bit/s. As back-up to leased lines, higher speeds may be accepted.

Modems are supplied by the RTT.

4.2 Packet-switched

The packet-switched public Data Communications Service network (DCS) has been operational since December 1982. Node installations should be completed by the end of 1983. Available and planned user facilities are indicated in ECMA TR/

4.3 Circuit-switched digital

Not planned.

4.4 Leased-circuit service

Telegraph, speed band and wideband (national and international) circuits are available, but with possible restrictions according to the type of circuit and localization of the terminations.

4.5 Facsimile

Will start in 1983.

4.6 Teletex

Will start in 1983.

4.7 Videotex

Under development.

5. Connection Requirements

Any private data equipment to be connected to RTT lines or RTT equipment must first be approved by the RTT.

5.1 Directly connected attachments

- a) Safety specification
- b) Attestation of compliance with the Low Voltage Directive for user safety
- c) Mandatory safety approval procedure

} No detail available

d) RTT monopoly:

Modems up to 2400 bit/s (excluding autodialling units) for PSTN and leased circuits.

Modems for leased wideband circuits (48-56 kbit/s and 64 kbit/s) for accessing the DCS network, Telex, Teletex and Facsimile terminals are also supplied by the RTT.

5.2 Indirectly connected attachments

- a) A safety specification exists
- b) An attestation of compliance with the Low Voltage Directive for user safety is required

} For any user-supplied DTE

c) Mandatory safety approval procedures: None, the attestation is sufficient

d) Mandatory performance and protocol validation procedure: Yes, for the Physical Layer, for higher layers: no formal procedure.

5.3 Administrative procedures for approval

See the "EURODATA Foundation Yearbook" (1982), page 22.

5.4 Charges for approval

See the "EURODATA Foundation Yearbook" (1982), page 22.

1. Name of Country

SWITZERLAND

2. PTT Administration

Schweizerische PTT Betriebe
L'Entreprise des PTT Suisse
Azienda della PTT Svizzera

3. Address for Enquiries, or for Permission to Connect

Generaldirektion PTT
Abteilung Fernmeldebau
Sektion Teilnehmeranlagen
Viktoriastrasse 21

CH-3000 BERN 33

Phone: +41 31 62.11.11

4. Types of Service4.1 On PSTN

PTT modems according to V.21, V.22, V.23 and V.26 are available for the switched network. Acoustically coupled modems are permitted, but only with itinerant equipment.

4.2 Packet-switched

The Swiss X.25 network, TELEPAC, is operational.

4.3 Circuit-switched digital

On leased PSTN circuits, modems are available commercially with speeds up to 48 kbit/s. On PCM trunks, the PTT will soon be able to offer 64 kbit/s and higher speed leased circuits for data transmission.

5. Connection Requirements5.1 Directly connected attachments

The PTT normally provides modems for connection to the PSTN; approved private modems may be used to satisfy special requirements. On leased lines customers may use either PTT modems or approved private apparatus.

Mains powered equipment has to be designed according to SEV (Schweizerischer Elektrotechnischer Verein) specifications and PTT requirements document 717.25. Signals to the PTT line are limited to 50 V.

Mains powered equipment has to obtain SEV approval or a certificate from SEV that testing is not required, before a PTT "Permission to Connect" test can take place.

5.2 Indirectly connected attachments

Apparatus has to be designed according to the SEV requirements and PTT requirements document 717.25. An SEV certi-

ificate of approval, or an SEV certificate that testing is not required is required.

Signals to the PTT equipment are limited to 50 V.

For acoustical couplers, the output level frequency spectrum and mechanical construction is tested by the PTT.

5.3 Administrative procedures for approval

An application for approval has to be made to the address stated above.

5.4 Charges for approval

The charges range from SFr. 150.- upwards. They are based on the tariffs of the Swiss Organization of Engineers.

1. Name of Country

BUNDESREPUBLIK DEUTSCHLAND

2. PTT Administration

Deutsche Bundespost (DBP)

3. Address for Enquiries or for Permission to Connect

Zentralamt für Zulassung im Fernmeldewesen
Postfach 3050

D-6600 SAARBRÜCKEN
Germany

4. Types of Service4.1 On PSTN

A range of "DATEL" services is available from 200 bit/s to 4800 bit/s. Only DBP supplied modems may be used.

Acoustically coupled modems (up to 300 bit/s) are permitted, but only with itinerant equipment.

