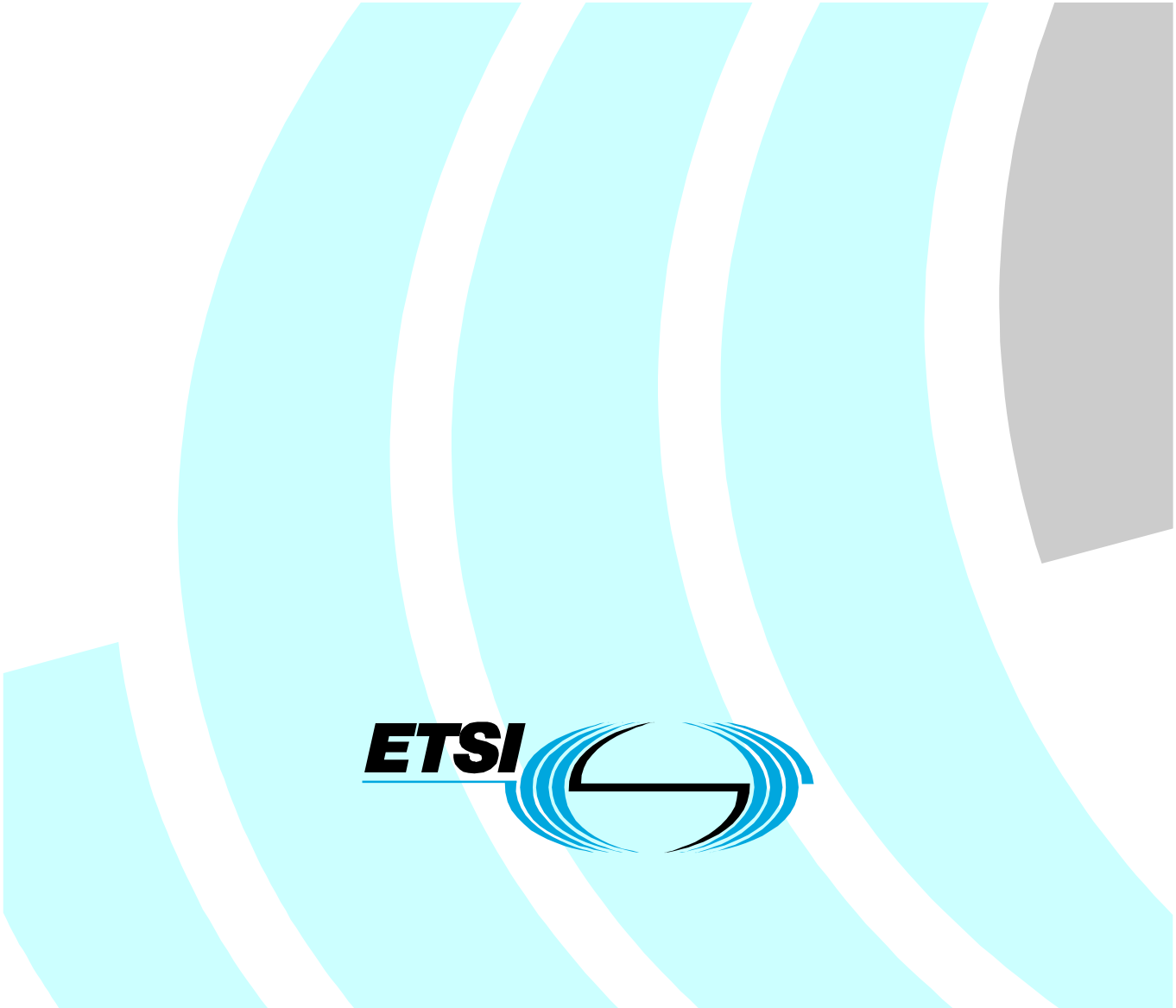
ETSI TS 101 823-4-1 V1.3.1 (2004-08)

Technical Specification

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



Reference
RTS/BRAN-002T0B4-4-1

Keywords
access, HIPERLAN, PICS, testing

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Sous-Préfecture de Grasse (06) N° 7803/88

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 4, sub-part 1 of a multi-part deliverable. Full details of the entire series can be found in part 1, sub-part 1 (see bibliography).

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 protocol, it is called PICS.

1 Scope

The present document provides the PICS proforma for BRAN HIPERLAN type 2 DLC layer, Extension for Home Environment as defined in TS 101 761-4 [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, i.e. the optional functions additional to those which are mandatory to implement.

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 101 761-4 (V1.3.2): "Broadband Radio Access Networks (BRAN); HIPERLAN Type 2; Data Link Control (DLC) Layer; Part 4: Extension for Home Environment".

[2] ETSI ETS 300 406 (1995): "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".

3 Definitions and abbreviations

3.1 Definitions

For the purposes of the present document, the terms and definitions defined in TS 101 761-4 [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

NOTE: 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
DUCC	DLC User Connection Control
FEC	Forward Error Correction
ICS	Implementation Conformance Statement
IUT	Implementation Under Test
PICS	Protocol Implementation Conformance Statement
PRL	Profile Requirement List
RLC	Radio Link Control
RRC	Radio Resource Control
SDU	Sevice Data Unit
SUT	System Under Test
WT	Wireless Terminal

4 Conformance to this PICS proforma specification

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

A PICS which conforms to the present document shall be a conforming PICS proforma completed in accordance with the guidance for completion given in clause A.1.

