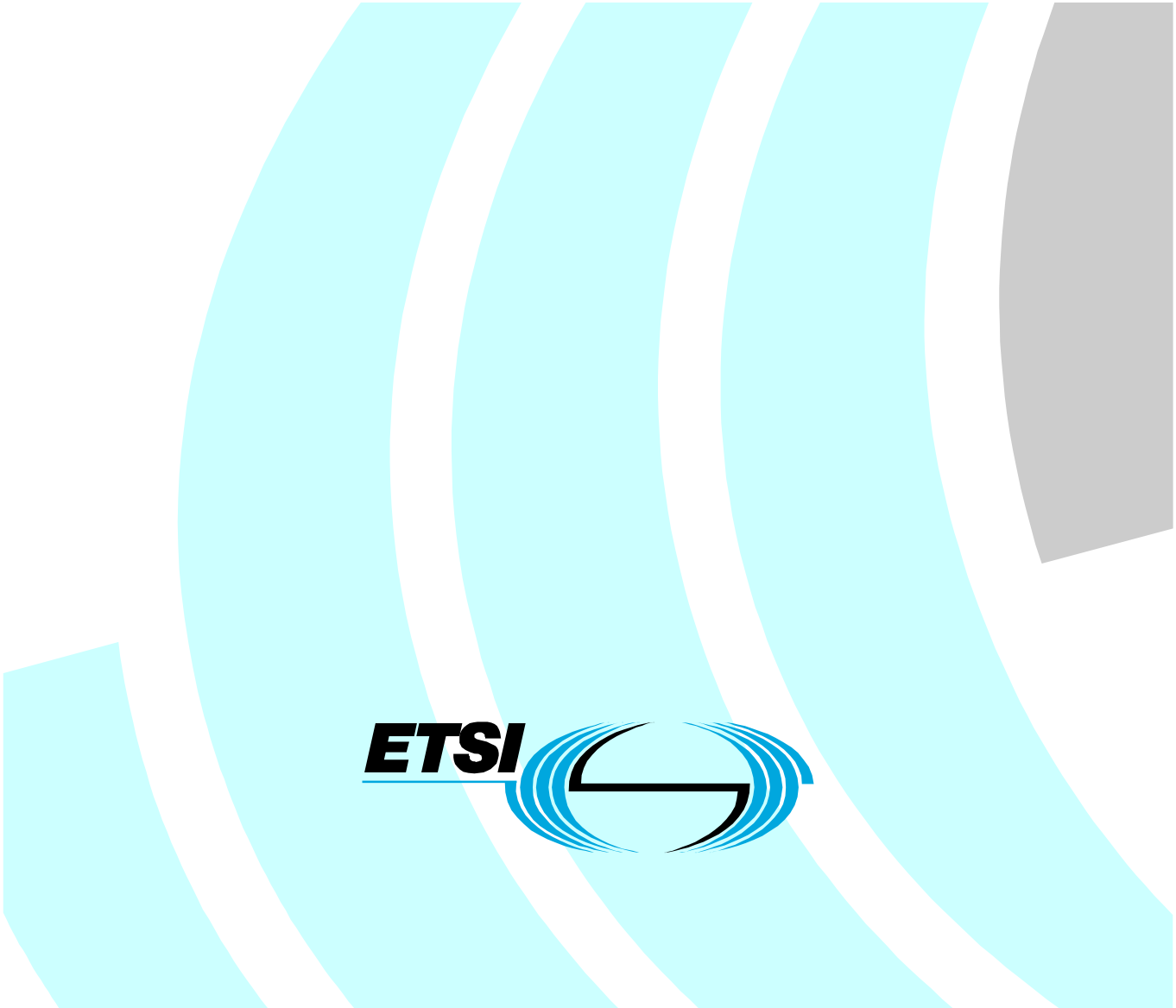
ETSI TS 101 823-5-1 V1.2.1 (2003-07)

Technical Specification

Broadband Radio Access Networks (BRAN);
HIPERLAN Type 2;
Conformance testing for the Data Link Control (DLC) layer;
Part 5: Profile for Home Environment;
Sub-part 1: Profile Requirement List proforma specification



Reference
RTS/BRAN-002T0A4-5-1

Keywords
access, HIPERLAN, PICS, testing

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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Contents

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Foreword

This Technical Specification (TS) has been produced by ETSI Project Broadband Radio Access Networks (BRAN).