4.2 Packet-switched (DATEX-P)

Direct access at 2400 bit/s, 4800 bit/s, 9600 bit/s and 48000 bit/s packet mode and character mode access 110 - 300 or 1200 bit/s. Access also via telephone network using DBP supplied modems and circuit switched services (telex and DATEX-L).

Network-supplied clock signals are mandatory.

4.3 Circuit-switched digital (DATEX-L)

Service commenced 1968 with 200 bit/s, now available 300, 2400, 4800 and 9600 bit/s.

Network-supplied clock signals are mandatory.

4.4 Leased-circuit services

Approval will no longer be given for private data transmission networks subject to approval, since the public networks are considered to satisfy the communication demand.

Fixed connections are available at 50, 300, 1200, 2400, 4800, 9600 and 48000 bit/s.

Network-supplied clock signals are mandatory.

4.5 Telefax

Service commenced on 1.1.1979 with group 2 equipment and since May 1982 with group 3/2 in the public telephone network. All telefax equipment need a general type approval and an attachment approval for each piece. DBP and private telefax equipment is available.

4.6 Teletex

Service commenced in June 1982. Already given approvals to Teletex equipment are limited as to 1983, technical changes are possible. All DCE will be provided by the DBP, the DTE must conform with the interface requirements and need attachment approvals.

4.7 Videotex

Acceptance tests for both types of service (interactive and broadcast) have already started in particular areas (interactive) of the country and will continue for some years. Interactive Service (Bildschirmtext) will commence during the second half of 1983.

5. Connection Requirements

The DBP controls all public telephone as well as text and data transmission services.

5.1 Directly connected attachments

In general, the DBP provides the DCE for use on the switched telephone and switched data services, but private modems may be used on leased lines.

5.2 Indirectly connected attachments

Mandatory approval procedure.

DTE must conform with interface and line release requirements. For DATEX-P, initial approval requires conformance with interface requirements; full approval with conformance testing with X.25.

The manufacturer has to declare that his equipment complies with the relevant VDE rules (e.g. product safety) and does not exceed the limits for electromagnetic compatibility.

5.3 Administrative procedures for approval

General type approval and attachment approval for each piece of equipment on each separate service is necessary. Normal procedure for type approval 2-6 months from "request" to "approval".

The DBP reserve the right to inspect the hardware but may give approval against documentation only.

5.4 Charges for approval

The charges for the type approval number depend on the time spent on the approval procedure; e.g. for Terminal type approval:

c. DM 300 - 600 without acceptance test

c. up to DM 2000 with acceptance test.

1. Name of Country

SPAIN

2. PTT Administration

Compania Telefonica Nacional de España (C.T.N.E)

3. Address for Enquiries, or for Permission to Connect

C.T.N.E.

Divisione de Informatica

Servicio Central de Marketing

Avda. Brasil Nov. 17

MADRID 20

Phone: +34 1 455.12.88

4. Types of Service

4.1 On PSTN

- Up to 48000 bit/s.
- Modems are supplied by C.T.N.E.
- Approved acoustically coupled modems are permitted.

4.2 Packet-switched

- a) R.E.T.D. (Red Especial Transmission de Datos) or S.N.D.T. (Special Network for Data Transmission) has been available 1971. 20.000 customers in 1980.

R.E.T.D. follows a subset of X.25.

- b) X.25 IBERPAC will be available by June/July 1983.

Both networks will be running for 2 or 3 years in parallel. All customers will be guided to X.25 IBERPAC in the future.

4.3 Circuit-switched digital

Nothing planned.

4.4 Leased-circuit services

- Telegraph leased circuits up to 200 bit/s.
- Standard quality telephone circuits up to 1200 bit/s.
- Special quality telephone circuits up to 9600 bit/s (4 wires).

4.5 Videotex

Under development. It was used in 1982 for the World Cup 1982. Expected to be available early in 1984.

5. Connection Requirements

5.1 Directly connected attachments

Modems up to 4800 bit/s are supplied by C.T.N.E. on a mono-

poly basis.

For rates higher than 4800 bit/s the customers use approved private modems.

Acoustically coupled modems have to be approved by C.T.N.E.

No mandatory safety requirements.

5.2 Indirectly connected attachments

Mandatory performance and protocol validation procedure for P.D.N. (IBERPAC and RETD).

For RETD, validation procedures are at two levels: protocol level and end-user level.