Annex A (normative): Protocol ICS proforma for TS 101 761-4

A.1 Guidance for completing the proforma

A.1.1 Purposes and structure

The purpose of this PICS proforma is to provide a mechanism whereby a supplier of an implementation of the requirements defined in TS 101 761-4 [1] may provide information about the implementation in a standardized manner.

The PICS proforma is subdivided into clauses for the following categories of information:

- guidance for completing the PICS proforma;
- identification of the implementation;
- identification of TS 101 761-4 [1];
- global statement of conformance;
- roles;
- major capabilities;
- PDUs;
- PDU parameters.

A.1.2 Abbreviations and conventions

The PICS proforma contained in this annex is comprised of information in tabular form in accordance with the guidelines presented in ISO/IEC 9646-7 [4].

Item column

The item column contains a number which identifies the item in the table.

Item description column

The item description column describes in free text each respective item (e.g. parameters, timers, etc.). It implicitly means "is <item description> supported by the implementation?".

Status column

The following notations, defined in ISO/IEC 9646-7 [4], are used for the status column:

m	mandatory - the capability is required to be supported.
o	optional - the capability may be supported or not.
n/a	not applicable - in the given context, it is impossible to use the capability.
x	prohibited (excluded) - there is a requirement not to use this capability in the given context.

o.i qualified optional - for mutually exclusive or selectable options from a set. "i" is an integer which identifies an unique group of related optional items and the logic of their selection which is defined immediately following the table.

ci conditional - the requirement on the capability ("m", "o", "x" or "n/a") depends on the support of other optional or conditional items. "i" is an integer identifying an unique conditional status expression which is defined immediately following the table.

i irrelevant (out-of-scope) - capability outside the scope of the reference specification. No answer is requested from the supplier.

NOTE 1: This use of "i" status is not to be confused with the suffix "i" to the "o" and "c" status above.

Reference column

The reference column makes reference to TS 101 761-4 [1], except where explicitly stated otherwise.

Support column

The support column shall be filled in by the supplier of the implementation. The following common notations, defined in ISO/IEC 9646-7 [4], are used for the support column:

Y or y supported by the implementation.

N or n not supported by the implementation.

N/A, n/a or - no answer required (allowed only if the status is n/a, directly or after evaluation of a conditional status).

If this PICS proforma is completed in order to describe a multiple-profile support in a system, it is necessary to be able to answer that a capability is supported for one profile and not supported for another. In that case, the supplier shall enter the unique reference to a conditional expression, preceded by "?" (e.g. ?3). This expression shall be given in the space for comments provided at the bottom of the table. It uses predicates defined in the SCS, each of which refers to a single profile and which takes the value TRUE if and only if that profile is to be used.

EXAMPLE 1: ?3: IF prof1 THEN Y ELSE N

NOTE 2: As stated in ISO/IEC 9646-7 [4], support for a received PDU requires the ability to parse all valid parameters of that PDU. Supporting a PDU while having no ability to parse a valid parameter is non-conformant. Support for a parameter on a PDU means that the semantics of that parameter are supported.

Values allowed column

The values allowed column contains the type, the list, the range, or the length of values allowed. The following notations are used:

- range of values: <min value> .. <max value>
  example: 5 .. 20

- list of values: <value1>, <value2>, ..., <valueN>
  example: 2 ,4 ,6 ,8, 9
  example: '1101'B, '1011'B, '1111'B
  example: '0A'H, '34'H, '2F'H

- list of named values: <name1>(<val1>), <name2>(<val2>), ..., <nameN>(<valN>)
  example: reject(1), accept(2)

- length: size (<min size> .. <max size>)
  example: size (1 .. 8)

Values supported column

The values supported column shall be filled in by the supplier of the implementation. In this column, the values or the ranges of values supported by the implementation shall be indicated.

References to items

For each possible item answer (answer in the support column) within the PICS proforma a unique reference exists, used, for example, in the conditional expressions. It is defined as the table identifier, followed by a solidus character "/", followed by the item number in the table. If there is more than one support column in a table, the columns are discriminated by letters (a, b, etc.), respectively.

EXAMPLE 2: A.5/4 is the reference to the answer of item 4 in table 5 of annex A.

EXAMPLE 3: A.6/3b is the reference to the second answer (i.e. in the second support column) of item 3 in table 6 of annex A.

Prerequisite line

A prerequisite line takes the form: Prerequisite: <predicate>.

A prerequisite line after a clause or table title indicates that the whole clause or the whole table is not required to be completed if the predicate is FALSE.

A.1.3 Instructions for completing the PICS proforma

The supplier of the implementation shall complete the PICS proforma in each of the spaces provided. In particular, an explicit answer shall be entered, in each of the support or supported column boxes provided, using the notation described in clause A.1.2.

However, the tables containing in "user role" or "Mobile Terminal MT" clause shall only be completed for MT implementations, and the tables containing in "network role" or "Access Point AP" clause shall only be completed for AP implementations.

If necessary, the supplier may provide additional comments in space at the bottom of the tables or separately.

More detailed instructions are given at the beginning of the different clauses of the PICS proforma.

A.2 Identification of the implementation

Identification of the Implementation Under Test (IUT) and the system in which it resides (the System Under Test (SUT)) should be filled in so as to provide as much detail as possible regarding version numbers and configuration options.

The product supplier information and client information should both be filled in if they are different.

A person who can answer queries regarding information supplied in the PICS should be named as the contact person.

A.2.1 Date of the statement

.....

A.2.2 Implementation Under Test (IUT) identification

IUT name:

.....

.....

IUT version:

.....

A.2.3 System Under Test (SUT) identification

SUT name:

.....

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Hardware configuration:

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.....

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Operating system:

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A.2.4 Product supplier

Name:

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Address:

.....

