



# SLOVENSKI STANDARD

## SIST ETS 300 836-3 E1:2006

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**Širokopasovna radijska dostopovna omrežja (BRAN) – Zelo zmogljivo radijsko lokalno omrežje (HIPERLAN), tip 1 – Specifikacija za preskušanje skladnosti – 3. del: Zgradba preskušalnega niza in namen preskušanja (TSS&TP) – Specifikacija**

Broadband Radio Access Networks (BRAN); High Performance Radio Local Area Network (HIPERLAN) Type 1; Conformance testing specification; Part 3: Test Suite Structure and Test Purposes (TSS&TP) specification

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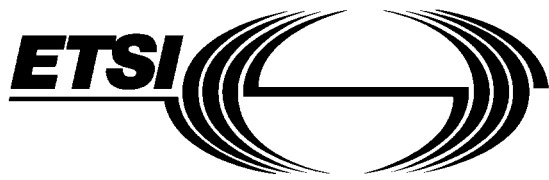
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## Foreword

This European Telecommunication Standard (ETS) has been produced by the ETSI Project Broadband Radio Access Networks (BRAN) of the European Telecommunications Standards Institute (ETSI).

This ETS consists of 4 parts:

- Part 1: "Radio type approval and Radio Frequency (RF) conformance test specification";
- Part 2: "Protocol Implementation Conformance Statement (PICS) proforma specification";
- Part 3: "Test Suite Structure and Test Purposes (TSS&TP) specification";**
- Part 4: "Abstract Test Suite (ATS) specification".

Transposition dates	
Date of adoption of this ETS:	1 May 1998
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## 1 Scope

This European Telecommunication Standard (ETS) specifies the Test Suite Structure and Test Purposes (TSS&TP) for the Medium Access Control (MAC) and Channel Access Control (CAC) protocol parts of the High Performance Radio Local Area Network (HIPERLAN), Type 1 functional specification as specified in ETS 300 652 [1].

In this ETS, the term "HIPERLAN" is used to refer to HIPERLAN, Type 1.

## 2 Normative references

This ETS incorporates by dated and undated reference, provisions from other publications. These normative references are cited at the appropriate places in the text and the publications are listed hereafter. For dated references, subsequent amendments to or revisions of any of these publications apply to this ETS only when incorporated in it by amendment or revision. For undated references the latest edition of the publication referred to applies.

- [1] ETS 300 652 (1996) and prA1 (1996): "Radio Equipment and Systems (RES); High Performance Radio Local Area Network (HIPERLAN); Type 1; Functional specification".
- [2] ETS 300 836-2: "Radio Equipment and Systems (RES); High Performance Radio Local Area Network (HIPERLAN) Type 1; Conformance testing specification; Part 2: Protocol Implementation Conformance Statement (PICS)".
- [3] ISO/IEC 9646-1 (1994): "Information technology - Open systems interconnection - Conformance testing methodology and framework - Part 1: General concepts".
- [4] ISO/IEC 9646-2 (1994): "Information Technology - OSI Conformance Testing Methodology and Framework Part 2: Abstract Test Suite Specification".

## 3 Definitions, symbols and abbreviations

### 3.1 Definitions

For the purposes of this ETS, the following definitions apply, in addition to those given in ETS 300 652 [1]:

**abstract test method:** See ISO/IEC 9646-1 [3].

**abstract test suite:** See ISO/IEC 9646-1 [3].

**implementation under test:** See ISO/IEC 9646-1 [3].

**test purpose:** See ISO/IEC 9646-1 [3].

### 3.2 Symbols

For the purposes of this ETS, the symbols defined in ETS 300 652 [1] apply.

### 3.3 Abbreviations

For the purposes of this ETS, the following abbreviations apply, in addition to those given in ETS 300 652 [1]:

ATM	Abstract Test Method
ATS	Abstract Test Suite
CAC	Channel Access Control
HIPERLAN	High Performance Radio Local Area Network
IUT	Implementation Under Test
MAC	Medium Access Control
MSAP	MAC Service Access Point
PICS	Protocol Implementation Conformance Statement
TP	Test Purpose
TSS	Test Suite Structure
TSS&TP	Test Suite Structure and Test Purposes

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## 4 Test suite structure

The test suite structure is defined in table 1.