No information for IBERPAC yet.

5.3 Administrative procedures for approval

The manufacturer has to supply the equipment and the schematics to C.T.N.E. There is no official pre-printed application form for approval.

5.4 Charges for approval

There are no official prices. Normal charges are around US \$ 1000.

1. Name of Country

FRANCE

2. PTT Administration

Administration Française des PTT

3. Address for Enquiries, or for Permission to ConnectGeneral:

CNET-A
Secrétariat CAITP
38 Av. du Général Leclerc
F-92931 ISSY LES MOULINEAUX
Phone: +33 1 638.44.44

For TRANSPAC service:

TRANSPAC
Tour Montparnasse
BP 145
F-75755 PARIS
Phone: +33 1 538.52.11

4. Types of Service4.1 On PSTN

Authorized modem types are: CCITT, V.21, V.22, V.23, V.26bis, V.27ter (300 to 4800 bit/s).

4.2 Packet-switched (TRANSPAC)

Offers packet switching service (2,4 to 48 kbit/s) according to X.2, X.3, X.25, X.28 and X.29. LAP A and LAP B are available. Modems are provided by the Administration for X.25 and X.29 interfaces. They may be provided by the user for X.28 interface (V.21, V.22 or V.23 modems).

A "dummy" subscriber may be accessed for testing purposes.

TRANSPAC can be accessed through the PSTN at 1200 bit/s or 2400 bit/s full duplex, or 4800 bit/s half duplex by means of specialized "black boxes".

4.3 Circuit-switched digital

In 1984, the satellite Telecom 1 will offer X.21 interface from 64 to 1920 kbit/s.

4.4 Leased-circuit services

Authorized modem types as in 4.1 plus V.26, V.27, V.27bis and V.29 (300 to 9600 bit/s). Multipoint networks may also be constructed.

Base band lines:

Allow for the connection of base band modems at data rate up to 72 kbit/s. These modems must be also of an approved type. The distance is limited by the line attenuation which must be lower than 40 dB at the bit rate frequency.

Group band services:

Provides long distance circuits at 48, 64 or 72 kbit/s with V.35 interface. Modems are provided by the PTT administration.

"Transplex" service:

Provides 50 to 1200 bit/s synchronous leased service, 5 to 8 bit/character, 1 to 2 stops. Automatic speed recognition may be provided as an option.

Access is through leased telegraph or telephone lines or switched telephone network.

"Transmic" service:

Offers point-to-point leased digital circuits by using the PCM telephone network. Data rate and interfaces are as follows:

- 2400, 4800 and 9600 bit/s: V.24/V.28 interface.
- 48 kbit/s: V.35 interface.
- 128, 256, 512 and 1024 kbit/s: X.24/V.11 interface
- 2048 kbit/s: G.703 interface.

4.5 Telegraph network

Telex network:

Provides up to 200 Bd transparent service after call establishment. The call may be completed by the DTE itself at 50 Bd using the Telex procedure or by using an auxiliary teleprinter.

The DTE must be approved by the PTT administration.

Leased circuits:

Up to 200 Bd single current (100 V/50 mA max) or double current (48 V/20 mA).

5. Connection Requirements

The monopoly position in general concerns the lines only. The DCEs may generally be provided by the user provided they are of an approved type*. However for TRANSPAC, Transmic and group band services, the DCEs are provided by the PTT administration.

* The list of the approved modems is available at the address above mentioned.

5.1 Directly connected attachments

Mandatory safety specification for connection. All apparatus has to comply with IEC 65, but there is no mandatory approval procedure.

