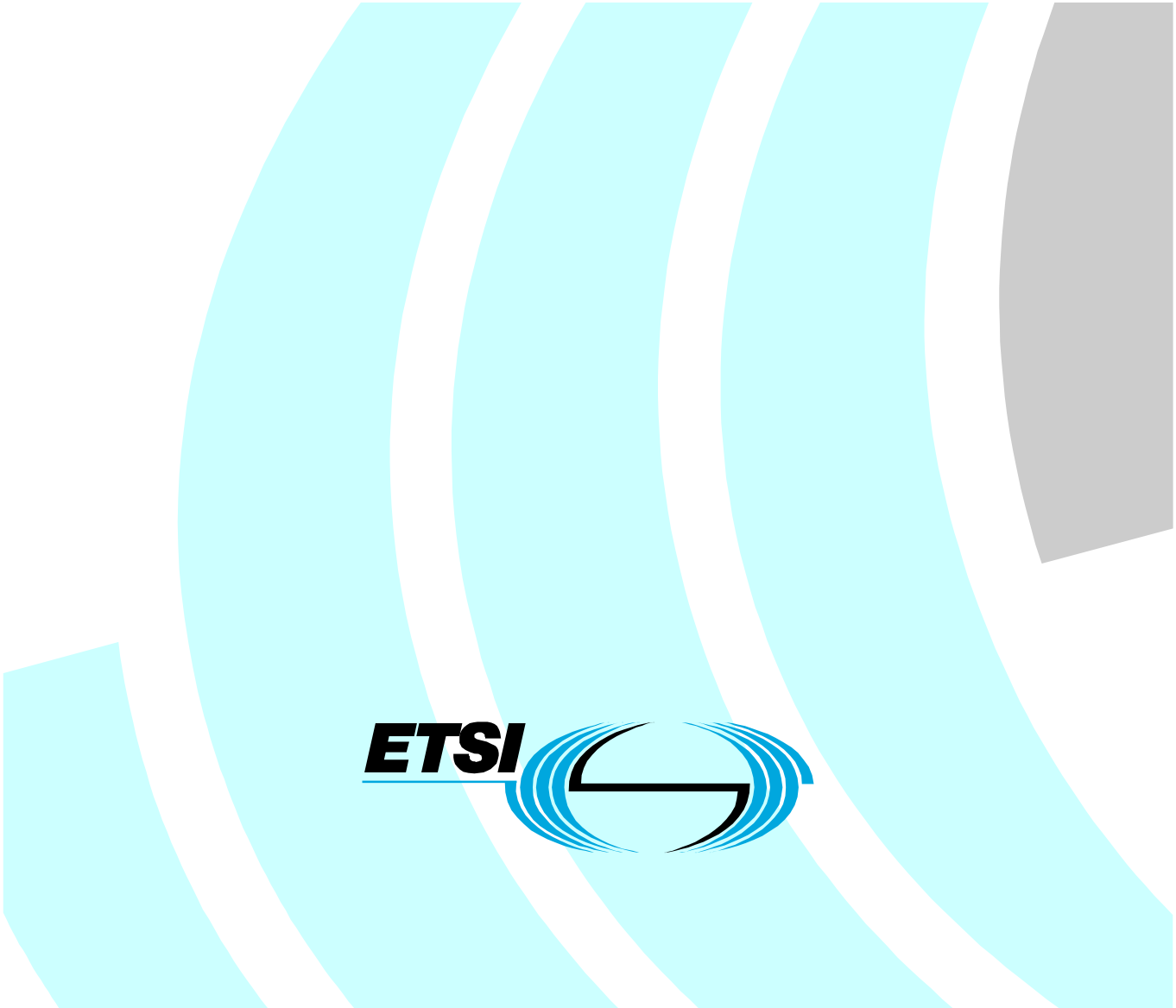
ETSI TS 101 823-4-2 V1.1.1 (2001-12)

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 2: Test Suite Structure and
Test Purposes (TSS&TP) specification**



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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 4 sub-part 2 of a multi-part deliverable covering Broadband Radio Access Networks (BRAN); HIPERLAN Type 2; Conformance testing for the Data Link Control (DLC) layer, as identified below:

Part 1: "Basic data transport function";

Part 2: "Radio Link Control (RLC) sublayer";

Part 3: "Profile for Business Environment";

Part 4: "Extension for Home Environment";

Sub-part 1: "Protocol Implementation Conformance Statement (PICS) proforma";

Sub-part 2: "Test Suite Structure and Test Purposes (TSS&TP) specification";

Sub-part 3: "Abstract Test Suite (ATS) specification".

