

ETSI TS 102 871-2 V1.1.1 (2011-06)

Technical Specification

Intelligent Transport Systems (ITS); Testing; Conformance test specifications for GeoNetworking ITS-G5; Part 2: Test Suite Structure and Test Purposes (TSS&TP)

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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
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Foreword

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

The present document is part 2 of a multi-part deliverable covering Conformance test specification for Geonetworking ITS-G5 as identified below:

- Part 1: "Test requirements and Protocol Implementation Conformance Statement (PICS) proforma";
- Part 2: " Test Suite Structure and Test Purposes (TSS&TP)";**
- Part 3: "Abstract Test Suite (ATS) and Protocol Implementation eXtra Information for Testing (PIXIT)".

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1 Scope

The present document provides the Test Suite Structure and Test Purposes (TSS&TP) for Geonetworking ITS-G5 as defined in TS 102 636-4-1 [1] and TS 102 636-4-2 [i.1] in compliance with the relevant requirements and in accordance with the relevant guidance given in ISO/IEC 9646-7 [5].

The ISO standard for the methodology of conformance testing (ISO/IEC 9646-1 [2] and ISO/IEC 9646-2 [3]) as well as the ETSI rules for conformance testing (ETS 300 406 [6]) are used as a basis for the test methodology.

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 referenced 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>.

2.1 Normative references

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

- [1] ETSI TS 102 636-4-1 (V1.1.1): "Intelligent Transport System (ITS); Vehicular communications; GeoNetworking; Part 4: Geographical addressing and forwarding for point-to-point and point-to-multipoint communications; Sub-part 1: Media independent functionalities".
- [2] ISO/IEC 9646-1 (1994): "Information technology - Open Systems Interconnection - Conformance testing methodology and framework - Part 1: General concepts".
- [3] ISO/IEC 9646-2 (1994): "Information technology - Open Systems Interconnection - Conformance testing methodology and framework - Part 2: Abstract Test Suite specification".
- [4] ISO/IEC 9646-6 (1994): "Information technology - Open Systems Interconnection - Conformance testing methodology and framework - Part 6: Protocol profile test specification".
- [5] ISO/IEC 9646-7 (1995): "Information technology - Open Systems Interconnection - Conformance testing methodology and framework - Part 7: Implementation Conformance Statements".
- [6] ETSI ETS 300 406 (1995): "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 102 636-4-2: "Intelligent Transport Systems (ITS); Vehicular Communications; GeoNetworking; Part 4: Geographical addressing and forwarding for point-to-point and point-to-multipoint communications; Sub-part 2: Media dependent functionalities for ITS-G5A media".
- [i.2] ETSI EG 202 798: "Intelligent Transport Systems (ITS); Testing; Framework for conformance and interoperability testing".

3 Definitions and abbreviations

3.1 Definitions

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

- terms given in TS 102 636-4-1 [1] and TS 102 636-4-2 [i.1].
- terms given in ISO/IEC 9646-6 [4] and in ISO/IEC 9646-7 [5].

ItsNode: node that implements GeoAdhoc router functionality by TS 102 636-4-1 [1]

"to be in direction of X": ItsNode node is a valid candidate for a forwarding algorithm to forward the packet to the destination X. This means that the candidate ItsNode is geographically closer to X than the IUT

neighbour: ItsNode is in direct (single-hop) communication range

3.2 Abbreviations

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

BI	Invalid Behaviour
BV	Valid Behaviour
DEPV	DEstination Position Vector
GEONW	GeoNetworking
HL	Hop Limit
HST	Header Subtype
HT	Header Type
ICS	Implementation Conformance Statement
ITS	Intelligent Transportation Systems
ITS-G5	5 GHz wireless communication
IUT	Implementation Under Test
LT	Lifetime
NH	Next Header
PDU	Protocol Data Unit
PL	Payload Length
SAP	Service Access Point
SEPV	SEnder Position Vector
SHB	Single Hop Broadcast
SN	Sequence Number
SOPV	SOurce Position Vector
SUT	System Under Test
TP	Test Purposes
TSS	Test Suite Structure
TST	Timestamp

4 Test Configuration

This clause introduces the test configurations that have been used for the definition of test purposes. The test configurations cover the various scenarios of the GeoNetworking tests. The test configurations show:

-  green ItsNode: ItsNode is in the communication range of the IUT.