5.2 Indirectly connected attachments

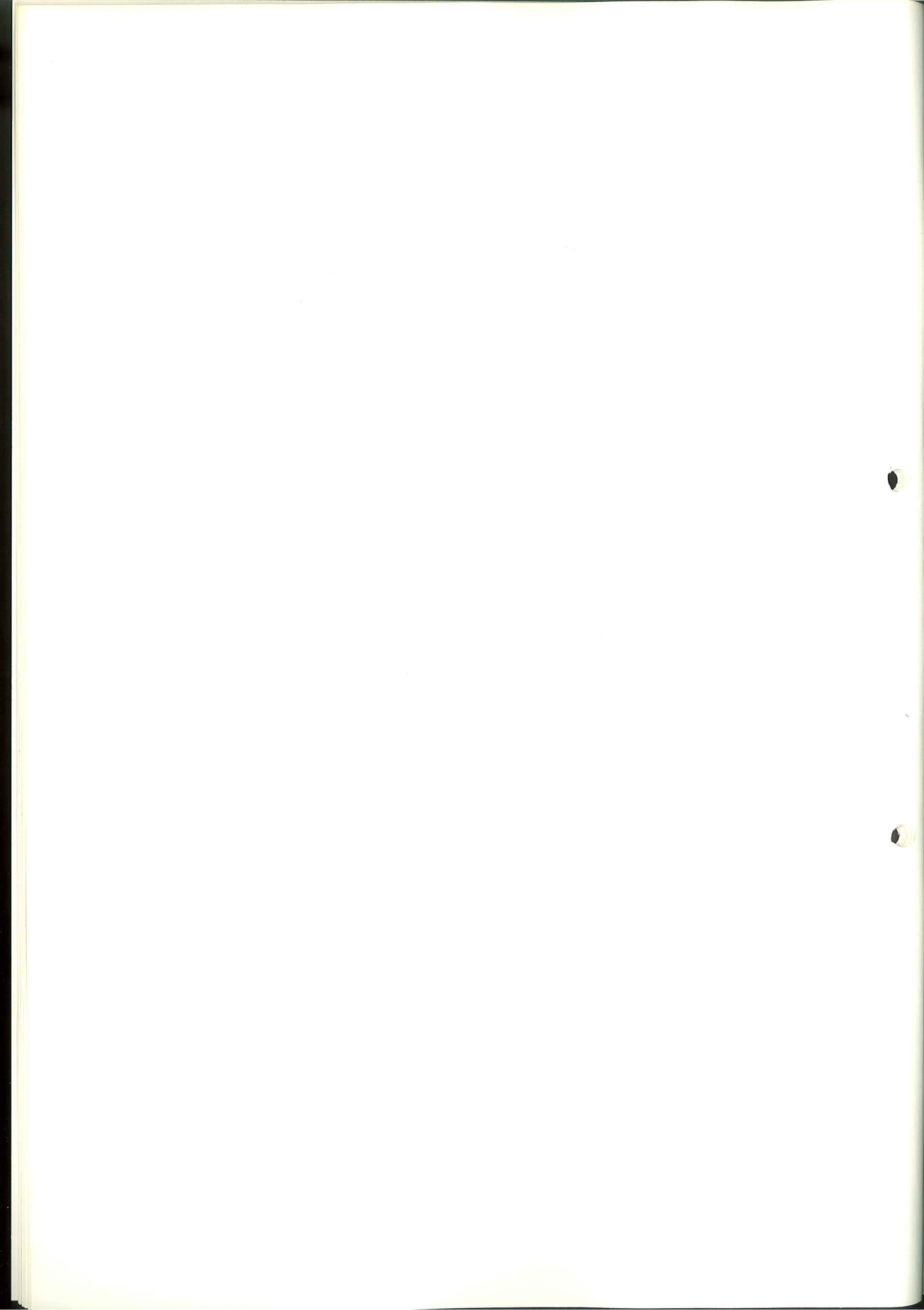
There is a performance and protocol validation procedure for telex access and auto-diallers, not for other apparatus.

5.3 Administrative procedures for approval

Written request.

5.4 Charges for approval

Depending on the type of apparatus; about FF 3300 for a modem.



1. Name of Country

UNITED KINGDOM

2. PTT Administration

British Telecommunications

3. Address for Enquiries, or for Permission to ConnectBritish Telecom, RA 1211
Tenter House
45 MoorfieldsLONDON EC2Y 9TH

Phone: +44 1 432.93.83

British Approvals Board for
Telecommunications

Mark House

The Green

9/11 Queens Road, Hersham

WALTON-ON-THAMES KT12 5NA

Phone: +44 9322 44.401

For the time being, initial enquiries should be addressed to British Telecom.

4. Types of Service4.1 On PSTN

Datel 200	200/300 bit/s duplex
Datel 600	600/1200 bit/s
Datel 1200DX	1200 bit/s duplex
Datel 2400	2400 bit/s
Datel 4800	4800 bit/s
Datel 4832	4800/3200 bit/s
Datel 9600	9600 bit/s

Datel 4832 and 9600 bit/s available on Double Dial-up.

4.2 Packet-switched

PSS, Packet Switchstream 1 (X.25).