Part 5: "Profile for Home Environment".

1 Scope

The present document contains the Test Suite Structure (TSS) and Test Purposes (TP) to test the BRAN HIPERLAN Type 2; Data Link Control (DLC) layer; Extension for Home Environment [3].

The objective of the present document is to provide a basis for conformance tests for BRAN HIPERLAN type 2 equipment giving a high probability of air interface inter-operability between different manufacturer's BRAN HIPERLAN type 2 equipment.

The ISO standard for the methodology of conformance testing (ISO/IEC 9646-1 [13] and ISO/IEC 9646-2 [14]) as well as the ETSI rules for conformance testing (ETS 300 406 [12]) are used as a basis for the test methodology.

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.

[1] ETSI TS 101 761-1 (V1.1.1): "Broadband Radio Access Networks (BRAN); HIPERLAN Type 2; Data Link Control (DLC) Layer; Part 1: Basic Data Transport Functions".

[2] ETSI TS 101 761-2 (V1.1.1): "Broadband Radio Access Networks (BRAN); HIPERLAN Type 2; Data Link Control (DLC) layer; Part 2: Radio Link Control (RLC) Sublayer".

[3] ETSI TS 101 761-4 (V1.2.1): "Broadband Radio Access Networks (BRAN); HIPERLAN Type 2; Data Link Control (DLC) layer; Part 4: Extension for Home Environment".

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

[5] ETSI TS 101 823-1-2 (V1.2.1): "Broadband Radio Access Networks (BRAN); HIPERLAN Type 2; Conformance Testing for the Data Link Control (DLC) Protocol; Part 1: Basic Data Transport Function; Sub-part 2: Test Suite Structure and Test Purposes (TSS&TP) specification".

[6] ETSI TS 101 823-1-3 (V1.2.1): "Broadband Radio Access Networks (BRAN); HIPERLAN Type 2; Conformance Testing for the Data Link Control (DLC) Protocol; Part 1: Basic Data Transport Function; Sub-part 3: Abstract Test Suite (ATS) specification ".

[7] ETSI TS 101 823-2-1 (V1.2.1): "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".

[8] ETSI TS 101 823-2-2 (V1.2.1): "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 2: Test Suite Structure and Test Purposes (TSS&TP) specification".

[9] ETSI TS 101 823-2-3 (V1.2.1): "Broadband Radio Access Networks (BRAN); HIPERLAN Type 2; Conformance testing for the Data Link Control (DLC) layer; Part 2: Radio Link Control (RLC) Protocol; Sub-part 3: Abstract Test Suite (ATS) specification".

[10] ETSI TS 101 823-4-1 (V1.1.1): "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".

[11] ETSI TS 101 823-4-3 (V1.1.1): "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 3: Abstract Test Suite (ATS) specification".

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

[13] ISO/IEC 9646-1: "Information technology - Open Systems Interconnection - Conformance testing methodology and framework - Part 1: General concepts". (See also ITU-T Recommendation X.290 (1991)).

[14] ISO/IEC 9646-2: "Information technology - Open Systems Interconnection - Conformance testing methodology and framework - Part 2: Abstract test suite specification". (See also ITU-T Recommendation X.291 (1991)).

[15] ISO/IEC 9646-3: "Information technology - Open Systems Interconnection - Conformance testing methodology and framework - Part 3: The tree and tabular combined notation". (See also ITU-T Recommendation X.292 (1992)).

[16] ISO/IEC 9646-4: "Information technology; Open Systems Interconnection; Conformance testing methodology and framework; Part 4: Test realization".

[17] ISO/IEC 9646-5: "Information technology; Open Systems Interconnection; Conformance testing methodology and framework; Part 5: Requirements on test laboratories and clients for the Conformance Assessment process".

[18] ISO/IEC 9646-6: "Information technology - Open Systems Interconnection - Conformance testing methodology and framework - Part 6: Protocol profile test specification".

[19] ISO/IEC 9646-7: "Information technology - Open Systems Interconnection - Conformance testing methodology and framework - Part 7: Implementation conformance statement".