.....

.....

Telephone number:

.....

Facsimile number:

.....

E-mail address:

.....

Additional information:

.....

.....

.....

A.2.5 Client (if different from product supplier)

Name:

.....

Address:

.....

.....

.....

Telephone number:

.....

Facsimile number:

.....

E-mail address:

.....

Additional information:

.....

.....

A.2.6 PICS contact person

(A person to contact if there are any queries concerning the content of the PICS)

Name:

.....

Telephone number:

.....

Facsimile number:

.....

E-mail address:

.....

Additional information:

.....

.....

.....

A.3 Identification of TS 101 761-4

This proforma applies to the protocols described in the following standard:

TS 101 761-4: Broadband Radio Access Networks (BRAN); HIPERLAN type 2; Data Link Control (DLC) layer, Part 4: Extension for home environment.

A.4 Global statement of conformance

Are all mandatory capabilities implemented? (Yes/No) .....

NOTE: Answering "No" to this question indicates non-conformance to the TS 101 761-4 [1] specification. Non-supported mandatory capabilities are to be identified in the PICS, with an explanation of why the implementation is non-conforming, on pages attached to the PICS proforma.

A.5 PICS proforma for home extension of WT or CC

This clause contains the PICS statements covering the additions to the "base" specifications necessary for the extension to home environment.

The additions are the following:

For error control protocols:

- Forward Error Correction (FEC) mode (clause 5.8.4 in TS 101 761-4[1]).

For Radio Link Control (RLC) protocols:

- No additions required.

For Association Control Functions protocols:

- Authentication key management (clause 6.9 in TS 101 761-4[1]).

For Radio Resource Control (RRC) protocols:

- Dynamic CC selection (clause 6.7 in TS 101 761-4[1]);
- CC responsibility handover (clause 6.8 in TS 101 761-4[1]);
- DiL Power control for the DM (clause 6.4 in TS 101 761-4[1]);
- Di Link adaptation functions (clause 6.3 in TS 101 761-4[1]);
- Link quality calibration for DM operation (clause 6.5 in TS 101 761-4[1]).

For DLC User Connection Control (DUCC) protocols:

- Fixed slot allocation in DM (clause 6.6.1 in TS 101 761-4[1]);
- DiL multicast connection with QoS negotiation (clause 6.6.2 in TS 101 761-4[1]).

A.5.1 Error control Protocol

A.5.1.1 Roles

Table A.1: Roles

Item	Role	Reference	Status	Support
1	Basic Wireless Terminal WT	4	o.1	
2	Central Controller CC capable WT	4	o.1	

o.1: It is mandatory to support at least one of these items.

According to the answer to items of table A.1 of this proforma, the completed PICS becomes a PICS relative to the home extension for a WT or for a CC. If you want to describe both WT and CC, then two copies of this PICS proforma must be filled in, one copy for each role.

A.5.1.2 Additional capability: FEC mode

A.5.1.2.1 FEC mode - transmitter capabilities

Table A.2: FEC mode - Transmitter

Item	Capabilities	Reference	Status	Support
1	Initialize memories for interleaver at initialization time	5.8.4	m	
2	Complete payload for one RS block code (200 bytes of protected data made from 4 SDUs including up to 3 dummy ones if necessary)	5.8.4	m	
3	Add Sync bits (11 in first PDU, 00 in 3 other ones)	5.8.4	m	
4	Compute FEC scheme	5.8.4	m	
5	Pass contents to lower layer for Xmit	5.8.4	m	
6	Purge memories for interleaver at termination time (2 dummy RS words)	5.8.4	m	

A.5.1.2.2 FEC mode - receiver capabilities

Table A.3: FEC mode - Receiver

Item	Capabilities	Reference	Status	Support
1	Initialize interleaver memories contents	5.8.4	m	
2	Extract payload from received RS block	5.8.4	m	
3	Drop erroneous blocks	5.8.4	m	
4	Drop dummy SDUs	5.8.4	m	
5	Transmit correct SDUs to upper layers	5.8.4	m	

A.5.1.2.3 FEC mode - logical channel for data flow

Table A.4: FEC mode - data channel

Item	Channel	Data Transmitter to Receiver			Data Receiver to Transmitter		
		Reference	Status	Support	Reference	Status	Support
1	UDCH	5.8.4.2	m		5.8.4.2	m	

A.5.1.2.4 FEC mode - logical channel for control flow

Table A.5: FEC mode - control channel

Item	Channel	Data Transmitter to Receiver			Data Receiver to Transmitter		
		Reference	Status	Support	Reference	Status	Support
1	UMCH	5.8.4.2	m		5.8.4.2	m	

A.5.2 RLC protocol

Table A.6: Roles

Item	Role	Reference	Status	Support
1	basic Wireless Terminal WT	4	o.2	
2	Central Controller CC	4	o.2	

o.2: It is mandatory to support at least one of these items.

Comments: .....

.....

A.5.2.1 WT implementation

This clause contains the PICS proforma tables related to the RLC protocol of a Wireless Terminal WT. They need to be completed for the description of WT implementations only.

Prerequisite: A.6/1 -- Wireless Terminal WT

A.5.2.1.1 Additional RLC capabilities

Table A.7: Additional WT procedures

Item	Services supporting:	Reference	Status	Support
1	DiL link adaptation (RRC)	6.3	o	
2	Power control for DM (RRC)	6.4	o	
3	Link quality calibration for DM operation (RRC)	6.5	o	
4	Dynamic CC selection (RRC)	6.7	o	
5	CC responsibility handover (RRC)	6.8	o	
6	Authentication key management (ACF)	6.9	o	
7	Fixed Slot Allocation for DM(DUCC)	6.6.1	o	
8	DiL multicast connection (setup, modify, release) with QoS negotiations (DUCC)	6.6.2	o	

Comments: .....

