



SLOVENSKI STANDARD
SIST ETS 300 396-8-1 E1:2003
01-december-2003

Df]nYa b]gbc dc j b]fUX]c`fH9HF5Ł!`HY b] bY`nU hYj Y`nU`bYdcgfYXbc`cVfUrcj Ub^Y
 f8 ACŁ!, "XY.`n^Uj Uc`g`UXbcgh]`nj YXVY`dfc`c`UfD=7 GŁ!`DfcZ`fa U
 gdYWZ`UW^U!`%`dcXXY.`FUX]`g`j] a Ygb]`f5`Ł`a YX`a cV]`b]a UdcghU`a UfA G!A GŁ

Terrestrial Trunked Radio (TETRA); Technical requirements for Direct Mode Operation (DMO); Part 8: Protocol Implementation Conformance Statement (PICS) proforma specification; Sub-part 1: Mobile Station to Mobile Station (MS-MS) Air Interface (AI)

iTeh STANDARD PREVIEW
(standards.iteh.ai)

<https://standards.iteh.ai/catalog/standards/sist/89964e08-20cf-4a8c-ab01-98371ea802ae/sist-ets-300-396-8-1-e1-2003>

Ta slovenski standard je istoveten z: ETS 300 396-8-1 Edition 1

ICS:

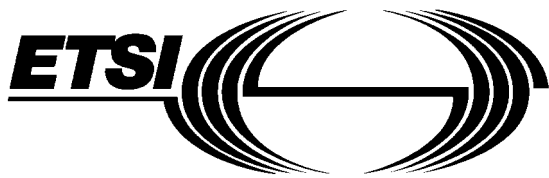
33.070.10	Prizemni snopovni radio (TETRA)	Terrestrial Trunked Radio (TETRA)
-----------	---------------------------------	-----------------------------------

SIST ETS 300 396-8-1 E1:2003 **en**

iTeh STANDARD PREVIEW
(standards.iteh.ai)

[SIST ETS 300 396-8-1 E1:2003](https://standards.iteh.ai/catalog/standards/sist/89964e08-20cf-4a8c-ab01-98371ea802ae/sist-ets-300-396-8-1-e1-2003)

<https://standards.iteh.ai/catalog/standards/sist/89964e08-20cf-4a8c-ab01-98371ea802ae/sist-ets-300-396-8-1-e1-2003>



EUROPEAN
TELECOMMUNICATION
STANDARD

ETS 300 396-8-1

January 2000

Source: TETRA

Reference: DE/TETRA-02007-8-1

ICS: 33.020

Key words: ICS, PICS, DMO, MS, TETRA, radio

**Terrestrial Trunked Radio (TETRA);
Technical requirements for Direct Mode Operation (DMO);
Part 8: Protocol Implementation Conformance Statement (PICS)
proforma specification;
Sub-part 1: Mobile Station to Mobile Station (MS-MS)
Air Interface (AI)**

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

Internet: secretariat@etsi.fr - <http://www.etsi.org>

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

Copyright Notification: No part may be reproduced except as authorized by written permission. The copyright and the foregoing restriction extend to reproduction in all media.

© European Telecommunications Standards Institute 2000. All rights reserved.

iTeh STANDARD PREVIEW (standards.iteh.ai)

[SIST ETS 300 396-8-1 E1:2003](https://standards.iteh.ai/catalog/standards/sist/89964e08-20cf-4a8c-ab01-98371ea802ae/sist-ets-300-396-8-1-e1-2003)

<https://standards.iteh.ai/catalog/standards/sist/89964e08-20cf-4a8c-ab01-98371ea802ae/sist-ets-300-396-8-1-e1-2003>

Contents

Foreword.....	5
Introduction	5
1 Scope	7
2 Normative references	7
3 Definitions and abbreviations	7
3.1 Definitions	7
3.2 Abbreviations	8
4 Conformance to this Protocol Implementation Conformance Statement (PICS) proforma specification.....	8
Annex A (normative): Protocol ICS proforma (PICS) for ETS 300 396-3.....	9
A.1 Guidance for completing the PICS proforma	9
A.1.1 Purposes and structure.....	9
A.1.2 Abbreviations and conventions	9
A.1.3 Instructions for completing the PICS proforma	11
A.2 Identification of the implementation.....	11
A.2.1 Date of the statement.....	11
A.2.2 IUT identification	11
A.2.3 SUT identification	11
A.2.4 Product supplier	12
A.2.5 Client (if different from product supplier).....	12
A.2.6 PICS contact person	12
A.3 Identification of the protocol	13
A.4 Global statement of conformance	13
A.5 DMCC at layer 3.....	13
A.5.1 DMCC major capabilities	13
A.5.2 Circuit mode call	13
A.5.3 Circuit mode call set-up	14
A.5.4 Circuit mode services offered	15
A.5.5 Short data services	15
A.5.6 Type of short data service.....	16
A.5.7 Data transmission	17
A.5.8 SDS user defined data.....	17
A.5.9 DMCC PDUs	18
A.5.10 DMCC PDU parameters	19
A.5.10.1 DM-SETUP.....	20
A.5.10.2 DM-SETUP PRES.....	20
A.5.10.3 DM-CONNECT	21
A.5.10.4 DM-DISCONNECT	21
A.5.10.5 DM-CONNECT ACK	21
A.5.10.6 DM-OCCUPIED	22
A.5.10.7 DM-RELEASE	22
A.5.10.8 DM-TX CEASED	22
A.5.10.9 DM-TX REQUEST.....	23
A.5.10.10 DM-TX ACCEPT	23
A.5.10.11 DM-PREEMPT	23