3 Definitions and abbreviations

3.1 Definitions

For the purposes of the present document, the terms and definitions given in ISO/IEC 9646-7 [19], in TS 101 761-2 [2] and TS 101 761-4 [3] apply.

3.2 Abbreviations

For the purposes of the present document, the abbreviations given in ISO/IEC 9646-1 [13], ISO/IEC 9646-6 [18], ISO/IEC 9646-7 [19], in TS 101 761-2 [2] in TS 101 761-4 [3] and the following apply:

AP	Access Point
BI	Invalid Behaviour
BO	Inopportune Behaviour
BV	Valid Behaviour
CA	Capability tests
CC	Central Controller
CL	Convergence Layer
DLC	Data Link Control
DM	Direct Mode
DUC	DLC User Connection
IUT	Implementation Under Test
MAC	Medium Access Control
MT	Mobile Terminal
PDU	Protocol Data Unit
PICS	Protocol Implementation Conformance Statement
RLC	Radio Link Control
TP	Test Purposes
TSS	Test Suite Structure

4 Test suite structure

4.1 Structure

Figure 1 shows the Data Link Control (DLC) layer; Extension for Home Environment Test Suite Structure (TSS) including its subgroups defined for the conformance testing.

Test Suite	Protocol group	Protocol subgroup	Test group				
			CA	BV	BI	BO	TI
XHE-AP/XHE-MT	Link Control procedures	Terminal association for multiple convergence layers	x				
		Power Control in Direct Link Phase	x				
		Link Quality Calibration for DM operation	x				
		DLC User Connection Control	x				
		Dynamic CC Selection	x				
		CC Responsibility Handover	x				
		Authentication Key Management	x				
	U-plane Error Control procedures	FEC error control procedures	x				

Figure 1: TSS for HIPERLAN 2 DLC HE

The test suite is structured as a tree with a first level defined as XHE-AP or XHE-MT representing the protocol group "DLC HE for AP and DLC HE for MT".

4.2 Test groups

The test groups are organized in three levels. The first level creates two protocol groups representing the protocol services. The second level separates the protocol services in functional modules. The last level in each branch contains one or more of the standard ISO subgroups CA, BV, BI, BO and TI.

4.2.1 Protocol groups

The protocol groups identify the DLC HE services: Link Control procedures, and U-plane Error Control procedures, as defined in TS 101 761-4 [3].

4.2.1.1 Link Control procedures

The Link Control procedures group is divided in seven functional modules. The first functional module identifies the Terminal association for multiple convergence layers procedures. The second functional module identifies the Power Control in Direct Link Phase procedures. The third functional module distinguishes the Link Quality Calibration for DM operation procedures. The fourth functional module distinguishes the DLC User Connection Control procedures. The fith functional module distinguishes the Dynamic CC Selection procedures. The sixth functional module distinguishes the CC Responsibility Handover procedures. The last functional module identifies the Authentication Key Management procedures.

4.2.1.2 U-plane Error Control procedures

The U-plane Error Control procedures group is divided in one functional module. The functional module is representing the FEC error control procedures.

4.2.2 Main test groups

The main test groups are the capability group, the valid behaviour group, the invalid behaviour group and the inoportune behaviour group.

4.2.2.1 Capability (CA) tests

This test sub group shall provide limited testing of the major IUT capabilities aiming to insure that the claimed capabilities are correctly supported, according to the PICS.

4.2.2.2 Valid Behaviour (BV) tests

This test sub group shall verify that the IUT reacts in conformity with TS 101 761-4 [3], after receipt or exchange of valid Protocol Data Units (PDUs). Valid PDUs means that the exchange of messages and the content of the exchanged messages are considered as valid.

4.2.2.3 Invalid Behaviour (BI) tests

This test sub group shall verify that the IUT reacts in conformity with TS 101 761-4 [3], after receipt of a syntactically invalid PDU.

4.2.2.4 Inoportune Behaviour (BO) tests

This test sub group shall verify that the IUT reacts in conformity with TS 101 761-4 [3], after receipt of a syntactically correct PDU not expected in the actual message exchange.

4.2.2.5 Timer (TI) tests

This test sub group shall verify that the IUT reacts in conformity with TS 101 761-4 [3], after timer activity (start, stop, expiration, etc.).

5 Test Purposes (TP)

5.1 Introduction

5.1.1 TP definition conventions

The TPs are defined following particular rules as shown in table 1.