Table 1: Test suite structure

HIPERLAN	MAC	LK	Lookup function	LKP
		RF	Routing and Forwarding	FWD Forwarder
				NFD Non-forwarder
				FNF Forwarder & Non-forwarder
				MRD Multipoint relay determination
				ALI Aliasing
				FOR Forwarding
				ROU Routing
		PC	Power conservation function	IPD Individual-attention pattern declaration
				IPR Individual-attention pattern recording
				GPD Group-attendance pattern declaration
				GPR Group-attendance pattern recording
		DT	User data transfer function	SAN Sanity check computation
				EDN User data encryption-decryption
				QOS HMQoS failure reporting
				UDA User data acceptance
				UDD User data delivery
		HT	HMPDU transfer function	EXP Expired HMPDU removal
				SEL HMPDU selection
				TRA HMPDU transmission
				REC HMPDU reception
				REM Expired duplicate detection entry removal
		SE	Structure & encoding of HMPDUs	VAR
	CAC	EY	Elimination-Yield Non pre-emptive Priority Multiple Access	PRI Prioritization phase
				ELE Elimination phase
				YIE Yield phase
				TRP Transmission phase
				CHA Conditions for commencing channel access
				OPS Operator parameter settings
		CH	Channel permission function	CPD CP-HCPDU declaration
				CPR CP-HCPDU recording
		DT	User data transfer function.	UDT
		HT	HCPDU transfer function	LBR LBR-part checksum computation
				HBR HBR-part checksum computation
				HDA Hashed address computation
				TRA LBR-HBR HCPDU transmission
				REC HCPDU reception
		SE	Structure & encoding of HCPDUs	VAR

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## 5 Test purpose structure

### 5.1 TP naming convention

Individual TPs are numbered, starting at 1, within groups. These groups are organized according to the fourth level of the TSS. Additional references are added to identify whether the TP relates to the MAC or CAC and its group. See table 2.

**Table 2: TP Identifier naming convention scheme**

Identifier:	<layer>_<group>_<nn>		
<layer>	=	sublayer of protocol (second level of TSS):	MAC or CAC
<group>	=	group (fourth level of TSS):	3 letter field representing group reference according to TSS
<nn>	=	sequential number:	(1-99)

### 5.2 TP structure

Generally each TP has been written in a manner which is consistent with all other TPs. The intention of this is to make the TPs more readable and checkable. A particular structure has been used and this is illustrated in table 3. This table should be read in conjunction with any TP i.e. use a TP as an example to fully understand the table. Due to the nature of the protocol some TPs may not fit exactly into this structure.

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Table 3: Structure of a single TP for HIPERLAN

TP Part	Text	Example
<b>Header</b> (bold)	<Identifier> <b>tab</b> subclause <subclause number in ETS 300 652 [1]> <b>tab</b> <type of test> <b>tab</b> PICS: <PICS reference>	see table 2 <b>subclause 0.0.0</b>  <b>valid, invalid</b> <b>PICS: MC 0</b>
<b>Stimulus</b> (normal)	Ensure that the IUT (<type of IUT>)  <precondition>  <trigger> <b>see below for PDU structure</b> <b>or</b> <goal>	(a forwarder), (a non-forwarder) etc. having generated a ..., after receiving a ..., etc. on receipt of... in order to...
<b>Reaction</b> (indented)	<action>  <conditions> <b>if the action is sending</b> <b>see below for PDU structure</b> <next action>, <b>etc.</b>	transmits, generates, does not transmit, etc. within the time $T_{hr}$ , etc.
<b>PDU structure</b>	<PDU type> containing a <b>or</b> with <b>a)</b> <field name> encoded as <b>or</b> including <coding of the field> <b>or</b> <b>b)</b> <tuple name> with <tuple field> equal to <value of the tuple field> and <b>back to a) or b)</b>	HO-HMPDU, DT-HCPDU, etc.  SA, ADA, etc.  MSAP address of the IUT, etc.  NT-Status, etc.  T-Heard, etc.
NOTE:	Text in bold will not appear in TPs and text between <> is filled in for each TP and may differ from one TP to the next.	

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## 6 Test purposes

### 6.1 TPs for MAC protocol

NOTE: In this clause the expression "(for the IUT)" is used to indicate that a DT-HMPDU received by the IUT contains a destination MAC Service Access Point (MSAP) address identifying the IUTs HMS user.

#### 6.1.1 TPs for lookup function

**MAC\_LKP\_1**      **subclause 6.2.1**                      **valid**                      **PICS: MC 6**

Ensure that the IUT, on receipt of a HM-LOOKUP request primitive:

- generates a HC-UNITDATA request primitive containing an LR-HMPDU, with:
  - HIPERLAN identifier parameter set to Any\_HIPERLAN;
  - destination address parameter set to All\_Neighbours.

**MAC\_LKP\_2**      **subclauses 6.2.1, 6.2.3**                      **valid**                      **PICS: MC 6**

Ensure that the IUT, having generated an LR-HMPDU, on receipt of one and only one LC-HMPDU, before expiry of timer  $t_C$ :

- issues a HM-LOOKUP confirm service primitive containing HIPERLAN information with HIPERLAN name and HIPERLAN identifier as contained in the received LC-HMPDU.