	A.5.10.12	DM-PRE ACCEPT	23
	A.5.10.13	DM-REJECT	24
	A.5.10.14	DM-INFO.....	24
	A.5.10.15	DM-SDS UDATA.....	24
	A.5.10.16	DM-SDS DATA	25
	A.5.10.17	DM-SDS ACK	26
A.5.11		DMCC constants	26
A.5.12		DMCC timers.....	27
A.6		DLL at layer 2.....	27
A.6.1		DM-Medium Access Control (MAC) features	27
A.6.2		DM-MAC procedures.....	28
A.6.3		DM-MAC PDUs	33
A.6.4		DM-MAC PDU parameters.....	33
	A.6.4.1	DMAC-SYNC in Signalling Channel (SCH)/S	34
	A.6.4.2	DMAC-SYNC in SCH/H	34
	A.6.4.3	DMAC-DATA.....	35
	A.6.4.4	DMAC-FRAG	35
	A.6.4.5	DMAC-END.....	35
	A.6.4.6	DMAC-U SIGNAL	35
A.6.5		DM-MAC generated messages	36
A.6.6		DM-MAC generated message parameters	36
	A.6.6.1	DM-RESERVED	36
	A.6.6.2	DM-SDS OCCUPIED.....	36
	A.6.6.3	DM-TIMING REQUEST	37
	A.6.6.4	DM-TIMING ACK	37
A.6.7		DM-MAC constants	37
A.6.8		DM-MAC timers	39
History		40

iTeH STANDARD PREVIEW
(standards.iteh.ai)

[SIST ETS 300 396-8-1 E1:2003](https://standards.iteh.ai/catalog/standards/sist/89964e08-20cf-4a8c-ab01-98371ea802ae/sist-ets-300-396-8-1-e1-2003)

<https://standards.iteh.ai/catalog/standards/sist/89964e08-20cf-4a8c-ab01-98371ea802ae/sist-ets-300-396-8-1-e1-2003>

Foreword

This European Telecommunication Standard (ETS) has been produced by the Terrestrial Trunked Radio (TETRA) Project of the European Telecommunications Standards Institute (ETSI).

The present document is part 8 of a multi-part ETS covering the Direct Mode Operation (DMO) of TETRA, as identified below:

- Part 1: "General network design";
- Part 2: "Radio aspects";
- Part 3: "Mobile Station to Mobile Station (MS-MS) Air Interface (AI) protocol";
- Part 4: "Type 1 repeater air interface";
- Part 5: "Gateway air interface";
- Part 6: "Security";
- Part 7: "Type 2 repeater air interface";
- Part 8: "Protocol Implementation Conformance Statement (PICS) proforma specification";**
- Part 9: "Service and Description Language (SDL) model";
- Part 10: "Managed Direct Mode Operation (DMO)".

iTeh STANDARD PREVIEW

(standard) Transposition dates	
Date of adoption of this ETS:	31 December 1999
Date of latest announcement of this ETS (doa):	31 March 2000
Date of latest publication of new National Standard or endorsement of this ETS (dop/e):	30 September 2000
Date of withdrawal of any conflicting National Standard (dow):	30 September 2000

Introduction

To evaluate conformance of a particular implementation, it is necessary to have a statement of which capabilities and options have been implemented for a telecommunication specification. Such a statement is called an Implementation Conformance Statement (ICS).