Table 1: TP definition rules

TP Id according to the TP naming conventions	Reference. Initial condition. Stimulus. Expected behaviour.
TP Id	The TP Id is a unique identifier it shall be specified according to the TP naming conventions defined in clause 5.1.2.
Reference	The reference should contain the references of the subject to be validated by the actual TP (specification reference, clause, and paragraph).
Condition	The condition defines in which initial state the IUT has to be to apply the actual TP.
Stimulus	The stimulus defines the test event to which the TP is related.
Expected behaviour	Definition of the events that are expected from the IUT to conform to the base specification.

5.1.2 TP naming conventions

The identifier of the TP is built according to table 2.

Table 2: TP naming convention

Identifier:	**TP/<st>/<pg>/<fm>/<x>-<nnn>**		
	<st> = side type	AP	Access Point
		MT	Mobile Terminal
	<pg> = protocole group	LCP	Link Control procedures
		ECP	U-plane Error Control procedures
	<fm> = functional module	TC	Terminal association for multiple convergence layers
		PC	Power Control in Direct Link Phase
		LQ	Link Quality Calibration for DM operation
		DC	DLC User Connection Control
		DS	Dynamic CC Selection procedures
		CH	CC Responsibility Handover
		AK	Authentication Key Management
		FP	FEC error control procedures
	x = Type of testing	CA	Capability Tests
		BV	Valid Behaviour Tests
		BI	Invalid Behaviour Tests
		BO	Inoportune Behaviour Tests
		TI	Timer Tests
	<nnn> = sequential number	(000-999)	Test Purpose Number

EXAMPLE: TP/MT/LCP/DS/BV-010 is the tenth purpose for the valid behaviour testing of the Dynamic CC Selection procedures of the Link Control procedures implemented at MT side.

5.1.3 Sources of TP definitions

All TPs are specified according to TS 101 761-4 [3].

5.2 Test purposes for AP/CC

5.2.1 Terminal association for multiple convergence layers

TP/AP/LCP/TC/CA-000	Reference: TS 101 761-4 [3] - clause 6.2 Initial condition: Link_Agreed_or_Encryption_active_or_Authenticated Only for IUT that supports DLC home extensions. Check, that: after receiving the RLC_INFO message, the IUT replies to the LT with a RLC_INFO_ACK message for each selected CL and, after the last exchange, considers the WT (LT) as MT_Associated_to_AP.

5.2.2 Link Quality Calibration for DM operation

TP/AP/LCP/LQ/CA-000	Reference: TS 101 761-4 [3] - clause 6.5.2 Initial condition: IUT is the AP/CC. LT is acting as WT1 and as WT2. Only for IUT that supports DLC home extensions. Check, that: when the IUT wishes to start a calibration measurement phase for all WTs, it sends a relevant RLC_CALIBRATION_MEASUREMENT_TRIGGER message without a Mac_Id liste.
TP/AP/LCP/LQ/CA-001	Reference: TS 101 761-4 [3] - clause 6.5.2 Initial condition: IUT is the AP/CC. LT is acting as WT1 and as WT2. Only for IUT that supports DLC home extensions. Check, that: when the IUT wishes to start a calibration measurement phase for a set of WTs, it sends a relevant RLC_CALIBRATION_MEASUREMENT_TRIGGER message containing a Mac_Id liste.
TP/AP/LCP/LQ/CA-002	Reference: TS 101 761-4 [3] - clause .5.3 Initial condition: IUT is the AP/CC. LT is acting as WT1 and as WT2. Only for IUT that supports DLC home extensions. Check, that: when the IUT wishes to start a calibration-reporting phase for all WTs, it sends a relevant RLC_CALIBRATION_REPORT_TRIGGER message without a Mac_Id liste.
TP/AP/LCP/LQ/CA-003	Reference: TS 101 761-4 [3] - clause 6.5.3 Initial condition: IUT is the AP/CC. LT is acting as WT1 and as WT2. Only for IUT that supports DLC home extensions. Check, that: when the IUT wishes to start a calibration-reporting phase for a set of WTs, it sends a relevant RLC_CALIBRATION_REPORT_TRIGGER message containing a Mac_Id liste.
TP/AP/LCP/LQ/CA-004	Reference: TS 101 761-4 [3] - clause 6.5.4 Initial condition: IUT is the AP/CC. LT is acting as WT1 and as WT2. Only for IUT that supports DLC home extensions. Check, that: when the IUT wishes to distribute the map of connectivity, it sends a relevant RLC_CALIBRATION_LINKQUALITYMAP message.
TP/AP/LCP/LQ/CA-005	Reference: TS 101 761-4 [3] - clause 6.5.4 Initial condition: IUT is the AP/CC. LT is acting as WT1 and as WT2. Only for IUT that supports DLC home extensions. Check, that: after receiving a RLC_CALIBRATION_LINKQUALITYMAP_REQUEST message from the WT1, the IUT replies to the LT with a relevant RLC_CALIBRATION_LINKQUALITYMAP message.