**MAC\_LKP\_3**      **subclauses 6.2.1, 6.2.3**                      **valid**                      **PICS: MC 6**

Ensure that the IUT, having generated an LR-HMPDU, on receipt of exactly two LC-HMPDUs, each containing different HIPERLAN name and HIPERLAN identifier, before expiry of timer  $t_C$ :

- issues a HM-LOOKUP confirm service primitive containing HIPERLAN information with HIPERLAN names and HIPERLAN identifiers as contained in the received LC-HMPDUs.

**MAC\_LKP\_4**      **subclause 6.2.1**                      **valid**                      **PICS: MC 6**

Ensure that the IUT, having generated an LR-HMPDU, on receipt of no LC-HMPDUs, before expiry of timer  $t_C$ :

- issues a HM-LOOKUP confirm service primitive containing HIPERLAN information with no HIPERLAN names and HIPERLAN identifiers.

**MAC\_LKP\_5**      **subclause 6.2.3**                      **inopportune**

Ensure that the IUT, not having generated an LR-HMPDU during a period of  $I_{LR}$  or an LC-HMPDU during a period of  $I_{LC}$ , on receipt of an LC-HMPDU:

- ignores the LC-HMPDU and does not issue a HM-LOOKUP confirm service primitive.

**MAC\_LKP\_6**      **subclause 6.2.3**                      **inopportune**

Ensure that the IUT, not having generated an LR-HMPDU during a period of  $I_{LR}$ , and having generated but not yet transmitted an LC-HMPDU, on receipt of an LC-HMPDU containing the same HIPERLAN information as in the previously generated LC-HMPDU:

- cancels the transmission of the previously generated LC-HMPDU.

**MAC\_LKP\_7**      **subclause 6.2.3**      **inopportune**

Ensure that the IUT, not having generated an LR-HMPDU during a period of  $I_{LR}$ , and having generated but not yet transmitted an LC-HMPDU, on receipt of an LC-HMPDU containing the same HIPERLAN information as in the previously generated LC-HMPDU:

- does not issue a HM-LOOKUP confirm service primitive.

**MAC\_LKP\_8**      **subclause 6.2.3**      **inopportune**

Ensure that the IUT, not having generated an LR-HMPDU during a period of  $I_{LR}$ , and having generated but not yet transmitted an LC-HMPDU, on receipt of an LC-HMPDU containing the same HIPERLAN name and different HIPERLAN identifier as in the previously generated LC-HMPDU:

- proceeds with the transmission of the previously generated LC-HMPDU.

**MAC\_LKP\_9**      **subclause 6.2.3**      **inopportune**

Ensure that the IUT, not having generated an LR-HMPDU during a period of  $I_{LR}$ , and having generated but not yet transmitted an LC-HMPDU, on receipt of an LC-HMPDU containing the same HIPERLAN name and different HIPERLAN identifier as in the previously generated LC-HMPDU:

- does not issue a HM-LOOKUP confirm service primitive.

**MAC\_LKP\_10**      **subclause 6.2.3**      **inopportune**

Ensure that the IUT, not having generated an LR-HMPDU during a period of  $I_{LR}$ , and having generated but not yet transmitted an LC-HMPDU, on receipt of an LC-HMPDU containing the same HIPERLAN identifier and different HIPERLAN name as in the previously generated LC-HMPDU:

- proceeds with the transmission of the previously generated LC-HMPDU.

**MAC\_LKP\_11**      **subclause 6.2.3**      **inopportune**

Ensure that the IUT, not having generated an LR-HMPDU during a period of  $I_{LR}$ , and having generated but not yet transmitted an LC-HMPDU, on receipt of an LC-HMPDU containing the same HIPERLAN identifier and different HIPERLAN name as in the previously generated LC-HMPDU:

- does not issue a HM-LOOKUP confirm service primitive.

**MAC\_LKP\_12**      **subclause 6.2.2**      **valid**

Ensure that the IUT, on receipt of an LR-HMPDU:

- generates a HC-UNITDATA request primitive containing an LC-HMPDU, with HIPERLAN name and HIPERLAN identifier of the local HM-entitys HIPERLAN, with:
  - HIPERLAN identifier parameter set to Any\_HIPERLAN;
  - destination address parameter set to All\_Neighbours.

**MAC\_LKP\_13**      **subclause 6.2.2**      **valid**

Ensure that the IUT, having received an LR-HMPDU and having generated an LC-HMPDU in response, on receipt of a second LR-HMPDU prior to the transmission of the response to the first:

- ignores this second LR-HMPDU and does not generate an LC-HMPDU in response.