



SLOVENSKI STANDARD SIST ETS 300 172 E3:2005

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**Zasebno telekomunikacijsko omrežje (PTN) – Medcentralni signalizacijski protokol
- Vodovne osnovne storitve [ISO/IEC 11572 (1994) spremenjen]**

Private Integrated Services Network (PISN); Inter-exchange signalling protocol; Circuit-mode basic services [ISO/IEC 11572 (1994) modified]

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[ISO/IEC 11572 (1994) modified]

ETSI

European Telecommunications Standards Institute

ETSI Secretariat

Postal address: F-06921 Sophia Antipolis CEDEX - FRANCE

Office address: 650 Route des Lucioles - Sophia Antipolis - Valbonne - FRANCE

X.400: c=fr, a=atlas, p=etsi, s=secretariat - **Internet:** secretariat@etsi.fr

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

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Foreword

This third edition European Telecommunication Standard (ETS) was produced by the Standardizing Information and Communication Systems (ECMA) on behalf of its members and those of the European Telecommunications Standards Institute (ETSI).

The protocol defined in this ETS is the basis for the QSIG protocol for signalling at the Q reference point between Private Integrated services Network eXchanges (PINX). The QSIG protocol is known as "Private integrated Signalling System no. 1" (PSS1) in International Standards.

Whilst this particular ETS defines signalling for the support of circuit-mode bearer services, other ETSs specify other aspects of the QSIG protocol, e.g. generic procedures for the support of supplementary services, and individual supplementary services.

The previous (second) edition of this ETS contained a "standalone" definition of the protocol. This edition endorses an International Standard, ISO/IEC 11572, published since the publication of the second edition of this ETS.

Transposition dates	
Date of adoption of this ETS:	30 November 1995
Date of latest announcement of this ETS (doa):	28 February 1996
Date of latest publication of new National Standard or endorsement of this ETS (dop/e):	31 August 1996
Date of withdrawal of any conflicting National Standard (dow):	31 August 1996

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Endorsement notice

The text of International Standard ISO/IEC 11572 (1994) was approved by ETSI as an ETS with agreed modifications as given below.

NOTE: New or modified text is indicated using sidebars. In addition, underlining and/or strike-out are used to highlight detailed modifications where necessary.

Clause 1

Replace the text of clause 1 by:

This European Telecommunication Standard (ETS) defines the Layer 3 protocol for signalling for the support of circuit-mode bearer services (used either on their own or in support of teleservices) at the Q reference point between Private Integrated services Network eXchanges (PINX) connected together within a Private Integrated Services Network (PISN). The Q reference point is defined in ETS 300 475-1 [14].

Service specifications are produced in three stages and according to the method specified in ETS 300 387 [13]. The definition of signalling protocols is stage 3 of the method. Stage 1 and stage 2 specifications of the basic circuit-mode bearer services are to be found in ETS 300 171 [10]. The protocol defined in this ETS satisfies the requirements identified by the stage 1 and stage 2 specifications in ETS 300 171 [10].

Annexes ZA - ZD are an integral part of this ETS.

Clause 2

After clause 2, add the following new clause:

2bis Conformance

In order to conform to this ETS, a PINX shall satisfy the requirements identified in the Protocol Implementation Conformance Statement (PICS) proforma in annex A.

Clause 3**iTeh STANDARD PREVIEW**

Replace the first paragraph by: **(standards.iteh.ai)**

This ETS incorporates by dated and undated reference, provisions from other publications. These normative references are cited at the appropriate places in the text and the publications are listed hereafter. For dated references, subsequent amendments to or revisions of any of these publications apply to this ETS only when incorporated in it by amendment or revision. For undated references the latest edition of the publication referred to applies.

