SLOVENSKI STANDARD
SIST EN 300 418 V1.2.1:2004

01-oktober-2004

Dostop in terminali (AT) - Digitalni zakupljeni vodi za prenosno hitrost 2 048 kbit/s in za nestrukturirane in strukturirane signale (D2048U in D2048S) - Omrežni vmesnik

Access and Terminals (AT); 2 048 kbit/s digital unstructured and structured leased lines (D2048U and D2048S); Network interface presentation

Ta slovenski standard je istoveten z: **EN 300 418 Version 1.2.1**

ICS:

33.040.50	Vodi, zveze in tokokrogi	Lines, connections and circuits

SIST EN 300 418 V1.2.1:2004 **en**

ETSI EN 300 418 V1.2.1 (2001-07)

European Standard (Telecommunications series)

Access and Terminals (AT); 2 048 kbit/s digital unstructured and structured leased lines (D2048U and D2048S); Network interface presentation

Reference
REN/AT-020006

Keywords
digital, interface, leased line, network, ONP,
terminal, testing, UNI

ETSI

650 Route des Lucioles
F-06921 Sophia Antipolis Cedex - FRANCE

Tel.: +33 4 92 94 42 00 Fax: +33 4 93 65 47 16

Siret N° 348 623 562 00017 - NAF 742 C
Association à but non lucratif enregistrée à la
Sous-Préfecture de Grasse (06) N° 7803/88

Important notice

Individual copies of the present document can be downloaded from:
http://www.etsi.org

The present document may be made available in more than one electronic version or in print. In any case of existing or perceived difference in contents between such versions, the reference version is the Portable Document Format (PDF). In case of dispute, the reference shall be the printing on ETSI printers of the PDF version kept on a specific network drive within ETSI Secretariat.

Users of the present document should be aware that the document may be subject to revision or change of status. Information on the current status of this and other ETSI documents is available at http://www.etsi.org/tb/status/

If you find errors in the present document, send your comment to:
editor@etsi.fr

Copyright Notification

Contents

Intellectual Property Rights

IPRs essential or potentially essential to the present document may have been declared to ETSI. The information pertaining to these essential IPRs, if any, is publicly available for **ETSI members and non-members**, and can be found in ETSI SR 000 314: *"Intellectual Property Rights (IPRs); Essential, or potentially Essential, IPRs notified to ETSI in respect of ETSI standards"*, which is available from the ETSI Secretariat. Latest updates are available on the ETSI Web server (http://www.etsi.org/ipr).

Pursuant to the ETSI IPR Policy, no investigation, including IPR searches, has been carried out by ETSI. No guarantee can be given as to the existence of other IPRs not referenced in ETSI SR 000 314 (or the updates on the ETSI Web server) which are, or may be, or may become, essential to the present document.

Foreword

This European Standard (Telecommunications series) has been produced by ETSI Technical Committee Access and Terminals (AT).

The present document resulted from a mandate from the Commission of the European Community (CEC) to provide standards for the support of the Directive on Open Network Provision (ONP) of leased lines (92/44/EEC).

In the case of the unstructured leased line, the present document supersedes ETS 300 246 (withdrawn) (see annex C).

There are four other standards directly related to the present document:

- EN 300 247: "Access and Terminals (AT); 2 048kbit/s digital unstructured lease line (D2048U); Connection characteristics";
- EN 300 248: "Access and Terminals (AT); 2 048 kbit/s digital unstructured leased line (D2048U); Terminal equipment interface";
- EN 300 419: "Access and Terminals (AT); 2 048 kbit/s digital structured leased lines (D2048S); Connection characteristics";
- EN 300 420: "Access and Terminals (AT); 2 048 kbit/s digital structured leased lines (D2048S); Terminal equipment interface".

The present document is based on information from ITU-T Recommendations and ETSI publications and the relevant documents are quoted where appropriate.

National transposition dates	
Date of adoption of this EN:	29 June 2001
Date of latest announcement of this EN (doa):	30 September 2001
Date of latest publication of new National Standard or endorsement of this EN (dop/e):	31 March 2002
Date of withdrawal of any conflicting National Standard (dow):	31 March 2002

Introduction

The Council Directive on the application of ONP to leased lines (92/44/EEC) (see annex C) concerns the harmonization of conditions for open and efficient access to, and use of, the leased lines provided over public telecommunications networks, and the availability throughout the European Union (EU) of a minimum set of leased lines with harmonized technical characteristics.