.....

A.5.2.1.2 Additional PDUs

Table A.8: DM Power control PDUs

Prerequisite: A.7/2 -- Power control for DM operation							
Item	**PDU**	**WT sending**			**WT receiving**		
		Reference	**Status**	**Support**	**Reference**	**Status**	**Support**
1	RLC_DM_POWER_CONTROL	6.4.1	m		6.4.1	m	

Table A.9: Calibration PDUs

Prerequisite: A.7/3 -- Link quality calibration for DM operation							
Item	**PDU**	**WT sending**			**WT receiving**		
		Reference	**Status**	**Support**	**Reference**	**Status**	**Support**
1	RLC_CALIBRATION_MEASUREMENT_TRIGGER		n/a		6.5.2.1	m	
2	RLC_CALIBRATION_MEASUREMENT	6.5.2.2	m			n/a	
3	RLC_CALIBRATION_REPORT_TRIGGER		n/a		6.5.3.1	m	
4	RLC_SHORT_CALIBRATION_REPORT	6.5.3.2	m			n/a	
5	RLC_CALIBRATION_REPORT	6.5.3.2	m			n/a	

Comments: .....

.....

Table A.10: Link Quality Map PDUs

Prerequisite: A.7/3 -- Link quality calibration for DM operation							
Item	**PDU**	**WT sending**			**WT receiving**		
		Reference	**Status**	**Support**	**Reference**	**Status**	**Support**
1	RLC_CALIBRATION_LINKQUALITYMAP_REQUEST	6.5.4	m			n/a	
2	RLC_CALIBRATION_LINKQUALITYMAP		n/a		6.5.4	m	

Comments: .....

.....

Table A.11: PDUs for DiL multicast connection

Prerequisite: A.7/8 -- DiL multicast connection							
Item	**PDU**	**WT sending**			**WT receiving**		
		Reference	**Status**	**Support**	**Reference**	**Status**	**Support**
1	RLC_DM_MC_setup	6.6.2.2	m		6.6.2.2	m	
2	RLC_DM_MC_connect	6.6.2.2	m		6.6.2.2	m	
3	RLC_DM_MC_connect_ACK	6.6.2.2	m		6.6.2.2	m	
4	RLC_DM_MC_connect_complete		n/a		6.6.2.2	m	
5	RLC_DM_MC_connect_complete_ACK	6.6.2.2	m			n/a	
6	RLC_DM_MC_modify_req	6.6.2.5	m			n/a	
7	RLC_DM_MC_modify		n/a		6.6.2.5	m	
8	RLC_DM_MC_modify _ACK	6.6.2.5	m			n/a	
9	RLC_DM_MC_release	6.6.2.6	m		6.6.2.6	m	
10	RLC_DM_MC_release_ACK	6.6.2.6	m		6.6.2.6	m	

Table A.12: PDUs for CC handover

Prerequisite: A.7/5 -- CC handover							
Item	**PDU**	**WT sending**			**WT receiving**		
		Reference	**Status**	**Support**	**Reference**	**Status**	**Support**
1	RLC_CC_HO_NOTIFY		n/a		6.8.1	m	
2	RLC_CC_START_OPERATION		n/a		6.8.1	m	

Comments: .....

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Table A.13: PDUs for Authentication key management

Prerequisite: A.7/6 -- Authentication key management							
Item	**PDU**	**WT sending**			**WT receiving**		
		Reference	**Status**	**Support**	**Reference**	**Status**	**Support**
1	RLC_AUTHENTICATION_KEY_REQUEST	6.9	m			n/a	
2	RLC_AUTHENTICATION_KEY_REQUEST_ACK		n/a		6.9	m	
3	RLC_AUTHENTICATION_KEY_TRANSFER_ACK		n/a		6.9	m	
4	RLC_AUTHENTICATION_KEY_TRANSFER_ACK	6.9	m			n/a	

A.5.2.2 CC implementation

This clause contains the PICS proforma tables related to the RLC protocol of a Central Controller CC. They need to be completed for the description of CC implementations only.

Prerequisite: A.6/2 -- Central Controller CC

A.5.2.2.1 Additional capabilities

Table A.14: Additional CC procedures

Item	**Services supporting:**	**Reference**	**Status**	**Support**
1	DiL link adaptation (RRC)	6.3	o	
2	Power control for DM (RRC)	6.4	n/a	
3	Link quality calibration for DM operation (RRC)	6.5	o	
4	Dynamic CC selection (RRC)	6.7	o	
5	CC responsibility handover (RRC)	6.8	o	
6	Authentication key management (ACF)	6.9	o	
7	Fixed Slot Allocation for DM(DUCC)	6.6.1	o	
8	DiL multicast connection (setup, modify, release) with QoS negotiations (DUCC)	6.6.2	o	

Comments: .....

.....

A.5.2.2.2 Additional PDUs

Table A.15: Calibration PDUs

Prerequisite: A.14/3 -- Link quality calibration for DM operation							
Item	**PDU**	**CC receiving**			**CC sending**		
		Reference	**Status**	**Support**	**Reference**	**Status**	**Support**
1	RLC_CALIBRATION_MEASUREMENT_TRIGGER		n/a		6.5.2.1	m	
2	RLC_CALIBRATION_MEASUREMENT	6.5.2.2	m			n/a	
3	RLC_CALIBRATION_REPORT_TRIGGER		n/a		6.5.3.1	m	
4	RLC_SHORT_CALIBRATION_REPORT	6.5.3.2	m			n/a	
5	RLC_CALIBRATION_REPORT	6.5.3.2	m			n/a	

Comments: .....