Blank page

iTeh STANDARD PREVIEW
(standards.iteh.ai)

[SIST ETS 300 396-8-1 E1:2003](https://standards.iteh.ai/catalog/standards/sist/89964e08-20cf-4a8c-ab01-98371ea802ae/sist-ets-300-396-8-1-e1-2003)

<https://standards.iteh.ai/catalog/standards/sist/89964e08-20cf-4a8c-ab01-98371ea802ae/sist-ets-300-396-8-1-e1-2003>

1 Scope

This European Telecommunication Standard (ETS) provides the Protocol Implementation Conformance Statement (PICS) proforma for the TETRA Direct Mode Operation (DMO), Mobile Station to Mobile Station (MS-MS) Air Interface (AI) protocol, defined in ETS 300 396-3 [1] in compliance with the relevant requirements, and in accordance with the relevant guidance given in ISO/IEC 9646-7 [4] and ETS 300 406 [2].

2 Normative references

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.

- [1] ETS 300 396-3 (1998): "Terrestrial Trunked Radio (TETRA); Technical requirements for Direct Mode Operation (DMO); Part 3: Mobile Station to Mobile Station (MS-MS) Air Interface (AI) protocol".
- [2] ETS 300 406 (1995): "Methods for Testing and Specification (MTS); Protocol and profile conformance testing specifications; Standardization methodology".
- [3] ISO/IEC 9646-1 (1994): "Information technology; Open systems interconnection; Conformance testing methodology and framework; Part 1: General concepts".
- [4] ISO/IEC 9646-7 (1995): "Information technology; Open Systems Interconnection; Conformance testing methodology and framework; Part 7: Implementation Conformance Statements".

3 Definitions and abbreviations

3.1 Definitions

[SIST ETS 300 396-8-1 E1:2003](https://standards.iteh.ai/catalog/standards/sist/89964e08-20cf-4a8c-ab01-98371ea802ae/sist-ets-300-396-8-1-e1-2003)

<https://standards.iteh.ai/catalog/standards/sist/89964e08-20cf-4a8c-ab01-98371ea802ae/sist-ets-300-396-8-1-e1-2003>

For the purposes of this ETS, the following definitions apply:

- terms defined in ETS 300 396-3 [1];
- terms defined in ISO/IEC 9646-1 [3] and in ISO/IEC 9646-7 [4].

In particular, the following terms defined in ISO/IEC 9646-1 [3] apply:

Implementation Conformance Statement (ICS): statement made by the supplier of an implementation or system claimed to conform to a given specification, stating which capabilities have been implemented. The ICS can take several forms: protocol ICS, profile ICS, profile specific ICS, information object ICS, etc.

ICS proforma: document, in the form of a questionnaire, which when completed for an implementation or system becomes an ICS

Protocol ICS (PICS): ICS for an implementation or system claimed to conform to a given protocol specification

3.2 Abbreviations

For the purposes of this ETS, the following abbreviations apply:

AI	Air Interface
DLL	Data Link Layer
DM	Direct Mode
DMCC	Direct Mode Call Control
DMO	Direct Mode Operation
FCS	Frame Check Sequence
ICS	Implementation Conformance Statement
IUT	Implementation Under Test
LCH	Linearization Channel
MAC	Medium Access Control
OTAR	Over The Air Re-keying
PDU	Protocol Data Unit
PICS	Protocol Implementation Conformance Statement
SCH	Signalling Channel
SCS	System Conformance Statement
SDS	Short Data Service
SDU	Service Data Unit
SUT	System Under Test
TPNI	Transmitting Party Number Identification
TSI	TETRA Subscriber Identity

4 Conformance to this Protocol Implementation Conformance Statement (PICS) proforma specification

If it claims to conform to this ETS, the actual PICS proforma to be filled in by a supplier shall be technically equivalent to the text of the PICS proforma given in annex A, and shall preserve the numbering/naming and ordering of the proforma items.

A PICS which conforms to this ETS shall be a conforming PICS proforma completed in accordance with the guidance for completion given in clause A.1.

Annex A (normative): Protocol ICS proforma (PICS) for ETS 300 396-3

Notwithstanding the provisions of the copyright clause related to the text of this ETS, ETSI grants that users of this ETS may freely reproduce the PICS proforma in this annex so that it can be used for its intended purposes and may further publish the completed PICS.

A.1 Guidance for completing the PICS proforma**A.1.1 Purposes and structure**

The purpose of this PICS proforma is to provide a mechanism whereby a supplier of an implementation of the requirements defined in ETS 300 396-3 may provide information about the implementation in a standardized manner.

The PICS proforma is subdivided into subclauses for the following categories of information:

- guidance for completing the PICS proforma;
- identification of the implementation;
- identification of the protocol;
- global statement of conformance;
- Direct Mode Call Control (DMCC) protocol layer 3 part:
 - circuit mode calls;
 - short data service;
- Data Link Layer (DLL) protocol layer 2 part.