4.3 Circuit-switched digital

Circuit-switched digital services planned for 1984 and will be known as Switchstream 2 (integrated digital access, IDA).

4.4 Leased-circuit services

The (non-digital) Datel services listed in 4.1 above are available plus Datel 64K (48, 56, 64 or 72 kbit/s).

Privately supplied apparatus is permitted subject to approval.

Digital:

- Kilostream. 2400 bit/s to 64 kbit/s X.21 and X.21bis interfaces. The NTUs are provided by BT and the service opens January 1983.

- Megastream. 2 or 8 Mbit/s. 2 Mbit/s service available now but is limited to the London area initially. Provides either an unstructured 2 Mbit/s stream or 30 x 64 kbit/s channels.

No details are available for the 8 Mbit/s service.

- Satstream. Will provide links to Europe and off-shore locations, etc. The expected date for the availability of this service is early 1984.

4.5 Teletex

The service will operate on Switchstream 1 and the PSTN. The terminals will be privately supplied with BT providing the administration only.

A pilot service is due to start shortly.

4.6 Prestel

A videotex service with both public and private databases.

5. Connection Requirements

Telecomm approval in the UK is in a transition phase. An act of parliament in 1981 liberalized the supply of telecomms. apparatus and the effects of this have not yet stabilized.

Attachment standards are now the responsibility of BSI and the approvals will be conducted by the British Approvals Board for Telecomms (BABT) commencing in 1983. There will be a phased handover by BT to BABT.

5.1 Directly connected attachments

The British Telecom monopoly is now limited to the provision of the core network and the supply of the first subscriber telephone on a PSTN line.

For all attachments compliance and approval to BS 6301 (safety) is mandatory, and compliance with the Low Voltage Directive is required.

5.2 Indirectly connected attachments

When liberalization is complete, there will be no safety requirements, as regards connection to the network. There is currently a dispute about user safety.

There are mandatory validation procedures for all protocol levels for value added services, e.g. Switchstream 1 and Prestel. Requirements for automatic calling and answering are currently in dispute.

5.3 Administrative procedures for approval

Eventually, for most apparatus, the procedure will be to submit the apparatus to BABT for test against one or more

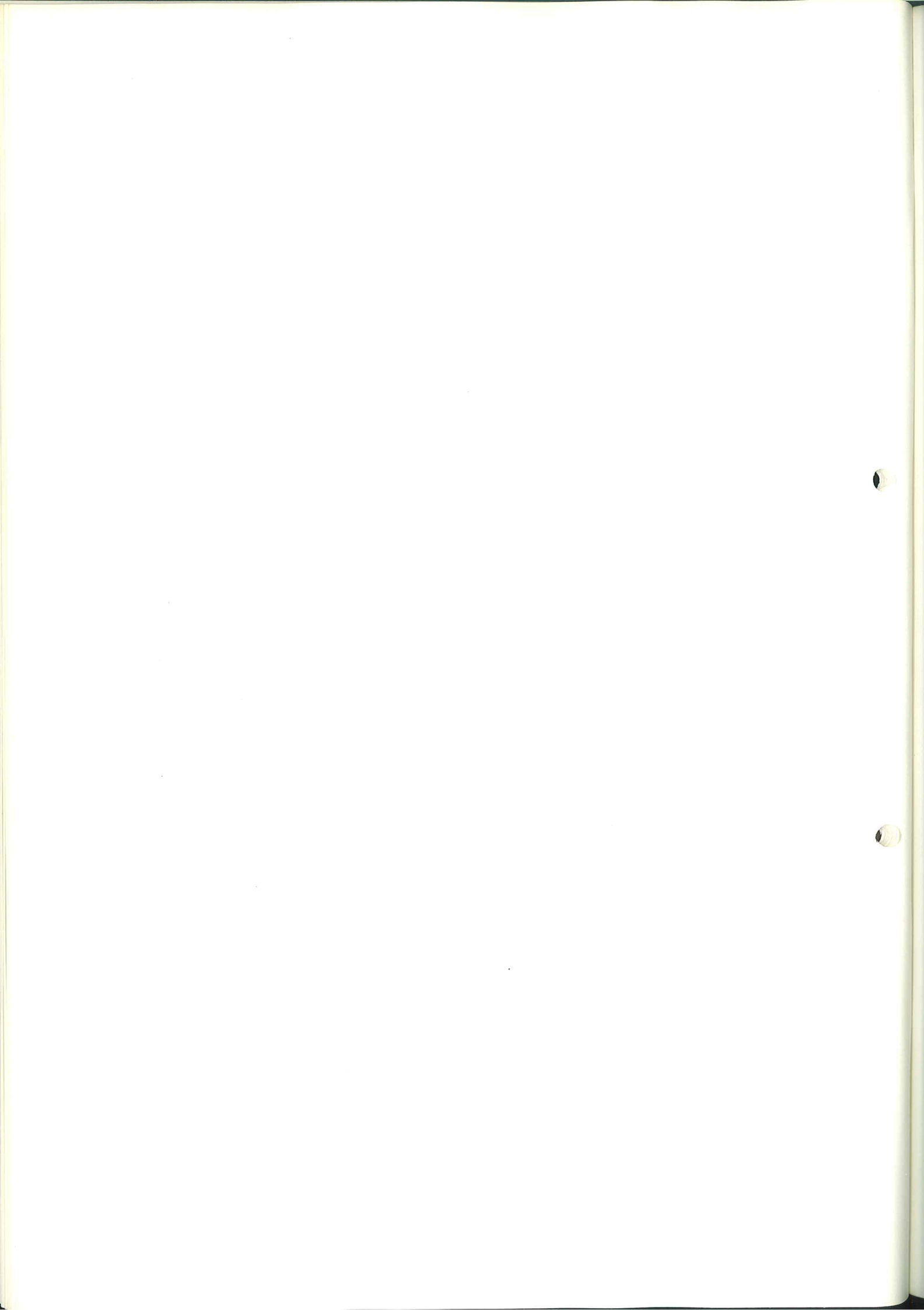
British Standards. BABT will also evaluate a manufacturer's ability to reproduce the product under test, e.g. Quality Control and Change Control.