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Table A.16: Link Quality Map PDUs

Prerequisite: A.14/3 -- Link quality calibration for DM operation							
Item	**PDU**	**CC receiving**			**CC sending**		
		Reference	**Status**	**Support**	**Reference**	**Status**	**Support**
1	RLC_CALIBRATION_LINKQUALITYMAP_REQUEST	6.5.4	m			n/a	
2	RLC_CALIBRATION_LINKQUALITYMAP		n/a		6.5.4	m	

Comments: .....

.....

Table A.17: PDUs for DiL multicast connection

Prerequisite: A.14/8 -- DiL multicast connection							
Item	**PDU**	**CC receiving**			**CC sending**		
		Reference	**Status**	**Support**	**Reference**	**Status**	**Support**
1	RLC_DM_MC_setup	6.6.2.2	m		6.6.2.2	m	
2	RLC_DM_MC_connect	6.6.2.2	m		6.6.2.2	m	
3	RLC_DM_MC_connect_ACK	6.6.2.2	m		6.6.2.2	m	
4	RLC_DM_MC_connect_complete		n/a		6.6.2.2	m	
5	RLC_DM_MC_connect_complete_ACK	6.6.2.2	m			n/a	
6	RLC_DM_MC_modify_req	6.6.2.5	m			n/a	
7	RLC_DM_MC_modify	6.6.2.5	m		6.6.2.5	m	
8	RLC_DM_MC_modify_ACK	6.6.2.5	m		6.6.2.5	m	
9	RLC_DM_MC_release	6.6.2.6	m		6.6.2.6	m	
10	RLC_DM_MC_release_ACK	6.6.2.6	m		6.6.2.6	m	

Comments: .....

.....

Table A.18: PDUs for CC handover

Prerequisite: A.14/5 -- CC handover responsibility							
Item	**PDU**	**CC receiving**			**CC sending**		
		Reference	**Status**	**Support**	**Reference**	**Status**	**Support**
1	RLC_CC_HO_REQUEST	6.8.1	m		6.8.1	m	
2	RLC_CC_HO_REQUEST_ACK	6.8.1	m		6.8.1	m	
3	RLC_TRANS_CC_DATA	6.8.1	m		6.8.1	m	
4	RLC_TRANS_CC_DATA_ACK	6.8.1	m		6.8.1	m	
5	RLC_START_CC	6.8.1	m		6.8.1	m	
6	RLC_START_CC_ACK	6.8.1	m		6.8.1	m	
7	RLC_CC_HO_NOTIFY		n/a		6.8.1	m	
8	RLC_CC_START_OPERATION		n/a		6.8.1	m	

Table A.19: PDUs for Authentication key management

Prerequisite: A.14/6 -- Authentication key management							
Item	**PDU**	**CC receiving**			**CC sending**		
		Reference	**Status**	**Support**	**Reference**	**Status**	**Support**
1	RLC_AUTHENTICATION_KEY_REQUEST	6.9	m			n/a	
2	RLC_AUTHENTICATION_KEY_REQUEST_ACK		n/a		6.9	m	
3	RLC_AUTHENTICATION_KEY_TRANSFER_ACK		n/a		6.9	m	
4	RLC_AUTHENTICATION_KEY_TRANSFER_ACK	6.9	m			n/a	

A.5.2.3 Additional PDU parameters

This clause contains the PICS proforma tables related to the PDU parameters. Apart from a few PDUs applying to CC only (see details in the description), this clause applies to both Wireless Terminal WT and Central Controller CC. Support column of the tables needs to be completed for the description of the relevant implementation.

A.5.2.3.1 Power control in DM PDU parameters

Table A.20: RLC_DM_POWER_CONTROL parameters

Prerequisite: A.6/1 -- Wireless Terminal WT only AND Prerequisite: A.7/2 -- Power control for DM operation				
Item	**Parameter**	**Reference**	**Status**	**Support**
1	rlc-pdu-type	6.4.1.1, 7	m	
2	extension-type	6.4.1.1, 7	m	
3	dm-duc-type	6.4.1.1, 7	m	
4	wt-tx-level	6.4.1.1, 7	m	
5	adjust-tx	6.4.1.1, 7	m	

A.5.2.3.2 Calibration PDU parameters

Table A.21: RLC_CALIBRATION_MEASUREMENT_TRIGGER parameters

Prerequisite: A.6/1 -- Wireless Terminal WT AND A.7/3 -- Link quality calibration for DM operation OR Prerequisite: A.6/2 -- Central Controller CC AND A.14/3 -- Link quality calibration for DM operation				
Item	**Parameter**	**Reference**	**Status**	**Support**
1	rlc-pdu-type	6.5.2.1, 7	m	
2	extension-type	6.5.2.1, 7	m	
3	trigger-type	6.5.2.1, 7	m	
4	mac-ids	6.5.2.1, 7	m	

Table A.22: RLC_CALIBRATION_MEASUREMENT parameters

Item	**Parameter**	**Reference**	**Status**	**Support**
1	rlc-pdu-type	6.5.2.1, 7	m	
2	extension-type	6.5.2.1, 7	m	
3	peer-mac-id	6.5.2.1, 7	m	
4	source-mac-id	6.5.2.1, 7	m	