The present document is part 5, sub-part 1 of a multi-part deliverable. Full details of the entire series can be found in part 1, sub-part 1 [5].

Introduction

To evaluate conformance of a particular implementation, it is necessary to have a statement of which capabilities and options have been implemented for a telecommunication specification. When such a statement is based on a profile, it is called Profile ICS.

1 Scope

The present document provides the Profile Requirement List (PRL) proforma for Broadband Radio Access Networks (BRAN) HIPERLAN Type 2 DLC layer, Profile for Home Environment as defined in TS 101 761-5 [1] in compliance with the relevant requirements, and in accordance with the relevant guidance given in ISO/IEC 9646-7 [4] and ETS 300 406 [2].

It details in tabular form the implementation options, which come as modifications to the PICS proforma of the protocols which constitute the Home profile.

2 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 and/or edition number or version number) or non-specific.
- For a specific reference, subsequent revisions do not apply.
- For a non-specific reference, the latest version applies.

Referenced documents which are not found to be publicly available in the expected location might be found at http://docbox.etsi.org/Reference.

[1] ETSI TS 101 761-5 (V1.2.1): "Broadband Radio Access Networks (BRAN); HIPERLAN Type 2; Data Link Control (DLC) Layer; Part 5: Profile for Home Environment".

[2] ETSI ETS 300 406: "Methods for Testing and Specification (MTS); Protocol and profile conformance testing specifications; Standardization methodology".

[3] ISO/IEC 9646-1: "Information technology - Open systems interconnection - Conformance testing methodology and framework - Part 1: General concepts".

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

[5] ETSI TS 101 823-1-1 (V1.3.1): "Broadband Radio Access Networks (BRAN); HIPERLAN Type 2; Conformance testing for the Data Link Control (DLC) layer; Part 1: Basic data transport function; Sub-part 1: Protocol Implementation Conformance Statement (PICS) proforma".

[6] ETSI TS 101 823-2-1 (V1.3.1): "Broadband Radio Access Networks (BRAN); HIPERLAN Type 2; Conformance testing for the Data Link Control (DLC) layer; Part 2: Radio Link Control (RLC) sublayer; Sub-part 1: Protocol Implementation Conformance Statement (PICS) proforma".

[7] ETSI TS 101 823-4-1 (V1.2.1): "Broadband Radio Access Networks (BRAN); HIPERLAN Type 2; Conformance testing for the Data Link Control (DLC) layer; Part 4: Extension for Home Environment; Sub-part 1: Protocol Implementation Conformance Statement (PICS) proforma".

[8] ETSI TS 101 811-1-1 (V1.3.1): "Broadband Radio Access Networks (BRAN); HIPERLAN Type 2; Conformance testing for the packet based convergence layer; Part 1: Common part; Sub-part 1: Protocol Implementation Conformance Statement (PICS) proforma".

[9] ETSI TS 101 811-3-1 (V1.2.1): "Broadband Radio Access Networks (BRAN); HIPERLAN Type 2; Conformance testing for the packet based convergence layer; Part 3: IEEE 1394 Service Specific Convergence Sublayer (SSCS); Sub-part 1: Protocol Implementation Conformance Statement (PICS) proforma".

3 Definitions and abbreviations

3.1 Definitions

For the purposes of the present document, the terms and definitions given in TS 101 761-5 [1] , ISO/IEC 9646-1 [3], ISO/IEC 9646-7 [4] and the following apply:

Implementation Conformance Statement (ICS): statement made by the supplier of an implementation or system claimed to conform to a given specification, stating which capabilities have been implemented. The ICS can take several forms: protocol ICS, profile ICS, profile specific ICS, information object ICS, etc.