The consequence of the Directive is that telecommunications organizations within the EU shall make available a set of leased lines between points in these countries with specified connection characteristics and specified interfaces. Under the Directive 91/263/EEC (see annex C), later replaced by 98/13/EC (see annex C), terminal equipment for connection to these leased lines was required to fulfil certain essential requirements.

The present version of the present document has been produced to introduce some necessary changes.

ETS 300 166 (see annex C) and ITU-T Recommendation G.703 [1] were used as the basis for the network interface presentation requirements.

1 Scope

The present document specifies the technical requirements and test principles for the network interface presentations of ONP 2 048 kbit/s digital leased lines using 120 Ω interfaces. This includes:

- the 2 048 kbit/s digital unstructured leased line; and
- the 2 048 kbit/s digital structured leased line with an information transfer rate of 1 984 kbit/s without restriction on binary content.

A connection is presented via interfaces at Network Termination Points (NTP). The present document defines the network interface as presented by the leased line provider and should be used in conjunction with the appropriate companion standard, EN 300 247 [3] or EN 300 419 [5] , specifying the connection characteristics between the NTPs of the leased line. The present document and the appropriate connection characteristics standard together describe the technical characteristics of the leased line.

The present document is applicable to leased lines, including part time leased lines, for which the establishment or release do not require any protocol exchange or other intervention at the NTP.

The present document covers the physical, mechanical and electrical characteristics (except safety, overvoltage and EMC aspects) of the network interface and specifies the conformance tests for equipment of the kind that provides the interface presentation. Some of the tests described in the present document are not designed to be applied to the interface of an installed leased line; such tests may be applied to equipment of the kind used to provide the interface. The present document does not include details concerning the implementation of the tests nor does it include information on any regulations concerning testing. There is no requirement for each leased line to be tested in accordance with the present document before it is brought into, or returned into, service.

2 References

The following documents contain provisions which, through reference in this text, constitute provisions of the present document.

- References are either specific (identified by date of publication, edition number, version number, etc.) or non-specific.
- For a specific reference, subsequent revisions do not apply.
- For a non-specific reference, the latest version applies.

[1] ITU-T Recommendation G.703 (1998): "Physical/electrical characteristics of hierarchical digital interfaces".

[2] ITU-T Recommendation O.151 (1992): "Error performance measuring equipment operating at the primary rate and above".

[3] ETSI EN 300 247: "Access and Terminals (AT); 2 048kbit/s digital unstructured lease line (D2048U); Connection characteristics".

[4] ETSI EN 300 248: "Access and Terminals (AT); 2 048 kbit/s digital unstructured leased line (D2048U) Terminal equipment interface".

[5] ETSI EN 300 419: "Access and Terminals (AT); 2 048 kbit/s digital structured leased lines (D2048S); Connection characteristics".

[6] ETSI EN 300 420: "Access and Terminals (AT); 2 048 kbit/s digital structured leased lines (D2048S); Terminal equipment interface".

3 Definitions and abbreviations

3.1 Definitions

For the purposes of the present document, the following terms and definitions apply:

leased lines: telecommunications facilities provided by a public telecommunications network that provide defined transmission characteristics between NTPs and that do not include switching functions that the user can control, (e.g. on-demand switching)

Network Termination Point (NTP): all physical connections and their technical access specifications which form part of the public telecommunications network and are necessary for access to and efficient communication through that public network

PRBS(2^{15}-1): Pseudo Random Bit Sequence (PRBS) (as defined in clause 2.1 of ITU-T Recommendation O.151 [2])

terminal equipment: equipment intended to be connected to the public telecommunications network, i.e.:

- to be connected directly to the termination of a public telecommunication network; or
- to interwork with a public telecommunications network being connected directly or indirectly to the termination of a public telecommunications network,

in order to send, process, or receive information

3.2 Abbreviations

For the purposes of the present document, the following abbreviations apply:

AIS	Alarm Indication Signal
AMI	Alternate Mark Inversion
CRC-4	Cyclic Redundancy Check-4 bit
D2048S	2 048 kbit/s digital structured leased line
D2048U	2 048 kbit/s digital unstructured leased line
dc	direct current
EMC	ElectroMagnetic Compatibility
HDB3	High Density Bipolar code of order 3 (see annex B)
ISDN	Integrated Services Digital Network
NTP	Network Termination Point
ONP	Open Network Provision
ppm	parts per million
PRBS	Pseudo Random Bit Sequence
rms	root mean square
RX	RX is a signal input (at either the leased line interface or the test equipment, see figure 1)
TX	TX is a signal output (at either the leased line interface or the test equipment, see figure 1)