Table A.23: RLC_CALIBRATION_REPORT_TRIGGER parameters

Item	**Parameter**	**Reference**	**Status**	**Support**
1	rlc-pdu-type	6.5.3.1, 7	m	
2	extension-type	6.5.3.1, 7	m	
3	trigger-type	6.5.3.1, 7	m	
4	mac-ids	6.5.3.1, 7	m	

Table A.24: RLC_SHORT_CALIBRATION_REPORT parameters

Item	Parameter	Reference	Status	Support
1	rlc-pdu-type	6.5.3.2, 7	m	
2	extension-type	6.5.3.2, 7	m	
3	rep-buf-status	6.5.3.2, 7	m	
4	mac-id-1	6.5.3.2, 7	m	
5	rss2-of-wt1	6.5.3.2, 7	m	
6	mac-id-2	6.5.3.2, 7	m	
7	rss2-of-wt2	6.5.3.2, 7	m	

Table A.25: RLC_CALIBRATION_REPORT parameters

Item	Parameter	Reference	Status	Support
1	rlc-pdu-type	6.5.3.2, 7	m	
2	extension-type	6.5.3.2, 7	m	
3	rep-buf-status	6.5.3.2, 7	m	
4	cal-report-list	6.5.3.2, 7	m	

Comments: .....

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A.5.2.3.3 Link Quality Map PDU parameters

Table A.26: RLC_CALIBRATION_LINKQUALITYMAP_REQUEST parameters

Prerequisite: A.6/1 -- Wireless Terminal WT AND A.7/3 -- Link quality calibration for DM operation OR Prerequisite: A.6/2 -- Central Controller CC AND A.14/3 -- Link quality calibration for DM operation				
Item	**Parameter**	**Reference**	**Status**	**Support**
1	rlc-pdu-type	6.5.4, 7	m	
2	extension-type	6.5.4, 7	m	
3	mac-id	6.5.4, 7	m	
4	request-type	6.5.4, 7	m	

Comments: .....

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Table A.27: RLC_CALIBRATION_LINKQUALITYMAP parameters

Item	Parameter	Reference	Status	Support
1	rlc-pdu-type	6.5.4, 7	m	
2	extension-type	6.5.4, 7	m	
3	map-ext-ind	6.5.4, 7	m	
4	complete-report-list	6.5.4, 7	m	

Comments: .....

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A.5.2.3.4 PDU parameters for DiL multicast connections

Prerequisite: A.6/1 -- Wireless Terminal WT AND A.7/8 -- DiL multicast connection

OR

Prerequisite: A.6/2 -- Central Controller CC AND A.14/8 -- DiL multicast connection

Table A.28: RLC_DM_MC_SETUP parameters

Prerequisite:				
Item	**Parameter**	**Reference**	**Status**	**Support**
1	rlc-pdu-type	6.6.2.2, 7	m	
2	extension-type	6.6.2.2, 7	m	
3	peer-mac-id	6.6.2.2, 7	m	
4	source-mac-id	6.6.2.2, 7	m	
5	cl-id	6.6.2.2, 7	m	
6	duc-ext-ind	6.6.2.2, 7	m	
7	min-req-receivers	6.6.2.2, 7	m	
8	cl-conn-attr-length	6.6.2.2, 7	m	
9	duc-descr-list	6.6.2.2, 7	m	
10	cl-common-attr	6.6.2.2, 7	m	

Comments: .....

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Table A.29: RLC_DM_MC_CONNECT parameters

Prerequisite:				
Item	**Parameter**	**Reference**	**Status**	**Support**
1	rlc-pdu-type	6.6.2.2, 7	m	
2	extension-type	6.6.2.2, 7	m	
3	peer-mac-id	6.6.2.2, 7	m	
4	source-mac-id	6.6.2.2, 7	m	
5	cl-id	6.6.2.2, 7	m	
6	cl-conn-attr-length	6.6.2.2, 7	m	
7	duc-descr-list	6.6.2.2, 7	m	

Comments: .....

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Table A.30: RLC_DM_MC_CONNECT_ACK parameters

Prerequisite:				
Item	**Parameter**	**Reference**	**Status**	**Support**
1	rlc-pdu-type	6.6.2.2, 7	m	
2	extension-type	6.6.2.2, 7	m	
3	peer-mac-id	6.6.2.2, 7	m	
4	source-mac-id	6.6.2.2, 7	m	
5	cl-id	6.6.2.2, 7	m	
6	cl-conn-attr-length	6.6.2.2, 7	m	
7	dlcc-descr-list	6.6.2.2, 7	m	

Comments: .....

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Table A.31: RLC_DM_MC_CONNECT_COMPLETE parameters

Prerequisite:				
Item	**Parameter**	**Reference**	**Status**	**Support**
1	rlc-pdu-type	6.6.2.2, 7	m	
2	extension-type	6.6.2.2, 7	m	
3	peer-mac-id	6.6.2.2, 7	m	
4	source-mac-id	6.6.2.2, 7	m	
5	dlcc-id-list	6.6.2.2, 7	m	

Comments: .....

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Table A.32: RLC_DM_MC_CONNECT_COMPLETE_ACK parameters

Prerequisite:				
Item	**Parameter**	**Reference**	**Status**	**Support**
1	rlc-pdu-type	6.6.2.2, 7	m	
2	extension-type	6.6.2.2, 7	m	
3	peer-mac-id	6.6.2.2, 7	m	
4	source-mac-id	6.6.2.2, 7	m	

Comments: .....