ICS proforma: document, in the form of a questionnaire, which when completed for an implementation or system becomes an ICS

Profile ICS: ICS for an implementation or system claimed to conform to a given profile specification

Protocol ICS (PICS): ICS for an implementation or system claimed to conform to a given protocol specification

Profile Requirement List (PRL): requirement list for an implementation or system claimed to conform to a given profile specification

3.2 Abbreviations

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

ACF	Association Control Function
AP	Access Point
CC	Central Controller
DiL	Direct Link
DLC	Data Link Control
DUCC	DLC User Connection Control
FCA	Fixed Capacity Agreement
HE	Home Environment
HO	HandOver
IEC	International Electrotechnical Commission
IEEE	Institute of Electrical and Electronic Engineers
ISO	International Organization for Standardization
MT	Mobile Terminal
PDU	Protocol Data Unit
RLC	Radio Link Control
RRC	Radio Resource Control functions
TS	Technical Specification
UBCH	User Broadcast Channel
UDCH	User Data Channel
WT	Wireless Terminal

4 Conformance to this PRL proforma specification

If it claims to conform to the present document, the actual PICS proformas to be filled in by a supplier shall be technically equivalent to the text of the PICS proformas given in reference and shall preserve the numbering/naming and ordering of the proforma it. In addition, the PRL of annex A to be filled in by a supplier shall be technically equivalent to the text of this proforma.

Annex A (normative): Profile requirement list for HOME profile, with IEEE 1394 SSCS

A.1 Purpose and structure

The purpose of this requirement list is to specify the modifications that apply to the status of the items affected in the ICS proforma of each base specification.

A.2 Impact on PICS proforma for DLC layer (CC and WT implementations)

A.2.1 Basic Data Transport

This clause identifies the modifications to the requirements expressed in TS 101 823-1-1 [5].

Table A.1: Error control modes

Item	Error control mode	CC		WT	
		Profile reference	Profile status	Profile reference	Profile status
1	Acknowledged mode UDCH	6.2	o.1	6.2	m
2	Repetition mode UBCH	6.2	o.1	6.2	m
3	Unacknowledged mode	6.2	o.1	6.2	m
o.1: It is mandatory for the CC to support at least one of these EC modes.					

This home profile confirms the mandatory status for the WT.

Table A.2: MAC functions

Item	function	CC		WT	
		Profile reference	Profile status	Profile reference	Profile status
1	Fixed Capacity Agreement (FCA)	6.1	m	6.1	m

This home profile changes the status for the Fixed Capacity Agreement to make it mandatory for CC and WT.

A.2.1 DLC extensions

This clause identifies the modifications to the requirements expressed in TS 101 823-4-1 [7].

Table A.3: Error control modes

Item	Error control mode	CC		WT	
		Profile reference	Profile status	Profile reference	Profile status
1	FEC mode for isochronous capable devices	8.1	m	8.1	m

A.3 Impact on PICS proforma for Radio Link Control (RLC) protocol

A.3.1 WT implementation

The following clauses identify the modifications to the WT requirements expressed in TS 101 823-2-1 [6].

The modifications apply to clauses of the referenced PICS, which deal with the MT (or WT) functionalities.

A.3.1.1 Broadcast and multicast function

Table A.4: WT broadcast/multicast procedures

Item	Capabilities	Profile reference	Profile status
1	Multicast with multicast addressing	7.1.3	o.2
2	Multicast with N unicast addressing	7.1.3	o.2
3	Broadcast	7.1.3	m
o.2:	It is mandatory for the WT to support at least one of these multicast modes.		

A.3.1.2 Association Control Function (ACF)

Table A.5: connection modes and link capabilities

Item	Capabilities	Profile reference	Profile status
1	centralized mode	6.1	m
2	direct mode	6.1	m

This home profile changes the status for the direct mode support to make it mandatory for WT.

