



Technical Specification

**Intelligent Transport Systems (ITS);  
Test specifications for the methods to ensure coexistence  
of Cooperative ITS G5 with RTTT DSRC;  
Part 1: Protocol Implementation Conformance  
Statement (PICS)**

---

Reference

DTS/ITS-0040022

---

Keywords

DSRC, ITS, PICS, radio, RTTT

**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://portal.etsi.org/tb/status/status.asp>

If you find errors in the present document, please send your comment to one of the following services:

[http://portal.etsi.org/chaicor/ETSI\\_support.asp](http://portal.etsi.org/chaicor/ETSI_support.asp)

---

**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 2012.  
All rights reserved.

DECT™, PLUGTESTS™, UMTS™ and the ETSI logo are Trade Marks of ETSI registered for the benefit of its Members.  
3GPP™ and LTE™ are Trade Marks of ETSI registered for the benefit of its Members and  
of the 3GPP Organizational Partners.

GSM® and the GSM logo are Trade Marks registered and owned by the GSM Association.

---

# Contents

Intellectual Property Rights .....	4
Foreword.....	4
Introduction .....	4
1 Scope .....	5
2 References .....	5
2.1 Normative references .....	5
2.2 Informative references.....	5
3 Definitions and abbreviations.....	6
3.1 Definitions .....	6
3.2 Abbreviations .....	6
4 Conformance .....	6
<b>Annex A (normative): PICS proforma.....</b>	<b>7</b>
A.1 Guidance for completing the ICS proforma .....	7
A.1.1 Purposes and structure.....	7
A.1.2 Abbreviations and conventions .....	7
A.1.3 Instructions for completing the PICS proforma.....	8
A.2 Identification of the Network Equipment.....	9
A.2.1 Date of the statement .....	9
A.2.2 Network Equipment Under Test identification.....	9
A.2.3 Product supplier.....	9
A.2.4 Client .....	10
A.2.5 PICS contact person .....	10
A.3 Identification of the protocol.....	11
A.4 Global statement of conformance.....	11
A.5 PICS proforma tables .....	11
A.5.1 Roles.....	11
A.5.2 System Capabilities .....	11
History .....	12

---

## 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://ipr.etsi.org>).

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 Technical Specification (TS) has been produced by ETSI Technical Committee Intelligent Transport System (ITS).

The present document is part 1 of a multi-part deliverable covering the test specifications for the methods to ensure coexistence of cooperative ITS G5 with RTTT DSRC; Conformance Testing, as identified below:

**Part 1:** **"Protocol Implementation Conformance Statement (PICS)";**

Part 2: "Test Suite Structure and Test Purposes (TSS&TP)";

Part 3: "Abstract Test Suite (ATS) and partial Protocol Implementation eXtra Information for Testing (PIXIT)".

---

## Introduction

To evaluate protocol 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 a Protocol Implementation Conformance Statement (PICS).

---

# 1 Scope

The present document provides the Protocol Implementation Conformance Statement (PICS) proforma for the test specifications for the methods to ensure coexistence of cooperative ITS G5 with RTTT DSRC as specified in TS 102 792 [i.1] and ES 202 663 [1] in compliance with the relevant requirements and in accordance with the relevant guidance given in ISO/IEC 9646-7 [3] and ETS 300 406 [4].

The supplier of a protocol implementation which is claimed to conform to TS 102 792 [i.1] and ES 202 663 [1] is required to complete a copy of the PICS proforma provided in annex A of the present document and is required to provide the information necessary to identify both the supplier and the implementation.

---

# 2 References

References are either specific (identified by date of publication and/or edition number or version number) or non-specific. For specific references, only the cited version applies. For non-specific references, the latest version of the reference document (including any amendments) applies.

Referenced documents which are not found to be publicly available in the expected location might be found at <http://docbox.etsi.org/Reference>.

NOTE: While any hyperlinks included in this clause were valid at the time of publication, ETSI cannot guarantee their long term validity.

