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**Intelligent Transport Systems (ITS);
RTTT;**

**Test specifications for High Data Rate (HDR) data
transmission equipment operating in the 5,8 GHz ISM band;
Part 2: Application Layer;**

Sub-Part 2: Test Suite Structure and Test Purposes (TSS&TP)

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TSS&TP**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
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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, sub-part 2 of a multi-part deliverable covering the test specifications for High Data Rate (HDR) Dedicated Short Range Communication (DSRC).

Full details of the entire series can be found in part 2-1 [2].

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1 Scope

The present document contains the Test Suite Structure (TSS) and Test Purposes (TP) to test the Dedicated Short Range Communication (DSRC) High Data Rate (HDR) Application Layer.

The objective of the present document is to provide a basis for conformance tests for DSRC-HDR equipment specified in [1] giving a high probability of inter-operability between different manufacturer's equipment.

The ISO standard for the methodology of conformance testing ISO/IEC 9646-1 [3] is 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 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 ES 200 674-1: "Intelligent Transport Systems (ITS); Road Transport and Traffic Telematics (RTTT); Dedicated Short Range Communications (DSRC); Part 1: Technical characteristics and test methods for High Data Rate (HDR) data transmission equipment operating in the 5,8 GHz Industrial, Scientific and Medical (ISM) band".
- [2] ETSI TS 102 708-2-1: "Intelligent Transport Systems (ITS); RTTT; Test specifications for High Data Rate (HDR) data transmission equipment operating in the 5,8 GHz ISM band; Part 2: Application Layer; Sub-Part 1: Protocol Implementation Conformance Statement (PICS) proforma specification".
- [3] ISO/IEC 9646-1 (1994): "Information technology - Open Systems Interconnection - Conformance testing methodology and framework - Part 1: General concepts".

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 [1] and [3] apply.

3.2 Abbreviations

For the purposes of the present document, the abbreviations given in [1] and [3] apply.

4 Test Suite Structure

4.1 Structure

Table 1 shows the application layer test suite structure (TSS) including its groups defined for the conformance testing.

Table 1: Test suite structure for DSRC-HDR application layer

Group	Type of system under test (SUT)	Behaviour
Kernel unit	On Board Unit	Valid behaviour
	Road Side Unit	Invalid behaviour
Read access	On Board Unit	Valid behaviour
	Road Side Unit	Invalid behaviour
Write access	On Board Unit	Valid behaviour
	Road Side Unit	Invalid behaviour
Optional functionality	On Board Unit	Valid behaviour
	Road Side Unit	Invalid behaviour
Security	On Board Unit	Valid behaviour
	On Board Unit	Invalid behaviour
	Road Side Unit	Valid behaviour
	Road Side Unit	Invalid behaviour
Integrity constraints	On Board Unit	Invalid behaviour

4.2 Test groups

There are six test groups defined for the application layer of DSRC-HDR as presented in table 1.

4.3 Type of SUT

Two types of systems under test (SUT) are distinguished, i.e. on board units (OBUs) and road side units (RSUs).

4.4 Behaviour test groups

4.4.1 Valid behaviour tests

Valid behaviour tests shall verify that the IUT reacts in conformity with the base standard [1], after receipt or exchange of valid protocol data units (PDUs). "Valid PDU" means that the exchange of messages and the content of the exchanged messages are considered as valid, i.e. compliant with the base standard.