



SLOVENSKI STANDARD

SIST EN 300 659-3 V1.3.1:2003

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8 cglrcd`j]b`hYfa]bU]`f5 HŁĚ5 bUc[b]`Xcglrcd`Xc`Uj bY[U_ca i HfUbY[UHfYZc]bg_Y[U
ca fYj`UfDGHBLĚ`Dfclrc_c`bUfc b]y_Y[Uj cXUj `fUfj b]`nUb_]`nUdf]_Uncj UbYf]b
gcfcXbYŁglrcf]j] YĚ` "XY.`?cX]fUb`Y`gdcfc]`]b`dUfUa Yfrcj `dcXUh_cj bY`dcj YnUj Y

Access and Terminals (AT); Analogue access to the Public Switched Telephone Network (PSTN); Subscriber line protocol over the local loop for display (and related) services; Part 3: Data link message and parameter codings

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European Standard (Telecommunications series)

**Access and Terminals (AT);
Analogue access to the
Public Switched Telephone Network (PSTN);
Subscriber line protocol over the local loop for
display (and related) services;
Part 3: Data link message and parameter codings**

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Foreword

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

Version 1.2.1 of the present document had been submitted to One-step Approval Procedure 200017 but was withdrawn due to the receipt of substantial technical comments.

The present document is part 3 of a multi-part standard covering the PSTN subscriber line protocol over the local loop for display (and related) services, as described below:

- Part 1: "On-hook data transmission";
- Part 2: "Off-hook data transmission";
- Part 3: "Data link message and parameter codings".**

National transposition dates	
Date of adoption of this EN:	12 January 2001
Date of latest announcement of this EN (doa):	30 April 2001
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1 Scope

The present document specifies the data link message and parameter codings for the PSTN subscriber line protocol to support display and related services sent by the Local Exchange (LE). The data transmission in the subscriber line protocol is accomplished by using asynchronous voice-band Frequency-Shift Keying (FSK) signalling.

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.
- A non-specific reference to an ETS shall also be taken to refer to later versions published as an EN with the same number.

- [1] ETSI ETS 300 648 (1997): "Public Switched Telephone Network (PSTN); Calling Line Identification Presentation (CLIP) supplementary service; Service description".
- [2] CCITT Recommendation Q.11 (1988): "Numbering plan for the international telephone service".
- [3] CCITT Recommendation T.50 (1992): "International Reference Alphabet (IRA) (Formerly International Alphabet No. 5 or IA5) - Information technology - 7-bit coded character set for information interchange".
- [4] ETSI TR 101 292: "Public Switched Telephone Network (PSTN); Protocol over the local loop for display and related services; Proposed enhancements and maintenance of existing standards".
-

3 Definitions and abbreviations

3.1 Definitions

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

calling line identity: see ETS 300 648 [1]

graphic character: character that has a visual representation normally hand-written, printed or displayed; in IRA characters 2/1 to 7/14 (see CCITT Recommendation T.50 [3])

3.2 Abbreviations

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

AOC-D	Advice Of Charge During the call
AOC-E	Advice Of Charge at the End of the call
AOC-S	Advice Of Charge at call Set-up
AN	Access Network
CCBS	Completion of Calls to Busy Subscriber
CCNR	Completion of Calls on No Reply
CLIP	Calling Line Identification Presentation
CLIR	Calling Line Identification Restriction

CNIP	Calling Name Identification Presentation
CNIR	Calling Name Identification Restriction
CT	Connection Type
FSK	Frequency-Shift Keying
IRA	International Reference Alphabet
LE	Local Exchange
MSN	Multiple Subscriber Number
MWI	Message Waiting Indication
NPI	Network Provider Identity
NPN	Network Provided Number
PSTN	Public Switched Telephone Network
SDSS	Server Display and Script Services
SMS	Short Message Service
SUB	Subaddressing
TE	Terminal Equipment
UPN	User Provided Number
VPN	Virtual Private Network

4 Data encoding

IRA, as specified in CCITT recommendation T.50 [3] (see annex C) including national versions, shall be used for the character coding.

Control characters 0/0 to 1/15 and 7/15 are not used within this protocol. Characters 8/0 to 15/15 are reserved for network operator use.

