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Intelligent transport systems — Cooperative ITS — Test requirements and protocol implementation conformance statement (PICS) pro forma for ISO/TS 17426

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Foreword

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The procedures used to develop this document and those intended for its further maintenance are described in the ISO/IEC Directives, Part 1. In particular, the different approval criteria needed for the different types of ISO documents should be noted. This document was drafted in accordance with the editorial rules of the ISO/IEC Directives, Part 2 (see www.iso.org/directives).

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Any trade name used in this document is information given for the convenience of users and does not constitute an endorsement.

For an explanation of the voluntary nature of standards, the meaning of ISO specific terms and expressions related to conformity assessment, as well as information about ISO's adherence to the World Trade Organization (WTO) principles in the Technical Barriers to Trade (TBT) see www.iso.org/iso/foreword.html.

This document was prepared by Technical Committee ISO/TC 204, *Intelligent transport systems*.

Any feedback or questions on this document should be directed to the user's national standards body. A complete listing of these bodies can be found at www.iso.org/members.html.

Introduction

The harmonized deployment of Cooperative ITS is expected to improve road safety, support traffic management, and reduce greenhouse gas emissions. Delivering Contextual Speed information to road users is a key component of this development.

The purpose of this document is to provide a mechanism whereby a supplier of an implementation of the requirements defined in ISO/TS 17426 may provide information about the implementation in a standardized manner.

According to ISO/TS 20026 and ETSI EG 202 798 V1.1.1 (2011-01), three deliverables should be developed to produce a complete set of Conformance Test Specifications for the Contextual Speed Information Service as defined in ISO/TS 17426:2016:

— Test requirements and Protocol Implementation Conformance Statement (PICS) pro forma;

— Test Suite Structure and Test Purposes (TSS & TP);

— Abstract Test Suite (ATS) and partial Protocol Implementation eXtra Information for Testing (PIXIT) pro forma.

This document catalogues the Contextual Speed Information Service testable requirements, enabling to draft "Test Suite Structure and Test Purposes (TSS & TP)“ and "Abstract Test Suite (ATS) and partial Protocol Implementation eXtra Information for Testing (PIXIT) pro forma” deliverables.

The two last deliverables are however out of the scope of this document.

Intelligent transport systems — Cooperative ITS — Test requirements and protocol implementation conformance statement (PICS) pro forma for ISO/TS 17426

1 Scope

This document provides the Protocol Implementation Conformance Statement (PICS) pro forma for conformance test specification for the Contextual Speed Information Service as defined in ISO/TS 17426:2016 in accordance with the relevant requirements and in accordance with the relevant guidance given in ISO/IEC 9646-7.

2 Normative references

The following documents are referred to in the text in such a way that some or all of their content constitutes requirements of this document. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

ISO/IEC 9646-1, *Information technology — Open Systems Interconnection — Conformance testing methodology and framework — Part 1: General concepts*

ISO/IEC 9646-7, *Information technology — Open Systems Interconnection — Conformance testing methodology and framework — Part 7: Implementation Conformance Statements*

ISO/TS 17426:2016, *Intelligent transport systems — Cooperative systems — Contextual speeds*

3 Terms and definitions

For the purposes of this document, the terms and definitions given in ISO/TS 17426:2016, ISO/IEC 9646-1 and ISO/IEC 9646-7 apply.

ISO and IEC maintain terminological databases for use in standardization at the following addresses:

— ISO Online browsing platform: available at http://www.iso.org/obp

— IEC Electropedia: available at http://www.electropedia.org/

4 Symbols and abbreviated terms

ADU	Application Data Unit
ATS	Abstract Test Suite
BSMD	Bounded Secured Managed Domain
C-ITS	Cooperative ITS
CSM	Contextual Speed Message
HMI	Human Machine Interface
ICT	Information Communications Technologies

ITS	Intelligent Transport Systems
ITS-AID	ITS Application Identifier
ITS-S	ITS Station
ITS-SCU	ITS-S Communication Unit
ITS-SU	ITS-S Unit
IUT	Implementation Under Test
LDM	Local Dynamic Map
n.a.	not applicable
OEM	Original Equipment Manufacturer
PDU	Protocol Data Unit
PICS	Protocol Implementation Conformance Statement
PIXIT	Protocol Implementation eXtra Information for Testing
SUT	System Under Test
TSS&TP	Test Suite Structure and Test Purposes

5 Conformance requirement concerning PICS

If it claims to conform to the present document, the actual PICS pro forma to be filled in by a supplier shall be technically equivalent to the text of the PICS pro forma given in Annex A, and shall preserve the numbering, naming and ordering of the pro forma items.

A PICS which conforms to the present document shall be a conforming PICS pro forma completed in accordance with the instructions for completion given in A.1.

Annex A
(normative)

Contextual Speeds PICS pro forma

Notwithstanding the provisions of the copyright claim related to the text of the present document, ISO grants that users of the present document may freely reproduce the PICS pro forma 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 pro forma

A.1.1 Purposes and structure

The purpose of this PICS pro forma is to provide a mechanism whereby a supplier of an implementation of the requirements defined in ISO/TS 17426:2016 may provide information about the implementation in a standardized manner.

The PICS pro forma is subdivided into clauses for the following categories of information:

— guidance for completing the PICS pro forma;

— identification of the implementation;

— identification of the protocol;

— global statement of conformance;

— detailed conformance statements.

A.1.2 Abbreviated terms and conventions

The PICS pro forma 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.

c.i 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 an unique conditional status expression which is defined immediately following the table.

i irrelevant (out-of-scope): capability outside the scope of the reference specification. No answer is requested from the supplier.

NOTE 1 This use of "i" status is not to be confused with the suffix "i" to the "o" and "c" statuses above.

Reference column:

The reference column makes reference to ISO/TS 17426:2016, 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).

NOTE 2 As stated in ISO/IEC 9646-7, support for a received 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 are 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 pro forma 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 1 A.5/4 is the reference to the answer of item 4 in Table 5 of Annex A.

EXAMPLE 2 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 pro forma

The supplier of the implementation shall complete the PICS pro forma in each of the spaces provided. In particular, an explicit answer shall be entered, in each of the support or supported column boxes provided.

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

More detailed instructions are given at the beginning of the different clauses of the PICS pro forma.

A.2 Identification of the implementation

A.2.1 Introduction

Identification of the Implementation Under Test (IUT) and the system in which it resides [the System Under Test (SUT)] shall 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 shall both be filled in if they are different.

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

A.2.2 Date of the statement

A.2.3 Implementation Under Test (IUT) identification

IUT name:

IUT version:

A.2.4 System Under Test (SUT) identification

SUT name:

Hardware configuration:

Operating system:

A.2.5 Product supplier

Name:

Address:

Telephone number:

Facsimile number:

E-mail address:

Additional information:

A.2.6 Client (if different from product supplier)

Name:

Address:

Telephone number: