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**Intelligent Transport Systems (ITS);**
**Test specifications for the channel congestion control algorithms operating in the 5,9 GHz range;**
**Part 2: Test Suite Structure and Test Purposes (TSS & TP)**

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DTS/ITS-0040026

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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 the test specifications for the channel congestion control algorithms operating in the 5,9 GHz range 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) proforma specification".

# 1 Scope

The present document provides the Test Suite Structure and Test Purposes (TSS & TP) for the test specifications for the channel congestion control algorithms operating in the 5,9 GHz range as specified in TS 102 687 [1] in compliance with the relevant requirements and in accordance with the relevant guidance given in ISO/IEC 9646-7 [7] and ETS 300 406 [8].

In the present document only the ITS-G5A and ITS-G5B channels are covered.

# 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.

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## 2.1 Normative references

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



[1] ETSI TS 102 687: "Intelligent Transport Systems (ITS); Decentralized Congestion Control Mechanisms for Intelligent Transport Systems operating in the 5 GHz range; Access layer part".

[2] ETSI TS 102 724: "Intelligent Transport Systems (ITS); Harmonized Channel Specifications for Intelligent Transport Systems operating in the 5 GHz frequency band".

[3] ETSI TS 102 723-3: "Intelligent Transport Systems (ITS); OSI cross-layer topics; Part 3: Interface between management entity and access layer".



[4] ETSI TS 102 723-10: "Intelligent Transport Systems (ITS); OSI cross-layer topics; Part 10: Interface between access layer and networking & transport layer".

[5] ETSI TS 102 917-1: "Intelligent Transport Systems (ITS); Test specifications for the channel congestion control algorithms operating in the 5,9 GHz range; Part 1: Protocol Implementation Conformance Statement (PICS)".

[6] ISO/IEC 9646-1: "Information technology -- Open Systems Interconnection -- Conformance testing methodology and framework -- Part 1: General concepts".

[7] ISO/IEC 9646-7: "Information technology -- Open Systems Interconnection -- Conformance testing methodology and framework -- Part 7: Implementation Conformance Statements".

[8] 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.

Not applicable.

# 3 Definitions and abbreviations

## 3.1 Definitions

For the purposes of the present document, the terms and definitions given in TS 102 687 [1] and the following apply:

**Abstract Test Method (ATM):** Refer to ISO/IEC 9646-1 [6].

**Abstract Test Suite (ATS):** Refer to ISO/IEC 9646-1 [6].

**Implementation Under Test (IUT):** Refer to ISO/IEC 9646-1 [6].

**IN:** name of the interface between access layer and networking & transport layer

**Test Purpose (TP):** Refer to ISO/IEC 9646-1 [6].

## 3.2 Abbreviations

For the purposes of the present document, the abbreviations given in TS 102 687 [1], TS 102 724 [2] and the following apply:

| | |
|---|---|
| ACT | ACTive state |
| ASP | Abstract Service Primitive |
| ATS | Abstract Test Suite |
| CCH | Control Channel |
| CH | CHannel |
| DCC | Decentralized Congestion Control |
| DP | DCC Profile |
| ITS | Intelligent Transport System |
| ITS-G5 | Acronym for the 5,9 GHz vehicular adhoc network |
| IUT | Implementation Under Test |
| MI_SAP | Management Interface SAP |
| MTS | Multiple Transceiver Station |
| PC | Point of Control |
| PCO | Point of Control and Observation |
| PC_RTX | PC Radio Transmission |
| PIXIT | Protocol Implementation eXtra Information for Testing |
| PO | Point of Observation |
| PO_RRX | PO Radio Reception |
| REL | RELaxed state |
| RES | REStrictive state |
| SAP | Service Access Point |
| SCH | Service Channel |
| STS | Single Transceiver Station |
| SUT | System Under Test |
| TP | Test Purpose |
| TSS | Test Suite Structure |
| UT | Upper Tester |



# 4 Test configurations

## 4.1 Test architecture

The test architecture depicted in figure 1 is proposed. The aim of this test architecture is the testing of the access layer which acts as the implementation under test (IUT). As the MI_SAP is considered a non-observable interface the management entity is included in the system under test (SUT).