5.2.3 DLC User Connection Control

TP/AP/LCP/DC/CA-000	Reference: TS 101 761-4 [3] - clause 6.6 Initial condition: IUT is the AP/CC. LT is acting as WT1 and as WT2. WT1 and WT2 have joined the same multicast group. WT1 has sent a RLC_DM_MC_SETUP message to become the sender of the multicast group. Only for IUT that supports DLC home extensions. Check, that: after receiving the RLC_DM_MC_SETUP message from WT1, the IUT replies to the LT with a RLC_DM_MC_CONNECT message.
TP/AP/LCP/DC/CA-001	Reference: TS 101 761-4 [3] - clause 6.6 Initial condition: IUT is the AP/CC. LT is acting as WT1 and as WT2. WT1 and WT2 have joined the same multicast group. IUT has sent a RLC_DM_MC_CONNECT message to WT1 who needs to become the sender of the multicast group. Only for IUT that supports DLC home extensions. Check, that: after receiving the RLC_DM_MC_CONNECT_ACK message from the WT1, the IUT sends a relevant RLC_DM_MC_SETUP message to the WT2.
TP/AP/LCP/DC/CA-002	Reference: TS 101 761-4 [3] - clause 6.6 Initial condition: IUT is the AP/CC. LT is acting as WT1 and as WT2. WT1 and WT2 have joined the same multicast group. IUT has sent a RLC_DM_MC_SETUP message to the WT2 to forward the direct link multicast setup to the receiver. Only for IUT that supports DLC home extensions. Check, that: after receiving the RLC_DM_MC_CONNECT message from the WT2, the IUT replies to the LT with a RLC_DM_MC_CONNECT_ACK message and sends a relevant RLC_DM_MC_CONNECT_COMPLETE message to WT1.
TP/AP/LCP/DC/CA-003	Reference: TS 101 761-4 [3] - clause 6.6 Initial condition: IUT is the AP/CC. LT is acting as WT1 and as WT2. WT1 and WT2 have joined the same multicast group. IUT has sent a RLC_DM_MC_CONNECT_COMPLETE message to the WT1. Only for IUT that supports DLC home extensions. Check, that: after completion of the DM multicast setup procedure, the U-plane is established between the WT1 as sender and the WT2 as receiver.
TP/AP/LCP/DC/CA-004	Reference: TS 101 761-4 [3] - clause 6.6 Initial condition: IUT is the AP/CC. LT is acting as WT1 and as WT2. WT1 has joined a multicast group and has taken the sender role. WT2 has just terminated to join the same multicast group. Only for IUT that supports DLC home extensions. Check, that: after completion of the group join procedure, the IUT sends a relevant RLC_DM_MC_SETUP message to the WT2 to let it know the MAC ID of the sender and other parameters concerning the multicast connection.
TP/AP/LCP/DC/CA-005	Reference: TS 101 761-4 [3] - clause 6.6.2.5 Initial condition: IUT is the AP/CC. LT is acting as WT1 and as WT2. WT1 and WT2 have joined the same multicast group. WT1 has taken the sender role and WT2 is one of the receivers. WT1 has sent a RLC_DM_MC_MODIFY_REQ message to modify the multicast group. Only for IUT that supports DLC home extensions. Check, that: after receiving the RLC_DM_MC_MODIFY_REQ message from the WT1, the IUT replies to the LT with a RLC_DM_MC_MODIFY message and sends a RLC_DM_MC_MODIFY message to WT2.
TP/AP/LCP/DC/CA-006	Reference: TS 101 761-4 [3] - clause 6.6.2.5 Initial condition: IUT is the AP/CC. LT is acting as WT1 and as WT2. WT1 and WT2 have joined the same multicast group. WT1 has taken the sender role and WT2 is one of the receivers. IUT has sent a RLC_DM_MC_MODIFY message to all of the WTs of the multicast group including the sender. Only for IUT that supports DLC home extensions. Check, that: after having sent the RLC_DM_MC_MODIFY message max_retrans times without receiving the RLC_DM_MC_MODIFY_ACK message from the WT1, the IUT release the multicast connection by sending a RLC_DM_MC_RELEASE message to all WTs including the sender (WT1).