A.1.2 Abbreviations and conventions

The PICS proforma contained in this annex is comprised of information in tabular form in accordance with the guidelines presented in ISO/IEC 9646-7.

Item column

The item column contains a number which identifies the item in the table.

Item description column

The item description column describes in free text each respective item (e.g. parameters, timers, etc.). It implicitly means "is <item description> supported by the implementation?".

Status column

The following notations, defined in ISO/IEC 9646-7, are used for the status column:

m	mandatory - the capability is required to be supported;
o	optional - the capability may be supported or not;
n/a	not applicable - in the given context, it is impossible to use the capability;
x	prohibited (excluded) - there is a requirement not to use this capability in the given context;
o.i	qualified optional - for mutually exclusive or selectable options from a set. "i" is an integer which identifies an unique group of related optional items and the logic of their selection which is defined immediately following the table;

ci conditional - the requirement on the capability ("m", "o", "x" or "n/a") depends on the support of other optional or conditional items. "i" is an integer identifying a unique conditional status expression which is defined immediately following the table.

Reference column

The reference column makes reference to ETS 300 396-3, except where explicitly stated otherwise.

Support column

The support column shall be filled in by the supplier of the implementation. The following common notations, defined in ISO/IEC 9646-7, are used for the support column:

Y or y	supported by the implementation;
N or n	not supported by the implementation;
N/A, n/a or -	no answer required (allowed only if the status is n/a, directly or after evaluation of a conditional status).

If this PICS proforma is completed in order to describe a multiple-profile support in a system, it is necessary to be able to answer that a capability is supported for one profile and not supported for another. In that case, the supplier shall enter the unique reference to a conditional expression, preceded by "?" (e.g. ?3). This expression shall be given in the space for comments provided at the bottom of the table. It uses predicates defined in the System Conformance Statement (SCS), each of which refers to a single profile and which takes the value TRUE if and only if that profile is to be used.

EXAMPLE 1: ?3: IF prof1 THEN Y ELSE N

It is also possible to provide a comment to an answer in the space provided at the bottom of the table.

NOTE: As stated in ISO/IEC 9646-7, support for a received Protocol Data Unit (PDU) requires the ability to parse all valid parameters of that PDU. Supporting a PDU while having no ability to parse a valid parameter is non-conformant. Support for a parameter on a PDU means that the semantics of that parameter is supported.

Values allowed column

The values allowed column contains the type, the list, the range, or the length of values allowed. The following notations are used:

- range of values: <min value> ... <max. value>
example: 5 ... 20
- list of values: <value1>, <value2>,, <valueN>
example: 2, 4, 6, 8, 9
example: '1101'B, '1011'B, '1111'B
example: '0A'H, '34'H, '2F'H
- list of named values: <name1>(<val1>), <name2>(<val2>), ..., <nameN>(<valN>)
example: reject(1), accept(2)
- length: size (<min size> ... <max size>)
example: size (1 ... 8)

Values supported column

The values supported column shall be filled in by the supplier of the implementation. In this column, the values or the ranges of values supported by the implementation shall be indicated.

References to items

For each possible item answer (answer in the support column) within the PICS proforma a unique reference exists, used, for example, in the conditional expressions. It is defined as the table identifier, followed by a solidus character "/", followed by the item number in the table. If there is more than one support column in a table, the columns are discriminated by letters (a, b, etc.), respectively.

EXAMPLE 2: A.5/4 is the reference to the answer of item 4 in table 5 of annex A.

EXAMPLE 3: A.6/3b is the reference to the second answer (i.e. in the second support column) of item 3 in table 6 of annex A.

Prerequisite line

A prerequisite line takes the form: Prerequisite: <predicate>.

A prerequisite line after a clause or table title indicates that the whole clause or the whole table is not required to be completed if the predicate is FALSE.

A.1.3 Instructions for completing the PICS proforma

The supplier of the implementation shall complete the PICS proforma in each of the spaces provided. In particular, an explicit answer shall be entered, in each of the support or supported column boxes provided, using the notation described in subclause A.1.2.

If necessary, the supplier may provide additional comments in space at the bottom of the tables, or separately on sheets of paper.

More detailed instructions are given at the beginning of the different subclauses of the PICS proforma.

A.2 Identification of the implementation

Identification of the Implementation Under Test (IUT) and the system in which it resides (the System Under Test (SUT)) should be filled in so as to provide as much detail as possible regarding version numbers and configuration options.

The product supplier information and client information should both be filled in if they are different.

A person who can answer queries regarding information supplied in the PICS should be named as the contact person.

A.2.1 Date of the statement

A.2.2 IUT identification

IUT name:

.....

IUT version:

A.2.3 SUT identification

SUT name:

.....

Hardware configuration:

.....

.....