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Table A.33: RLC_DM_MC_MODIFY_REQ parameters

Prerequisite:				
Item	**Parameter**	**Reference**	**Status**	**Support**
1	rlc-pdu-type	6.6.2.5, 7	m	
2	extension-type	6.6.2.5, 7	m	
3	peer-mac-id	6.6.2.5, 7	m	
4	source-mac-id	6.6.2.5, 7	m	
5	cl-conn-attr-length	6.6.2.5, 7	m	
6	duc-descr-list	6.6.2.5, 7	m	

Comments: .....

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Table A.34: RLC_DM_MC_MODIFY parameters

Prerequisite:				
Item	**Parameter**	**Reference**	**Status**	**Support**
1	rlc-pdu-type	6.6.2.5, 7	m	
2	extension-type	6.6.2.5, 7	m	
3	peer-mac-id	6.6.2.5, 7	m	
4	source-mac-id	6.6.2.5, 7	m	
5	start-mac-frame	6.6.2.5, 7	m	
6	cl-conn-attr-length	6.6.2.5, 7	m	
7	duc-descr-list	6.6.2.5, 7	m	

Comments: .....

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Table A.35: RLC_DM_MC_MODIFY_ACK parameters

Prerequisite:				
Item	**Parameter**	**Reference**	**Status**	**Support**
1	rlc-pdu-type	6.6.2.5, 7	m	
2	extension-type	6.6.2.5, 7	m	
3	peer-mac-id	6.6.2.5, 7	m	
4	source-mac-id	6.6.2.5, 7	m	
5	start-mac-frame	6.6.2.5, 7	m	
6	cl-conn-attr-length	6.6.2.5, 7	m	
7	dlcc-descr-list	6.6.2.5, 7	m	

Comments: .....

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Table A.36: RLC_DM_MC_RELEASE parameters

Prerequisite:				
Item	**Parameter**	**Reference**	**Status**	**Support**
1	rlc-pdu-type	6.6.2.6, 7	m	
2	extension-type	6.6.2.5, 7	m	
3	peer-mac-id	6.6.2.6, 7	m	
4	source-mac-id	6.6.2.6, 7	m	
5	dlcc-id-list	6.6.2.6, 7	m	
6	release-cause	6.6.2.6, 7	m	

Comments: .....

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Table A.37: RLC_DM_MC_RELEASE_ACK parameters

Prerequisite:				
Item	**Parameter**	**Reference**	**Status**	**Support**
1	rlc-pdu-type	6.6.2.6, 7	m	
2	extension-type	6.6.2.6, 7	m	
3	peer-mac-id	6.6.2.6, 7	m	
4	source-mac-id	6.6.2.6, 7	m	
5	dlcc-id-list	6.6.2.6, 7	m	

Comments: .....

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A.5.2.3.5 PDU parameters for CC responsibility handover

Table A.38: RLC_CC_HO_REQUEST parameters

Prerequisite: A.6/2 -- Central Controller CC AND Prerequisite: A.14/5 -- CC handover responsibility				
Item	**Parameter**	**Reference**	**Status**	**Support**
1	rlc-pdu-type	6.8.1, 7	m	
2	extension-type	6.8.1, 7	m	

Comments: .....

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Table A.39: RLC_CC_HO_REQUEST_ACK parameters

Prerequisite: A.6/2 -- Central Controller CC AND Prerequisite: A.14/5 -- CC handover responsibility				
Item	**Parameter**	**Reference**	**Status**	**Support**
1	rlc-pdu-type	6.8.1, 7	m	
2	extension-type	6.8.1, 7	m	

Table A.40: RLC_TRANS_CC_DATA parameters

Prerequisite: A.6/2 -- Central Controller CC AND Prerequisite: A.14/5 -- CC handover responsibility				
Item	**Parameter**	**Reference**	**Status**	**Support**
1	rlc-pdu-type	6.8.1, 7	m	
2	extension-type	6.8.1, 7	m	
3	ext-ind	6.8.1, 7	m	
4	data	6.8.1, 7	m	

Comments: .....

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Table A.41: RLC_TRANS_CC_DATA_ACK parameters

Prerequisite: A.6/2 -- Central Controller CC AND Prerequisite: A.14/5 -- CC handover responsibility				
Item	**Parameter**	**Reference**	**Status**	**Support**
1	rlc-pdu-type	6.8.1, 7	m	
2	extension-type	6.8.1, 7	m	
3	sn	6.8.1, 7	m	
4	rr-flag	6.8.1, 7	m	

Comments: .....

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Table A.42: RLC_START_CC parameters

Prerequisite: A.6/2 -- Central Controller CC AND Prerequisite: A.14/5 -- CC handover responsibility				
Item	**Parameter**	**Reference**	**Status**	**Support**
1	rlc-pdu-type	6.8.1, 7	m	
2	extension-type	6.8.1, 7	m	
3	start-mac-frame	6.8.1, 7	m	

Comments: .....

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Table A.43: RLC_START_CC_ACK parameters

Prerequisite: A.6/2 -- Central Controller CC AND Prerequisite: A.14/5 -- CC handover responsibility				
Item	**Parameter**	**Reference**	**Status**	**Support**
1	rlc-pdu-type	6.8.1, 7	m	
2	extension-type	6.8.1, 7	m	

Comments: .....

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Table A.44: RLC_CC_HO_NOTIFY parameters

Prerequisite: A.6/1 -- Wireless Terminal WT OR A.6/2 -- Central Controller CC AND A.14/5 -- CC handover responsibility				
Item	**Parameter**	**Reference**	**Status**	**Support**
1	rlc-pdu-type	6.8.1, 7	m	
2	extension-type	6.8.1, 7	m	

Comments: .....