Insert the following normative references at the end of clause 3:

- | | |
|------|---|
| [9] | ETS 300 102-1 (1990): "Integrated Services Digital Network (ISDN); User-network interface layer 3 Specifications for basic call control". |
| [10] | ETS 300 171 (1992): "Private Telecommunication Network (PTN); Specification, functional models and information flows Control aspects of circuit-mode basic services". |
| [11] | ETS 300 173 (1992): "Private Telecommunication Network (PTN); Specification, functional models and information flows Identification supplementary services". |
| [12] | ETS 300 189 (1992): "Private Telecommunication Network (PTN); Addressing". |
| [13] | ETS 300 387 (1994): "Private Telecommunication Network (PTN); Method for the specification of basic and supplementary services". |
| [14] | ETS 300 475-1 (1995): "Private Integrated Services Network (PISN); Reference configuration Part 1: Reference configuration for PISN eXchanges (PINXs)". |

Throughout the text of ISO/IEC 11572

Throughout the text of ISO/IEC 11572, replace references as shown in the table below:

Reference in ISO/IEC 11572	Modified reference
CCITT Q.931 (note)	ETS 300 102-1 [9]
CCITT Recommendation Q.931	ETS 300 102-1 [9]
ISO/IEC 11571	ETS 300 189 [12]
ISO/IEC 11572 or International Standard ISO/IEC 11572	ETS 300 172
DIS 11574 or ISO/IEC 11574	ETS 300 171 [10]
DIS 11579 or ISO/IEC 11579	ETS 300 475-1 [14]
NOTE:	This replacement should be made through out the text except in table 20, where the term "CCITT Q.931" is used to describe the protocol discriminator coding.

Throughout the text of ISO/IEC 11572

Throughout the text of ISO/IEC 11572, replace the term "International Standard" by "ETS".

Subclause 4.10

Replace the text "clauses 9.3 and 10" by "clauses 9.3 and 10, and annex ZA".

Subclause 4.12

Insert the following new subclause after subclause 4.12:

4.13 Signalling Carriage Mechanism (SCM)

The infrastructure that transports messages between Protocol Control entities in two interconnected PINXs.

Subclause 9.1.1

Replace the text "general procedures in 9.2 and 9.3" by "general procedures in subclauses 9.2 and 9.3 and annex ZA".

Subclause 9.2.7.1

Replace the text "(refer to Table 22" by "(refer to Tables 22 and 34".

Subclause 10.5.1

In item (c), replace the text "Calling/Connected Line Identification Restriction" by "Calling/Connected Line Identification Restriction (see ETS 300 173 [11])".

Subclause 10.6.4

In the second paragraph, replace the text "Calling/Connected Line Identification Restriction" by "Calling/Connected Line Identification Restriction (see ETS 300 173 [11])".

Subclause 10.7.6

In the last paragraph of 10.7.6, replace the words "no connected number or subaddress information other than the presentation indicator shall be presented to the other network." by "presentation of the number to the other network is outside the scope of this ETS, but will depend on such factors as the other network's commitment to honour the restriction.".

Clause 12, table 4

Replace the text of note 5 (beginning "Timers T301") to table 4 by:

"NOTE 5: The value of this timer is implementation dependent and shall be equal to, or greater than, 30 seconds. In the case of operation of certain call handling supplementary services in a PISN, the receipt of an ALERTING or CONNECT message may be delayed significantly beyond that expected for a normal call. In order to ensure that unnecessary failure of these services can be avoided, it is recommended that T310 be given a value of at least 110 seconds."

Clause 14

Replace the second paragraph by:

Whenever a message is sent, according to the procedures of clauses 9, 10 and 11, it shall be coded as specified in this clause, except where the message is segmented according to the procedures of annex ZA, in which case each message segment shall be coded as specified in that annex.

Subclause 14.4, table 21

Modify table 21 (continued) as follows:

Table 21: Message type (continued)

Bits								
8	7	6	5	4	3	2	1	
			0	1	1	0	1	RELEASE
			1	1	0	1	0	RELEASE COMPLETE
			0	0	1	1	0	RESTART
			0	1	1	1	0	RESTART ACKNOWLEDGE
0	1	1						Miscellaneous messages
			0	0	0	0	0	SEGMENT (note 2)
			1	1	0	1	1	INFORMATION
			1	1	1	0	1	STATUS
			1	0	1	0	1	STATUS ENQUIRY
NOTE 1:								The handling of national/private messages is outside the scope of this ETS (see annex D).
NOTE 2:								<u>This message type is only used in conjunction with the message segmentation and re-assembly procedures defined in annex ZA.</u>

Subclause 14.5.1, table 22

Modify table 22 by inserting a new row before the row for bearer capability, as follows:

<u>0 0 0 0 0 0 0 0</u>	<u>Segmented message</u>	<u>annex ZA</u>	<u>note 1</u>
<u>0 0 0 0 0 1 0 0</u>	<u>Bearer capability</u>	<u>14.5.5</u>	<u>11</u>

Subclause 14.5.2

Replace the 8th paragraph by:

Codeset 4 is used for ISO defined information elements. Codeset 5 is used by ETSI for information elements that are defined in addition to those defined by ITU-T or ISO. The rules for handling information elements of codeset 0 apply to codesets 4 and 5 too. See also subclause 14.6.