TP/AP/LCP/DC/CA-007	Reference: TS 101 761-4 [3] - clause 6.6.2.5 Initial condition: IUT is the AP/CC. LT is acting as WT1 and as WT2. WT1 and WT2 have joined the same multicast group. WT1 has taken the sender role and WT2 is one of the receivers. The min_required_receivers parameter is greather or egal to 2. IUT has sent a RLC_DM_MC_MODIFY message to all of the WTs of the multicast group including the sender. Only for IUT that supports DLC home extensions. Check, that: after having sent the RLC_DM_MC_MODIFY message max_retrans times without receiving the RLC_DM_MC_MODIFY_ACK message from the WT2, the IUT release the multicast connection by sending a RLC_DM_MC_RELEASE message to all WTs including the sender (WT1).
TP/AP/LCP/DC/CA-008	Reference: TS 101 761-4 [3] - clause 6.6.2.5 Initial condition: IUT is the AP/CC. LT is acting as WT1 and as WT2. WT1 and WT2 have joined the same multicast group. WT1 has taken the sender role and WT2 is one of the receivers. The min_required_receivers parameter is egal to 0. IUT has sent a RLC_DM_MC_MODIFY message to all of the WTs of the multicast group including the sender. Only for IUT that supports DLC home extensions. Check, that: after having sent the RLC_DM_MC_MODIFY message max_retrans times without receiving the RLC_DM_MC_MODIFY_ACK message from the WT2, the IUT release the multicast connection with WT2 by sending a RLC_DM_MC_RELEASE message.
TP/AP/LCP/DC/CA-009	Reference: TS 101 761-4 [3] - clause 6.6.2.5 Initial condition: IUT is the AP/CC. LT is acting as WT1 and as WT2. WT1 and WT2 have joined the same multicast group. WT1 has taken the sender role and WT2 is one of the receivers. IUT has sent a RLC_DM_MC_MODIFY message to all of the WTs of the multicast group including the sender. Only for IUT that supports DLC home extensions. Check, that: after receiving all RLC_DM_MC_MODIFY_ACK messages from the WTs including the sender, the multicast connection is modified.
TP/AP/LCP/DC/CA-010	Reference: TS 101 761-4 [3] - clause 6.6.2.6 Initial condition: IUT is the AP/CC. LT is acting as WT1 and as WT2. WT1 and WT2 have joined the same multicast group. WT1 has taken the sender role and WT2 is one of the receivers. WT1 has sent a RLC_DM_MC_RELEASE message to the IUT. Only for IUT that supports DLC home extensions. Check, that: after receiving a RLC_DM_MC_RELEASE message from the WT1, the IUT replies to the LT with a RLC_DM_MC_RELEASE_ACK message and sends a RLC_DM_MC_RELEASE message to all receivers.
TP/AP/LCP/DC/CA-011	Reference: TS 101 761-4 [3] - clause 6.6.2.6 Initial condition: IUT is the AP/CC. LT is acting as WT1, WT2 and WT3. WT1, WT2 and WT3 have joined the same multicast group. WT1 has taken the sender role. WT2 and WT3 are the receivers. WT2 has sent a RLC_DM_MC_RELEASE message to the IUT. Only for IUT that supports DLC home extensions. Check, that: after receiving a RLC_DM_MC_RELEASE message from the WT2, the IUT replies to the LT with a RLC_DM_MC_RELEASE_ACK message and if the number of the remaining receivers is less than min_required_receivers, the IUT release the multicast connection by sending a RLC_DM_MC_RELEASE message to all WTs including the sender.
TP/AP/LCP/DC/CA-012	Reference: TS 101 761-4 [3] - clause 6.6.2.6 Initial condition: IUT is the AP/CC. LT is acting as WT1, WT2 and WT3. WT1, WT2 and WT3 have joined the same multicast group. WT1 has taken the sender role. WT2 and WT3 are the receivers. WT2 has sent a RLC_DM_MC_RELEASE message to the IUT. Only for IUT that supports DLC home extensions. Check, that: after receiving a RLC_DM_MC_RELEASE message from the WT2, the IUT replies to the LT with a RLC_DM_MC_RELEASE_ACK message without futher actions if the number of the remaining receivers is not less than min_required_receivers.
TP/AP/LCP/DC/CA-013	Reference: TS 101 761-4 [3] - clause 6.6.2.6 Initial condition: IUT is the AP/CC. LT is acting as WT1 and as WT2. WT1 and WT2 have joined the same multicast group. WT1 has taken the sender role and WT2 is one of the receivers. Only for IUT that supports DLC home extensions. Check, that: when the IUT wishes to release a multicast connection, it sends a RLC_DM_MC_RELEASE message to the sender of the group (WT1).