## 2.1 Normative references

The following referenced documents are necessary for the application of the present document.

- [1] ETSI ES 202 663: "Intelligent Transport Systems (ITS); European profile standard for the physical and medium access control layer of Intelligent Transport Systems operating in the 5 GHz frequency band".
- [2] ISO/IEC 9646-1: "Information technology -- Open Systems Interconnection -- Conformance testing methodology and framework -- Part 1: General concepts".
- [3] ISO/IEC 9646-7: "Information technology -- Open Systems Interconnection -- Conformance testing methodology and framework -- Part 7: Implementation Conformance Statements".
- [4] ETSI ETS 300 406: "Methods for testing and Specification (MTS); Protocol and profile conformance testing specifications; Standardization methodology".

## 2.2 Informative references

The following referenced documents are not necessary for the application of the present document but they assist the user with regard to a particular subject area.

- [i.1] ETSI TS 102 792: "Intelligent Transport Systems (ITS); Mitigation techniques to avoid interference between European CEN Dedicated Short Range Communication (RTTT DSRC) equipment and Intelligent Transport Systems (ITS) operating in the 5 GHz frequency range".

---

## 3 Definitions and abbreviations

### 3.1 Definitions

For the purposes of the present document, the terms and definitions given in TS 102 792 [i.1], ES 202 663 [1] and the following apply:

**PICS proforma:** document, in the form of a questionnaire, designed by the protocol specifier or conformance test suite specifier, which, when completed for an OSI implementation or system, becomes the PICS

NOTE: See ISO/IEC 9646-1 [2].

**Protocol Implementation Conformance Statement (PICS):** statement made by the supplier of an Open Systems Interconnection (OSI) implementation or system, stating which capabilities have been implemented for a given OSI protocol

NOTE: See ISO/IEC 9646-1 [2].

**static conformance review:** review of the extent to which the static conformance requirements are met by the IUT, accomplished by comparing the PICS with the static conformance requirements expressed in the relevant standard(s)

NOTE: See ISO/IEC 9646-1 [2].

### 3.2 Abbreviations

For the purposes of the present document, the abbreviations given in TS 102 792 [i.1], ES 202 663 [1] and the following apply:

ICS	Implementation Conformance Statement
OBU	On Board Unit
PDU	Protocol Data Unit
PICS	Protocol Implementation Conformance Statement
TX	Transmission

---

## 4 Conformance

A PICS proforma which conforms to this PICS proforma specification shall be technically equivalent to annex A, and shall preserve the numbering and ordering of the items in annex A.

A PICS which conforms to this PICS proforma specification shall:

- a) describe an implementation which claims to conform to TS 102 792 [i.1] and ES 202 663 [1];
- b) be a conforming ICS proforma which has been completed in accordance with the instructions for completion given in clause A.1;
- c) include the information necessary to uniquely identify both the supplier and the implementation.

---

## Annex A (normative): PICS proforma

Notwithstanding the provisions of the copyright clause related to the text of the present document, ETSI grants that users of the present document 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 proforma.
---

---

### A.1 Guidance for completing the ICS 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 relevant specifications may provide information about the implementation in a standardised manner.

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

- instructions for completing the PICS proforma;
- identification of the implementation;
- identification of the protocol;
- PICS proforma tables (for example: major capabilities, etc.).

#### A.1.2 Abbreviations and conventions

This annex does not reflect dynamic conformance requirements but static ones. In particular, a condition for support of a PDU parameter does not reflect requirements about the syntax of the PDU (i.e. the presence of a parameter) but the capability of the implementation to support the parameter.

In the sending direction, the support of a parameter means that the implementation is able to send this parameter (but it does not mean that the implementation always sends it).

In the receiving direction, it means that the implementation supports the whole semantic of the parameter that is described in the main part of this specification.