Table A.6: Association functions

Item	Capabilities	Profile reference	Profile status
1	WT initiates Association request message	7.1.1	m
2	WT initiates info transfer procedure with AP (or with WT for Direct Link purpose)	7.1.1	m

Table A.7: Security functions

Item	Capabilities	Profile reference	Profile status
1	Direct mode common key distribution	7.1.1	m

Table A.8: Authentication protocols and key identifiers

Item	Capabilities	Profile reference	Profile status
1	IEEE address	7.1.1	o
2	Extended IEEE address	7.1.1	o
3	Network access identifier	7.1.1	o
4	Distinguished name X509	7.1.1	o
5	Compressed type	7.1.1	o
6	Generic type	7.1.1	m

This home profile changes the status for generic type as authentication key identifier to make it mandatory for WT. All other key identifiers remain optional.

Table A.9: Key management

Item	Capabilities	Profile reference	Profile status
1	Common keys	7.1.2	m
2	Common key refresh	7.1.2	m

A.3.1.3 Radio Resource Control functions (RRC)

Table A.10: RRC procedures for WT

Item	Capabilities	Profile reference	Profile status
1	WT supports handover	7.2.1	o
2	WT supports DL power saving	7.2.2	o

This home profile keeps the status of handover as optional. Consequence is that all handover procedures remain optional, as listed in table A.11.

Table A.11: Handover procedures for WT

Item	Capabilities	Profile reference	Profile status
1	WT supports Sector handover	7.2.1	o
2	WT supports Radio handover	7.2.1	o
3	WT supports Network handover	7.2.1	o
4	WT supports Forced handover	7.2.1	o

This clause identifies the modifications to the requirements expressed in TS 101 823-4-1 [7].

Table A.12: ACF functions for WT

Item	Capabilities	Profile reference	Profile status
1	WT supports association with multiple convergence layers	8.2	m
2	Authentication key management	8.2	m
3	Encryption	8.2	m

Table A.13: RRC functions for WT

Item	Capabilities	Profile reference	Profile status
1	DiL link adaptation	8.3	m
2	Power control for DM	8.3	m
3	Link quality calibration for DM operation	8.3	m

Table A.14: DUCC functions for WT

Item	Capabilities	Profile reference	Profile status
1	DiL multicast connection (setup, modify, release) with QoS negotiations	8.4	m

A.3.1.4 PDUs

See clause A.3.3 common to WT and CC implementations.

A.3.2 CC implementation

This clause identifies the modifications to the requirements expressed in TS 101 823-2-1 [6].

The modifications apply to clauses of the referenced PICS, which deal with the AP or CC functionalities.

A.3.2.1 Broadcast and multicast function

Table A.15: CC broadcast/multicast procedures

Item	Capabilities	Profile reference	Profile status
1	Multicast with multicast addressing	7.1.3	o.3
2	Multicast with N unicast addressing	7.1.3	o.3
3	Broadcast	7.1.3	m
o.3: It is mandatory for the CC to support at least one of these multicast modes.			

A.3.2.2 Association Control Function (ACF)

Table A.16: connection modes and link capabilities

Item	Capabilities	Profile reference	Profile status
1	centralized mode	6.1	m
2	direct mode	6.1	m

This home profile changes the status for the direct mode support to make it mandatory for CC.

Table A.17: Association functions

Item	Capabilities	Profile reference	Profile status
1	CC supports info transfer procedure with WT	7.1.1	m

Table A.18: Security functions

Item	Capabilities	Profile reference	Profile status
1	Direct mode common key distribution	7.1.1	m

Table A.19: Authentication protocols and key identifiers

Item	Capabilities	Profile reference	Profile status
1	IEEE address	7.1.1	o
2	Extended IEEE address	7.1.1	o
3	Network access identifier	7.1.1	o
4	Distinguished name X509	7.1.1	o
5	Compressed type	7.1.1	o
6	Generic type	7.1.1	m

This home profile changes the status for generic type as authentication key identifier to make it mandatory for CC. All other key identifiers remain optional.

