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Broadband Radio Access Networks (BRAN); HIgh PErformance Radio Local Area Network (HIPERLAN) Type 1; Functional specification

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Broadband Radio Access Networks (BRAN); HIgh PErformance Radio Local Area Network (HIPERLAN) Type 1; Functional specification

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Foreword

This European Standard (Telecommunications series) has been produced by ETSI Project Broadband Radio Access Networks (BRAN).

The present document was converted from an ETS to an EN including Amendments 1 and 2. Two editorial changes were made. One in subclause 6.4.1.1 in the 2nd formula and one in subclause 9.7.3.2, the Mbit/s number.

Proposed national transposition dates	
Date of adoption of this EN:	16 July 1998
Date of latest announcement of this EN (doa):	31 October 1998
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1 Scope

CEPT Recommendation T/R 22-06 [1] permits the operation of high speed radio local area networks in the 5,15 to 5,30 GHz and 17,1 to 17,3 GHz frequency bands. These types of radio networks are referred to as HIgh PErformance Radio Local Area Networks (HIPERLANs).

The present document specifies the technical characteristics of HIPERLAN Type 1 that operates in the 5,15 to 5,3 GHz frequency band and that uses Non-Pre-emptive Priority Multiple Access (NPMA) as the channel access method.

HIPERLAN Type 1 is confined to the lowest two layers of the Open Systems Interconnection (OSI) model: the Physical Layer and the Medium Access Control (MAC) part of the Data Link Layer. Functions of higher layers are required for operation and interworking of a complete systems. These higher layers are outside the scope of the present document.

The present document does not address the requirements and technical characteristics required for type approval and conformance testing. These are covered in a separate HIPERLAN ETS.

Separate ETSI standards address other types of HIPERLAN systems.

2 Normative references

The following documents contain provisions which, through reference in this text, constitute provisions of the present document.

- References are either specific (identified by date of publication, edition number, version number, etc.) or non-specific.
- For a specific reference, subsequent revisions do not apply.
- For a non-specific reference, the latest version applies.
- A non-specific reference to an ETS shall also be taken to refer to later versions published as an EN with the same number.

[1] CEPT Recommendation T/R 22-06: "Relating to the harmonised radio frequency bands for HIgh PErformance Radio Local Area Networks (HIPERLANs) in the 5 GHz and 17 GHz frequency range".

[2] ISO/IEC 7 498-1 (1994): "Information technology - Open Systems Interconnection - Basic Reference Model: The Basic Model".

[3] (not used).

[4] (not used).

[5] ISO/IEC 10 731 (1994): "Information technology - Open Systems Interconnection - Basic Reference Model - Conventions for the definition of OSI services".

[6] ANSI/IEEE 802.1a (1990): "Local Area Network and Metropolitan Area Network - Overview and Architecture".

[7] ISO/IEC 15 802-1 (1995): "Information technology - Telecommunications and information exchange between systems - Local and metropolitan area networks - Common specifications - Part 1: Medium Access Control (MAC) service definition".

[8] ISO/IEC 10 038 (1993): "Information technology - Telecommunications and information exchange between systems - Local area networks - Media access control (MAC) bridges".

[9] ISO/IEC 10 646-1 (1993): "Information Technology - Universal Multiple-Octet Coded Character Set (UCS) - Part 1: Architecture and Basic Multilingual Plane".

3 Definitions, abbreviations and symbols

3.1 Definitions

For the purposes of The present document, the following definitions apply:

3.1.1 Basic reference model definitions

The present document is based on the concepts developed in the open system interconnect basic reference model and makes use of the following terms defined in ISO/IEC 7 498-1 [2]:

- layer;
- sublayer;
- entity;
- entity title;
- service;
- service access point;
- service access point address;
- quality of service;
- service data unit;
- protocol data unit;
- physical layer;
- data link layer.

3.1.2 Service conventions definitions

The present document makes use of the following terms defined in ISO/IEC 10 731 [5]:

- service user;
- service provider;
- service primitive;
- request;
- indication;
- confirm.

3.1.3 Local area network definitions

The present document makes use of the following terms defined in ANSI/IEEE 802.1a [6]:

- local area network;
- logical link control;
- medium access control.

3.1.4 Medium access control service definitions

The present document makes use of the following terms defined in ISO/IEC 15 802-1 [7]:

- group-MSAP-address;
- MAC service data unit (MSDU).

3.1.5 HIPERLAN definitions

The present document defines the following definitions:

Channel Access Control (CAC): The sublayer between the MAC sublayer and the physical layer in the HIPERLAN reference model.

Elimination-Yield Non-Pre-Emptive Priority Multiple Access (EY-NPMA): The specific NPMA used to access the HIPERLAN channel.

Non-Pre-Emptive Priority Multiple Access (NPMA): The principle of channel access mechanism which provides hierarchical independence of performance by means of channel access priority.

3.2 Abbreviations

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

3.2.1 General

CAC	Channel Access Control
EY-NPMA	Elimination-Yield Non-Pre-emptive priority Multiple Access
HEU	HIPERLAN Enhancement Unit
HIPERLAN	High Performance Radio Local Area Network, Type 1
LAN	Local Area Network
MAC	Medium access Control
NPMA	Non-Pre-emptive priority Multiple Access
OSI	Open Systems Interconnection
PHY	PHYsical layer
RLAN	Radio Local Area Network

3.2.2 HIPERLAN MAC sublayer general

HM-entity	HIPERLAN MAC entity
HMPDU	HIPERLAN MAC Protocol Data Unit
HMQoS	HIPERLAN MAC Quality of Service
HMS-primitive	HIPERLAN MAC Service primitive
HMS-provider	HIPERLAN MAC Service provider
HMS-user	HIPERLAN MAC Service user
MSAP	MAC Service Access Point
MSAP-address	MAC Service Access Point address
MSDU	MAC Service Data Unit

3.2.3 HIPERLAN CAC sublayer general

CAM	Channel Access Mechanism
HC-entity	HIPERLAN CAC entity
HCPDU	HIPERLAN CAC Protocol Data Unit
HCQoS	HIPERLAN CAC Quality of Service
HCS-primitive	HIPERLAN CAC Service primitive
HCS-provider	HIPERLAN CAC Service provider
HCS-user	HIPERLAN CAC Service user