As a consequence, PDU parameter tables in this annex are not the same as the tables describing the syntax of a PDU in the reference specification.

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 [3].

##### 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?".

##### Reference column

The reference column gives reference to the relevant sections in core specifications.

## Status column

The various status used in this annex are in accordance with the rules in table A.1.

**Table A.1: Key to status codes**

Status code	Status name	Meaning
m	mandatory	The capability shall be supported. It is a static view of the fact that the conformance requirements related to the capability in the reference specification are mandatory requirements. This does not mean that a given behaviour shall always be observed (this would be a dynamic view), but that it shall be observed when the implementation is placed in conditions where the conformance requirements from the reference specification compel it to do so. For instance, if the support for a parameter in a sent PDU is mandatory, it does not mean that it shall always be present, but that it shall be present according to the description of the behaviour in the reference specification (dynamic conformance requirement).
o	optional	The capability may or may not be supported. It is an implementation choice.
n/a	not applicable	It is impossible to use the capability. No answer in the support column is required.
c.<integer>	conditional	The requirement on the capability ("m", "o", "n/a") depends on the support of other optional or conditional items. <integer> is the identifier of the conditional expression.
o.<integer>	qualified optional	For mutually exclusive or selectable options from a set. <integer> is the identifier of the group of options, and the logic of selection of the options.

## Mnemonic column

The Mnemonic column contains mnemonic identifiers for each item.

## 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 [3], 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)

## References to items

For each possible item answer (answer in the support column) within the PICS proforma there exists a unique reference, 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.

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

## A.1.3 Instructions for completing the PICS proforma

The supplier of the implementation may complete the PICS proforma in each of the spaces provided. More detailed instructions are given at the beginning of the different clauses of the PICS proforma.



---

## A.2 Identification of the Network Equipment

Identification of the Network Equipment 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 Network Equipment Under Test identification

Name:

.....  
 .....

Hardware configuration:

.....  
 .....  
 .....

Software configuration:

.....  
 .....  
 .....

### A.2.3 Product supplier

Name:

.....

Address:

.....  
 .....  
 .....

Telephone number:

.....

Facsimile number:

.....

E-mail address:

.....

Additional information:

.....  
.....  
.....

### A.2.4 Client

Name:

.....

Address:

.....  
.....  
.....

Telephone number:

.....

Facsimile number:

.....

E-mail address:

.....

Additional information:

.....  
.....  
.....

### A.2.5 PICS contact person

Name:

.....

Telephone number:

.....

Facsimile number:

.....

E-mail address:

.....

Additional information:

.....  
.....

## A.3 Identification of the protocol

This PICS proforma applies to the following specifications:

- TS 102 792 [i.1]; and
- ES 202 663 [1].

## A.4 Global statement of conformance

The implementation described in this PICS meets all the mandatory requirements of the referenced standard?

Yes

No

NOTE: Answering "No" to this question indicates non-conformance to the protocol specification. Non-supported mandatory capabilities are to be identified in the PICS, with an explanation of why the implementation is non-conforming. Explanations may be entered in the comments field at the bottom of each table or on attached pages.

## A.5 PICS proforma tables

### A.5.1 Roles

Table A.2: Roles

Item	Roles	Reference	Status	Support
1	Late response OBU		o.1	
2	Immediate response OBU		o.1	
3	Mode A OBU (operation of the OBU above sensitivity limit)		o.2	
4	Mode B OBU (operation of the OBU at the sensitivity limit)		o.2	

o.1, o.2: At least one of these capabilities shall be supported.

### A.5.2 System Capabilities

Table A.3: System Capabilities

Item	Major capability: Give the value for the ...	Status	Support	Value
1	Step size of interference TX power (in dBm)	m		
2	Interference pattern resolution (in degree)	m		
3	Initial T <sub>off</sub> value	m		
4	Step size for T <sub>off</sub> value	m		

---

## History

<b>Document history</b>		
V1.1.1	May 2012	Publication