Table A.20: Key management

Item	Capabilities	Profile reference	Profile status
1	Common keys	7.1.2	m
2	Common key refresh	7.1.2	m

A.3.2.3 Radio Resource Control functions (RRC)

Table A.21: RRC procedures for CC

Item	Capabilities	Profile reference	Profile status
1	CC supports handover	7.2.1	o
2	CC supports DL power saving	7.2.2	o

This home profile keeps the status of handover as optional. Consequence is that all handover procedures remain optional, as listed in table A.22.

Table A.22: Handover procedures for CC

Item	Capabilities	Profile reference	Profile status
1	CC supports Sector handover	7.2.1	o
2	CC supports Radio handover	7.2.1	o
3	CC supports Network handover	7.2.1	o
4	CC supports Forced handover	7.2.1	o

This clause identifies the modifications to the requirements expressed in TS 101 823-4-1 [7].

Table A.23: ACF functions for CC

Item	Capabilities	Profile reference	Profile status
1	CC supports association with multiple convergence layers	8.2	m
2	Authentication key management	8.2	m
3	Encryption	8.2	m

Table A.24: RRC functions for CC

Item	Capabilities	Profile reference	Profile status
1	DiL link adaptation	8.3	m
2	Power control for DM	8.3	m
3	Link quality calibration for DM operation	8.3	m
4	Dynamic CC selection	8.3	m
5	CC responsibility handover	8.3	o

Table A.25: DUCC functions for CC

Item	Capabilities	Profile reference	Profile status
1	DiL multicast connection (setup, modify, release) with QoS negotiations	8.4	m

A.3.2.4 PDUs

See clause A.3.3 common to WT and CC implementations.

A.3.3 PDUs

This home profile places no restriction on the support of PDUs.

Here follows the list of PDUs required for DLC and the status for each one.

Table A.26: HE LCH PDU messages

RLC message name	CC	WT
RLC_CALIBRATION_REPORT	m	m
RLC_DM_MC_SETUP	m	m
RLC_DM_MC_CONNECT	m	m
RLC_DM_MC_CONNECT_ACK	m	m
RLC_DM_MC_CONNECT_COMPLETE	m	m
RLC_DM_MC_CONNECT_COMPLETE_ACK	m	m
RLC_DM_MC_RELEASE	m	m
RLC_DM_MC_RELEASE_ACK	m	m
RLC_DM_MC_MODIFY	m	m
RLC_DM_MC_MODIFY_ACK	m	m
RLC_TRANS_CC_DATA	o	n/a
RLC_AUTHENTICATION_KEY_REQUEST	m	m
RLC_AUTHENTICATION_KEY_TRANSFER	m	m

Table A.27: HE SCH PDU messages

RLC message name	CC	WT
RLC_DM_POWER_CONTROL	m	m
RLC_CALIBRATION_MEASUREMENT_TRIGGER	m	m
RLC_ CALIBRATION_MEASUREMENT	m	m
RLC_CALIBRATION_REPORT_TRIGGER	m	m
RLC_SHORT_CALIBRATION_REPORT	m	m
RLC_CALIBRATION_LINKQUALITYMAP_REQUEST	m	m
RLC_ CALIBRATION_LINKQUALITYMAP	m	m
RLC_CC_HO_REQUEST	o	n/a
RLC_CC_HO_REQUEST_ACK	o	n/a
RLC_CC_HO_NOTIFY	m	m
RLC_TRANS_CC_DATA_ACK	o	n/a
RLC_START_CC	o	n/a
RLC_START_CC_ACK	o	n/a
RLC_CC_START_OPERATION	m	m
RLC_AUTHENTICATION_KEY_REQUEST_ACK	m	m
RLC_AUTHENTICATION_KEY_TRANSFER_ACK	m	m

A.4 Impact on PICS proforma for Packet based convergence layer - common part

This home profile places no restriction on the support answers requested by the PICS proforma for Packet based convergence layer provided in PICS proforma specification, TS 101 811-1-1 [8].

A.5 Impact on PICS proforma for Wireless IEEE 1394 Applications

This home profile places no restriction on the support answers requested by the PICS proforma for IEEE 1394 SSCS specification provided in PICS proforma specification, TS 101 811-3-1 [9].

History

Document history		
V1.2.1	July 2003	Publication