4 Requirements

These requirements define the network interface presentation for:

- the 2 048 kbit/s digital unstructured leased line (D2048U) which provides a bidirectional point-to-point digital connection with a usable bit rate of 2 048 kbit/s where timing is not provided from the network. The provision of circuit timing is the responsibility of the user. No structuring of the data is provided, or shall be required, by the network and any structuring is the responsibility of the user; and
- the 2 048 kbit/s digital structured leased line (D2048S) which provides a bidirectional point-to-point digital connection with an information transfer rate of 1 984 kbit/s without restriction on binary content. The frame structure in the 2 048 kbit/s bit stream is defined in EN 300 419 [5]. Any structuring of the data within the transparent 1 984 kbit/s part of the frame is the responsibility of the user.

NOTE 1: The network interface is not designed for power feeding.

NOTE 2: If equipment providing the interface requires a mains supply, the leased line provider should bring this to the attention of the user so that the user can provide mains supply back-up facilities, if required.

4.1 Physical characteristics

The connection arrangements provided by the leased line interface shall be suitable for hardwired connection (see clause 4.1.1); however, with the agreement of the user, an alternative means of connection, using a socket, may be provided (see clause 4.1.2).

The transmit pair is the output from the network interface. The receive pair is the input to the network interface, as shown in figure 1. Where the terms "output" and "input" are used without qualification in the present document, they refer to the network interface.

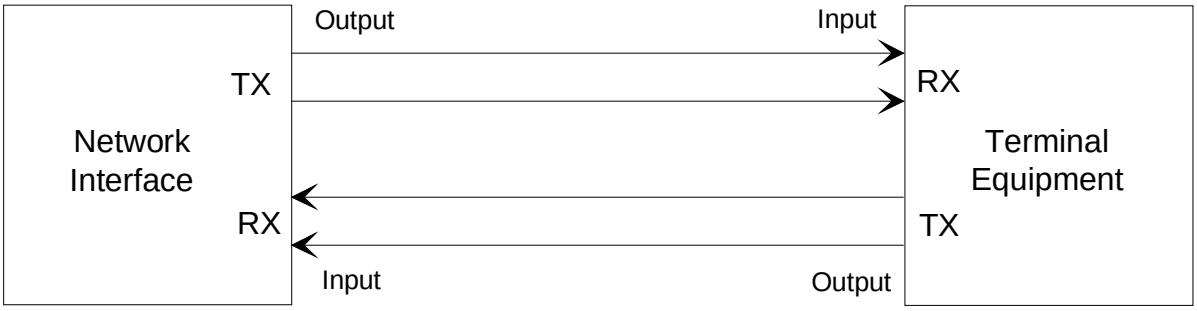

Figure 1

The use on the terminal equipment side of the interface of shielded cables may be necessary to meet radiation and immunity requirements defined in ElectroMagnetic Compatibility (EMC) standards. Therefore the NTP is required to provide a point for connection of the shield (see clause 4.1.3).

4.1.1 Hardwired connection

Requirement: Where the leased line is being presented as a hardwired connection, the leased line interface shall provide a means of terminating wire with solid conductors having diameters in the range 0,4 mm to 0,6 mm. The leased line provider shall provide information on the configuration of the means of connection.

Test: There is no test. All subsequent tests are carried out via the specified connection method.

4.1.2 Socket specification

There is no constraint on the type of socket that may be used under the present document.

NOTE: The intention is to specify the same socket as is specified for Integrated Services Digital Network (ISDN) primary rate access; however this approach is not practicable at present since connectors conforming to ISO/IEC 10173 (see annex C) are not available. A requirement to use the ISDN primary rate socket may be added to the present document when such connectors are readily available.

4.1.3 Shield connection point

Requirement: The NTP shall provide a point, or points, to which the shield, or shields, of the cable on the terminal side of the interface can be connected.

NOTE: The purpose of these points is to provide a path from the shield to a common reference. The common reference point does not necessarily have to be earthed.

Test: There shall be a visual inspection that a point, or points, for connection of the shield, or shields, is provided.