5.4 Charges for approval

Application fee, one time charge which covers testing.

Modem	- £ 2800
Certificate fee, annual charge	- £ 200
Pre-licence factory visit	- £ 75 + expenses

All fees are subject to Value Added Tax at the current rate (15% at present).



1. Name of Country

ITALY

2. PTT Administration

Ministero delle Poste e Telecomunicazioni

3. Address for Enquiries, or for Permission to Connect

Ministero delle Poste e Telecomunicazioni
Direzione centrale dei servizi telegrafici
Viale Europa 160

ROMA

Phone: +39 6 54.60

Telex: 61.00.70

4. Types of Service

4.1 On PSTN

300 - 2400 bit/s data transmission

Facsimile

Videotel (videotex)

4.2 Packet-switched

2400 - 48 kbit/s Virtual call

Permanent virtual circuit.

4.3 Circuit-switched digital

Teletex - data transmission (X.21).

4.4 Leased-circuit services

300 - 9600 bit/s V.24 analog circuit

48 - 144 kbit/s analog circuit

V.35 analog circuit

4.5 Teletex

4.6 Televideo (broadcast videotex)

5. Connection Requirements

5.1 Directly connected attachments

The PTT is essentially a monopoly. The PTT controls all non-military transmissions by wire or radio. In general, the PTT provides modems for switched and leased circuits.

Private modems, of approved type, are allowed on leased circuits.

For all apparatus connected to the PTT line there is:

- a mandatory safety specification for connection,

- a requirement for the manufacturer to affirm compliance with low voltage as to user safety,
- a mandatory safety approval procedure.

5.2 Indirectly connected attachments

No formal requirements have been published thus far. In the near future it is intended to base safety requirements on IEC 435.

For teletex and facsimile, the PTT supplies DTE in competition with private dealers.

There is a mandatory protocol validation for:

- 1) ITAPAC (X.25) up to level 3
- 2) Teletex up to level 6
- 3) Facsimile up to level 7

5.3 Administrative procedures for approval

Request for approval must include:

- technical description of the equipment,
- wiring or logical diagrams,
- maintenance manual,
- a piece of equipment from series production (2 if DCE).

All documentation must be in Italian. A minimum 3-month period is requested for approval.

5.4 Charges for approval

The total charge for approval includes:

- a fixed charge
- a charge depending on the duration of the testing period
- a charge in respect of the equipment necessary for the testing.