Subclause 14.5.3, table 23

Modify table 23 as follows:

Table 23: Locking/non-locking shift element

<u>Codeset identification</u>			
Bits			
3	2	1	
0	0	0	Codeset 0: CCITT Q.931 information elements (initially active codeset)
1	0	0	Codeset 4: Information elements defined by ISO
<u>1</u>	<u>0</u>	<u>1</u>	<u>Codeset 5: Information elements defined by ETSI</u>
1	1	0	Codeset 6: Information elements specific to the local network (public or private)
1	1	1	Codeset 7: User-specific information elements

All other values are reserved (note 1)
 NOTE 1: The handling of national/private information elements is outside the scope of this ETS (see annex D).

Subclause 14.5.5, table 24

Modify the coding of the Information transfer capability (octet 3) in table 24 as follows:

<u>Information transfer capability (octet 3)</u>					
Bits					
5	4	3	2	1	
0	0	0	0	0	Speech
0	1	0	0	0	Unrestricted digital information
0	1	0	0	1	Restricted digital information (applicable only in interworking situations)
1	0	0	0	0	3,1 kHz audio
<u>1</u>	<u>0</u>	<u>0</u>	<u>0</u>	<u>1</u>	<u>Unrestricted digital information with tones / announcements</u>

All other values are reserved.

Subclauses 14.5.8 and 14.5.10

In subclauses 14.5.8 and 14.5.10:

Add a note at the end of the first paragraph:

NOTE 1: For the definition of subaddress, see ETS 300 189 [12].

Renumber the existing note to be NOTE 2.

Subclause 14.5.12

Replace the text of NOTE 2 by:

NOTE 2: Channel number shall be used unless there is a bilateral agreement to use channel map.

Subclause 14.5.14

In subclause 14.5.14, add a note at the end of the first paragraph:

NOTE 1: For the definition of subaddress, see ETS 300 189 [12].

Renumber the existing note to be NOTE 2.

Subclause 14.5.17, table 32

In table 32, following the first occurrence (i.e., in relation to the codepoints for the Coding standard, octet 3) of the words "All other values are reserved", add the words "(note 5)".

In table 32, following the words "Progress description (octet 4)", add (as underlined text) the words "NOTE 5".

In table 32, following the third occurrence (i.e., in relation to the codepoints for the Progress description, octet 4) of the words "All other values are reserved", add the words "(note 5)".

In the notes at the end of table 32, add a new note:

NOTE 5: Additional progress descriptions are specified in annex ZC.

Subclause 14.5.19

Insert the following new subclauses after subclause 14.5.19:

14.6 Information elements of codeset 4

Codeset 4 contains information elements defined by ISO/IEC.

In general the coding rules described in subclause 14.5.1 for codeset 0 apply to codeset 4 also.

Table 34 lists the information element identifiers for information elements of codeset 4 used in this ETS.

Table 34: Information element Identifier coding (Codeset 4)

Coding								Ref.	Length
8	7	6	5	4	3	2	1		
1	:	:	:	-	-	-	-	Single Octet information elements:	
	0	0	0	-	-	-	-	Reserved	
	0	0	1	-	-	-	-	Shift	14.5.3
0	:	:	:	:	:	:	:	Variable length information elements:	
	0	1	1	0	0	0	1	Transit counter	annex ZB
All other values are reserved.									

14.7 Information elements of codeset 5

Codeset 5 contains information elements defined by ETSI.

In general the coding rules described in subclause 14.5.1 for codeset 0 apply to codeset 5 also.

Table 35 lists the information element identifiers for information elements of codeset 5 used in this ETS.

Table 35: Information element Identifier coding (Codeset 5)

Coding								Ref.	Length
8	7	6	5	4	3	2	1		
1	:	:	:	-	-	-	-	14.5.3	1
0	0	0	-	-	-	-	Reserved		
0	0	1	-	-	-	-	Shift		
0	:	:	:	:	:	:	:	annex ZD	3
0	1	1	0	0	1	0	Party category		
All other values are reserved.									