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Table A.45: RLC_CC_START_OPERATION parameters

Prerequisite: A.6/1 -- Wireless Terminal WT OR A.6/2 -- Central Controller CC AND A.14/5 -- CC handover responsibility				
Item	**Parameter**	**Reference**	**Status**	**Support**
1	rlc-pdu-type	6.8.1, 7	m	
2	extension-type	6.8.1, 7	m	

A.5.2.3.6 PDU parameters for Authentication key management

Prerequisite: A.6/1 -- Wireless Terminal WT AND A.7/6 -- Authentication key management

OR

A.6/2 -- Central Controller CC AND A.14/6 -- Authentication key management

Table A.46: RLC_AUTHENTICATION_KEY_REQUEST parameters

Prerequisite:				
Item	**Parameter**	**Reference**	**Status**	**Support**
1	rlc-pdu-type	6.9, 7	m	
2	extension-type	6.9, 7	m	
3	mt-id-number-length	6.9, 7	m	
4	mt-id-number	6.9, 7	m	

Table A.47: RLC_AUTHENTICATION_KEY_REQUEST_ACK parameters

Prerequisite:				
Item	**Parameter**	**Reference**	**Status**	**Support**
1	rlc-pdu-type	6.9, 7	m	
2	extension-type	6.9, 7	m	

Table A.48: RLC_AUTHENTICATION_KEY_TRANSFER parameters

Prerequisite:				
Item	**Parameter**	**Reference**	**Status**	**Support**
1	rlc-pdu-type	6.9, 7	m	
2	extension-type	6.9, 7	m	
3	valid-key	6.9, 7	m	
4	auth-key-length	6.9, 7	m	
5	pin-code-length	6.9, 7	m	
6	auth-key	6.9, 7	m	
7	pin-code	6.9, 7	m	

Comments: .....

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Table A.49: RLC_AUTHENTICATION_KEY_TRANSFER_ACK parameters

Prerequisite:				
Item	**Parameter**	**Reference**	**Status**	**Support**
1	rlc-pdu-type	6.9, 7	m	
2	extension-type	6.9, 7	m	
3	valid-key	6.9, 7	m	
4	md5-of-auth-key	6.9, 7	m	

Comments: .....

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A.5.2.3.7 Other Home extension PDU parameters and their values

Table A.50: RLC_LINK_CAPABILITY parameters

Item	Parameter	Reference	HD value	Supported
1	rlc-pdu-type			
2	profile-vid-list	6.1.3.1	list of profile IDs	
3	freq-band			
4	rss-value			
5	support64QAM			
6	direct-mode-cap	6.1.3.1	set to 1 for dm-capabilities	
7	cyclic-prefix			
8	support-fca			
9	support-fsa	6.1.3.1	set to 1 for support-fsa	
10	time-gap-ach-uplink			
11	cl-vid-present			
12	ho-cap			
13	cc-ho-cap	6.1.3.1	cc-ho-supported	
14	duty-cycle			
15	arq-delay-rx			
16	arq-delay-tx			
17	authentication-encryption-list			
18	dm-attributes	6.1.3.1	m	
19	cl-vid-list	6.1.3.1	list of CL IDs	

Table A.51: RLC_LINK_CAPABILITY_ACK parameters

Prerequisite:				
Item	**Parameter**	**Reference**	**HD value**	**Supported**
1	rlc-pdu-type			
2	profile-vid-list-selected			
3	freq-band			
4	rss-value			
5	apt-address-length			
6	support64QAM			
7	direct-mode-use-common-key	6.1.3.1	use-common-key	
8	direct-mode-cap			
9	cyclic-prefix			
10	support-fca			
11	support-fsa	6.1.3.1	set to 1 for support-fsa	
12	cl-vid-present			
13	cc-ho-cap			
14	arq-delay-rx			
15	arq-delay-tx			
16	auth-encr-selected			
17	dm-attributes	6.1.3.1	m	
18	cl-vid-list-selected			

Table A.52: RLC_RBCH_ASSOCIATION parameters

Item	**Parameter**	**Reference**	**HD value**	**Supported**
1	rlc-pdu-type			
2	Network-operator-id			
3	profile-vid-list	6.1.3.1	list of profile Ids	

A.6 Timers

Table A.53: Timers

Item	**<Item description>**	**Reference**	**Status**	**Support**	**Value**	
					Allowed	**Supported**
1	T_dm_mc_setup_wt	annex C	m		16 frames	
2	T_dm_mc_connect_wt	annex C	m		16 frames	
3	T_dm_mc_modify_req_wt	annex C	m		16 frames	
4	T_dm_mc_release_wt	annex C	m		16 frames	
5	T_dm_mc_power_control	annex C	m		1 024 frames	
6	T_dm_mc_setup_cc	annex C	m		16 frames	
7	T_dm_mc_connect_cc	annex C	m		16 frames	
8	T_dm_mc_connect_cmpt_cc	annex C	m		16 frames	
9	T_dm_mc_modify_cc	annex C	m		16 frames	
10	T_dm_mc_release_cc	annex C	m		16 frames	
11	T_cc_ho_request_cc	annex C	m		16 frames	
12	T_trans_cc_data_cc	annex C	m		6 msec	
13	T_start_cc_cc	annex C	m		16 frames	
14	T_dm_mc_connect_ack_wt	annex C	m		$4^{max\_setup\_time}$ frames	
15	T_trigger_lifetime	annex C	m		50 msec	

Annex B (informative): Bibliography

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

History

Document history		
V1.1.1	December 2001	Publication
V1.2.1	July 2003	Publication
V1.3.1	August 2004	Publication