1. Name of Country

THE NETHERLANDS

2. PTT Administration

Staatsbedrijf der Posterijen, Telegrafie en Telefonie (PTT)

3. Address for Enquiries, or for Permission to ConnectCentrale Directie der PTT
Centrale Afdeling Telegrafie
Postbus 3000

NL-2500 GA DEN HAAG

4. Types of Service4.1 On PSTN

Any data rate and modulation technique, provided the voice band limits are not exceeded.

4.2 Packet-switched

2400, 4800, 9600 and 48000 bit/s, dependent on situation.

4.3 Circuit-switched digital

Under consideration.

4.4 Leased-circuit servicesTelegraph : 50, 60, 200 Baud
Telephone : up to 9600 bit/s
Wideband : 48, 64, 72 kbit/s
Carrier : up to 153 kbit/s (primary group)4.5 Viewdata

Viditel

4.6 Teledata

Planned for 1983.

4.7 Facsimile

Faxpost and Bureaufax

4.8 International services

Leased circuits, telephone (300 - 3400 Hz) and wideband (up to 56 kbit/s).

PSTN up to 4800 bit/s

Telex

PTT Message Service (facsimile)

DABAS (database access service to PDN in USA and Canada)

Euronet access

5. Connection Requirements

5.1 Directly connected attachments

There is a PTT monopoly of supply of:

- telephone units
- modems for Viewdata (Viditel)
- DCE for Public Data Network (DN1)
- PBX/PABX
- telex equipment

In general the PTT does not supply any other directly connected attachment.

Mandatory safety specification for connection for all equipment (reference Td 280-0).

Mandatory safety approval procedure for all equipment; test done by PTT (reference

5.2 Indirectly connected attachments

In general there are no safety requirements set by the PTT, however, equipment must be in compliance with the Dutch safety law.

The PTT has only set safety requirements for terminal equipment to be connected to PTT DCEs for Public Data Network DN1.

There are mandatory performance and protocol validation procedures for:

- DTE on Public Data Network DN1
- DTE with special Automatic Calling Units.

5.3 Administrative procedures for approval

Upon letter of submission to the PTT, PTT will contact submitter to agree a test date; in case of a DTE for PDN a questionnaire has to be filled out and submitted to the PTT before the test.

5.4 Charges for approval

Dfl 500 min.

5.5 Documents

Td 280-0 Technical Requirements, to be met by all privately-owned equipment to be connected to PTT circuits.

1. Name of Country

SWEDEN

2. PTT Administration

Televerket

3. Address for Enquiries, or for Permission to Connect

4. Types of Service

4.1 On PSTN

Services are offered covering V.21, V.22, V.23, V.26bis and V.27ter modems.

Acoustical coupling is permitted (300 bit/s max).

4.2 Packet-switched

Planned for around 1985. A trial network is operational.

4.3 Circuit-switched digital (Nordic Public Data Network)

Services of 600, 2400, 4800 and 9600 bit/s synchronous and 300 bit/s asynchronous are offered, both with either X.21 or X.21bis interfaces. A special application form is available. Network-supplied clock signals are mandatory.

4.4 Leased-circuit services

Services are offered covering V.23, V.27, V.27bis, V.29 modems, and a 2400 - 19200 bit/s (synchr/asynchr) baseband limited distance modem.

5. Connection Requirements

5.1 Directly connected attachments

For all equipment not mentioned below, the PTT has a monopoly of supply.

From July 1, 1983, Televerket will allow direct connection of autodiallers and asynchronous modems with speeds up to 1200 bit/s to the PSTN. Applications for permission to connect can now be made. The actual requirements are currently being drafted; until they are available, testing is done according to document A071 1076, "Technical requirements for the connection of privately owned subscribers' equipment to the public telephone system".

Equipment has to be designed according to PTT document 0400-A-102 (safety).

Applicants may be requested to certify in writing that the equipment has passed a type test. Such test can be performed by SEMKO (Swedish test institute for testing and approval of electrical equipment).

5.2 Indirectly connected attachments

For apparatus connected to either PTT modems or to the Nordic public data network:

- the apparatus has to meet SEMKO 101, which is summarized in PTT document 0400-A-102.
- Applicants may be requested to certify in writing that the equipment has passed a type test. Such test can be performed by SEMKO (Swedish test institute for testing and approval of electrical equipment).

5.3 Administrative procedures for approval

Applications for Permission to Connect have to be made at the address given above. After approval the equipment is listed in a publicly available PTT list.

5.4 Charges for approval