Annex A, subclause A.4.1

Insert a new row at the end of the PICS proforma table in subclause A.4.1, as follows:

Z4	Support of the unrestricted digital information with tones / announcements bearer	14.5.5	o		Yes [] No []
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Annex A (end of)

Insert the following new subclauses at the end of annex A:

A.4.12 Message segmentation / re-assembly procedures

Item	Question/feature	Reference	Status	N/A	Support
K1	Maximum message size generated	ZA.3	m		Size []
K2	Maximum message size received	ZA.3	m		Size []
K3	Is length of signalling carriage mechanism information field < max. generated message size	ZA.3	o		Yes [] No []
K4	Is length of signalling carriage mechanism information field < max. received message size	ZA.3	o		Yes [] No []
K5	Procedures for messages segmentation	ZA.3.1	c.12		Yes []
K6	Procedures for messages re-assembly	ZA.3.2	c.13	[]	Yes []
K7	Message formats and codings for segmented messages and information elements supported	ZA.4, ZA.5	c.14	[]	Yes []
K8	Implementation of T314	ZA.6	c.13	[]	Yes []

- c.12 If K3, then mandatory else, prohibited
c.13 If K4, then mandatory else, not applicable
c.14 If K3 or K4, then mandatory else, not applicable

A.4.13 Transit counter functionality

Item	Question/feature	Reference	Status	N/A	Support
L1	Transit counter functionality	ZB.2	o		Yes [] No []
L2	Behaviour as Originating PINX for Transit counter functionality	ZB.2.3.1	c.15	[]	Yes []
L3	Behaviour as Incoming Gateway PINX for Transit counter functionality	ZB.2.3.4	c.16	[]	Yes []
L4	Behaviour as Transit PINX for Transit counter functionality	ZB.2.3.3	c.17	[]	Yes []
L5	Behaviour as Terminating PINX for Transit counter functionality	ZB.2.3.2	c.18	[]	Yes []
L6	Behaviour as Outgoing Gateway PINX for Transit counter functionality	ZB.2.3.5	c.19	[]	Yes []
L7	Sending of a Transit counter information element in a SETUP message	ZB.2.3	c.20	[]	Yes [] No []

- c.15 If B1 and L1 then mandatory else, not applicable
c.16 If B2 and L1 then mandatory else, not applicable
c.17 If B3 and L1 then mandatory else, not applicable
c.18 If B4 and L1 then mandatory else, not applicable

- c.19 If B5 and L1 then mandatory else, not applicable
 c.20 If L2 or L3 or L4 then optional else, not applicable

A.4.14 Additional progress descriptions

Item	Question/feature	Reference	Status	N/A	Support
M1	Up to three Progress indicator information elements within the same message	annex ZC	m		Yes []
M2	Additional progress descriptions	annex ZC	m		Yes []

A.4.15 Party category functionality

Item	Question/feature	Reference	Status	N/A	Support
N1	Party category functionality	ZD.2	o		Yes [] No []
N2	Behaviour as Originating PINX for Party category functionality	ZD.2.3.1	c.21	[]	Yes []
N3	Behaviour as Incoming Gateway PINX for Party category functionality	ZD.2.4.1	c.22	[]	Yes []
N4	Behaviour as Transit PINX for Party category functionality	ZD.2.3.3	c.23	[]	Yes []
N5	Behaviour as Terminating PINX for Party category functionality	ZD.2.3.2	c.24	[]	Yes []
N6	Behaviour as Outgoing Gateway PINX for Party category functionality	ZD.2.4.2	c.25	[]	Yes []
N7	Sending of a Party category information element in a SETUP message	ZD.2.3, ZD.2.4	c.26	[]	Yes [] No []
N8	Sending of a Party category information element in an ALERTING message	ZD.2.3, ZD.2.4	c.27	[]	Yes [] No []
N9	Sending of a Party category information element in a CONNECT message	ZD.2.3, ZD.2.4	c.27	[]	Yes [] No []

- c.21 If B1 and N1 then mandatory else, not applicable
 c.22 If B2 and N1 then mandatory else, not applicable
 c.23 If B3 and N1 then mandatory else, not applicable
 c.24 If B4 and N1 then mandatory else, not applicable
 c.25 If B5 and N1 then mandatory else, not applicable
 c.26 If N2 or N3 or N4 then optional else, not applicable
 c.27 If N4 or N5 or N6 then optional else, not applicable

Annex G

Add the following bibliographic reference to annex G:

- [3bis] CCITT Recommendation Q.931 (1988): "ISDN user-network interface layer 3 specification for basic call control" (Blue Book, Volume VI, Fascicle VI.11).