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5 Data Link message and parameter codings

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5.1 Data Link message and general parameter requirements

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5.1.1 Data Link Message

A Data Link message (for simplicity: a message) is generally related to a given service, but can be used in support of several different applications (each of them requiring different parameters).

For each message type (or for each service if the same message type is used for different applications) a list of parameters is defined.

Parameters may be sent in any order within a message.

A message can contain parameters for network operator use only.

A range within the Message type coding is reserved for network operator use.

5.1.2 Parameter

A parameter shall be used only once in each message.

The parameter "Extension for network operator use" (see subclause 5.4.26) shall be included in the message when a reserved value for network operator is used in Message type, Parameter type or Parameter data value.

The same parameter may be used within different messages (or different services).

Parameters can be either mandatory or optional according to the service description.

A range within the Parameter type coding is reserved for network operator use.

A range within the values of a parameter can be reserved for network operator use.

5.1.3 TE considerations

The TE does not need to know which parameters are mandatory/optional.

The TE decides how to handle the parameters (e.g. to display information or not).

The TE should discard a parameter with an unknown value.

The TE should discard an unknown message.

The TE should discard an unknown parameter in a known message, keeping the known parameters.

If mutually exclusive parameters are found in a message, the TE should discard the message.

If two or more of the same parameters, but with different values, are found in a message, the TE should discard the message.

If two parameters within a message are identical (same type coding value) the TE should discard the second parameter.

If the TE recognizes the "Extension for network operator" parameter data, it should process the network operator specific Message and/or Parameter in accordance with the network operator specifications.

If the TE does not recognize the "Extension for network operator" parameter, the TE should discard:

- the complete message, if it is a network operator specific type of Message;
- the parameter, if it is a network operator specific Parameter or Parameter value.

5.2 Data Link message types

Table 1 summarizes the messages supported in the present document.

Table 1: Data Link message types

Message Type	Binary coding	Hexadecimal coding	Reference (clause)
Call Set-up	1000 0000	80	5.2.1
Message Waiting Indicator	1000 0010	82	5.2.2
Advice of Charge	1000 0110	86	5.2.3
Short Message Service	1000 1001	89	5.2.4
Reserved for Network Operator use	1111 0001 to 1111 1111	F1 to FF	-

5.2.1 Call Setup message

This message is used to send information related with an incoming call. E.g. Calling Line Identification Presentation (CLIP) and related services.

The Call set-up message may contain the following parameters:

Table 2: Call set-up message parameters

Parameter type	Reference (clause)
Date and Time	5.4.1
Calling Line Identity Or Reason for absence of Calling Line Identity	5.4.2
Called Line Identity	5.4.4
	5.4.3

Calling Party Name	5.4.5
Or	
Reason for absence of Calling Party Name	5.4.6
Complementary Calling Line Identity	5.4.11
Call type	5.4.12
First Called Line Identity	5.4.13
Number of Messages	5.4.14
Type of Forwarded call	5.4.15
Type of Calling User	5.4.16
Redirecting Number	5.4.17
Network Provider Identity	5.4.21
Carrier Identity	5.4.22
Selection of Terminal Function	5.4.23
Display Information	5.4.24
Extension for network operator use	5.4.26
<i>Network operator parameter</i>	-

See annex A and annex B for the parameter status (mandatory/optional at the LE) according to service requirements.

5.2.2 Message Waiting Indicator message

This message type is used to handle information related to messages in a message system.

The Message Waiting Indicator message may contain the following parameters:

Table 3: Message Waiting Indicator message parameters

Parameter type	Reference (clause)
Date and Time	5.4.1
Calling Line Identity	5.4.2
Or	
Reason for absence of Calling Line Identity	5.4.4
Calling Party Name	5.4.5
Or	
Reason for absence of Calling Party Name	5.4.6
Visual Indicator	5.4.7
Message Identification	5.4.8
Last Message CLI	5.4.9
Complementary Date and Time	5.4.10
Complementary Calling Line Identity	5.4.11
Number of Messages	5.4.14
Type of Calling User	5.4.16
Network Provider Identity	5.4.21
Selection of Terminal Function	5.4.23
Display Information	5.4.24
Extension for network operator use	5.4.26
<i>Network operator parameter</i>	-

See annex B for the parameter status (mandatory/optional at the LE) according to service requirements.