Add the following new annex ZA:

Annex ZA (normative): Message segmentation / re-assembly procedures

ZA.1 Message segmentation and re-assembly functions

Message segmentation and re-assembly functions shall be employed where the size of a message exceeds the maximum size of the SCM information field.

The architectural relationship of segmentation and re-assembly functions to other Protocol Control functions is shown in figure ZA.1.

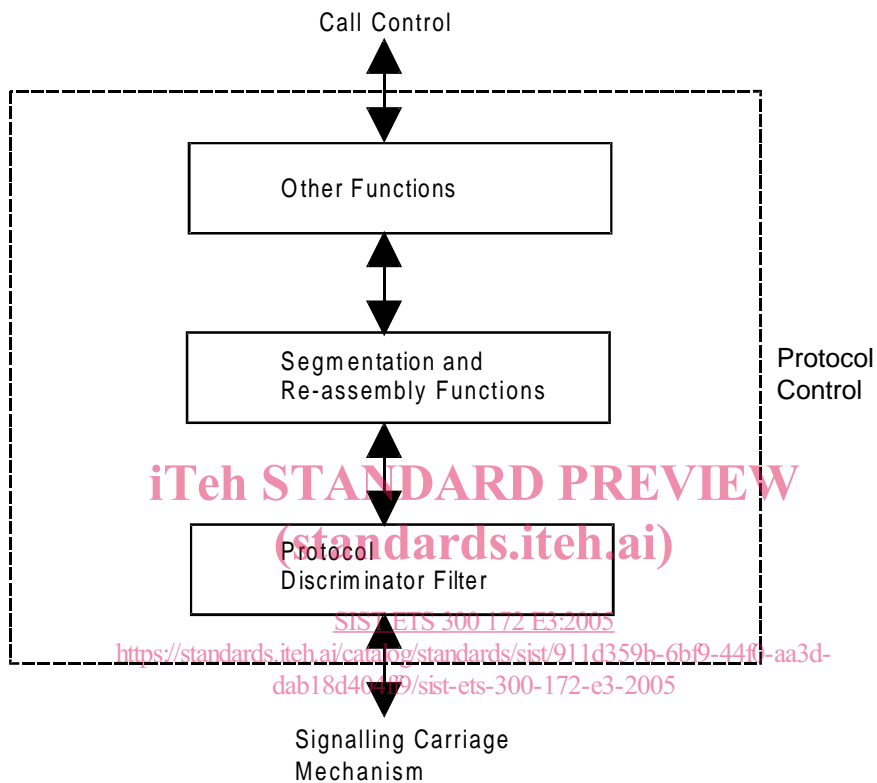


Figure ZA.1: Logical architecture of Protocol Control showing segmentation and re-assembly functions

Segmentation and re-assembly, where provided, effectively constitute a lower sublayer of Protocol Control.

NOTE: The only function of Protocol Control below the segmentation and re-assembly functions is protocol discriminator filtering. This function filters out messages containing a protocol discriminator that does not match the one specified in this ETS.

The primitives across the boundary between segmentation and re-assembly functions and other functions are the same as those between the Signalling Carriage Mechanism and Protocol Control (see subclause 6.3). The segmentation functions act upon DL-DATA-REQUEST primitives by converting, where necessary, a single primitive into two or more primitives before passing to the Signalling Carriage Mechanism. The re-assembly functions act upon DL-DATA-INDICATION primitives from the Signalling Carriage Mechanism by converting, where necessary, two or more primitives into a single primitive for passing up to the other functions of Protocol Control. Other primitives to and from the Signalling Carriage Mechanism are not affected by the segmentation and re-assembly functions.

ZA.2 States for message segmentation / re-assembly

Message segmentation and re-assembly procedures are each specified in terms of a state machine. Message segmentation uses a single state, Null (0). Message re-assembly uses two states, as listed below.