5.2.4 Dynamic CC Selection

TP/AP/LCP/DS/CA-000	Reference: TS 101 761-4 [3] - clause 6.7 Initial condition: IUT is switched on. No CC exists in the network. Only for IUT that supports DLC home extensions and is CC-capable H/2–HD. Check, that the IUT, after a probing period, takes the CC responsability for the entire network.
TP/AP/LCP/DS/CA-001	Reference: TS 101 761-4 [3] - clause 6.7 Initial condition: IUT is switched on. One CC exists in the network. Only for IUT that supports DLC home extensions and is CC-capable H/2–HD. Check, that the IUT, after a probing period, takes a normal WT role.

5.2.5 CC Responsibility Handover

TP/AP/LCP/CH/CA-000	Reference: TS 101 761-4 [3] - clause 6.8 Initial condition: IUT is a CC-capable H/2–HD. LT is acting as AP/CC and as WT. AP/CC has sent a RLC_CC_HO_REQUEST message to the IUT to give it the CC responsability. Only for IUT that supports DLC home extensions and is CC-capable H/2–HD. Check, that: after receiving the RLC_CC_HO_REQUEST message from the AP/CC, the IUT replies to the LT with a relevant RLC_CC_HO_REQUEST_ACK message.
TP/AP/LCP/CH/CA-001	Reference: TS 101 761-4 [3] - clause 6.8 Initial condition: IUT is a CC-capable H/2–HD. LT is acting as AP/CC and as WT. Only for IUT that supports DLC home extensions and is CC-capable H/2–HD. Check, that: when the IUT wishes to leave its CC responsability, it sends a RLC_CC_HO_REQUEST message to a candidat CC.
TP/AP/LCP/CH/CA-002	Reference: TS 101 761-4 [3] - clause 6.8 Initial condition: IUT is a CC-capable H/2–HD. LT is acting as AP/CC and as WT. IUT has sent a RLC_CC_HO_REQUEST message to leave the CC responsability. Only for IUT that supports DLC home extensions and is CC-capable H/2–HD. Check, that: after receiving the RLC_CC_HO_REQUEST_ACK message from the candidat CC, the IUT sends a RLC_CC_HO_NOTIFY message to all active WTs.
TP/AP/LCP/CH/CA-003	Reference: TS 101 761-4 [3] - clause 6.8 Initial condition: IUT is a CC-capable H/2–HD. LT is acting as AP/CC and as WT. IUT has sent a RLC_CC_HO_NOTIFY message to all active WTs. Only for IUT that supports DLC home extensions and is CC-capable H/2–HD. Check, that: after exchange with its convergence layers, the IUT sends a RLC_TRANS_CC_DATA message to the CC candidat.
TP/AP/LCP/CH/CA-004	Reference: TS 101 761-4 [3] - clause 6.8 Initial condition: IUT is a CC-capable H/2–HD. LT is acting as AP/CC and as WT. IUT has sent a RLC_TRANS_CC_DATA message to the CC candidat. Only for IUT that supports DLC home extensions and is CC-capable H/2–HD. Check, that: after receiving the RLC_TRANS_CC_DATA_ACK message from the CC candidat, the IUT replies to the LT with a relevant RLC_START_CC message.
TP/AP/LCP/CH/CA-005	Reference: TS 101 761-4 [3] - clause 6.8 Initial condition: IUT is a CC-capable H/2–HD. LT is acting as AP/CC and as WT. IUT has initiated the procedure to leave the CC responsability. Only for IUT that supports DLC home extensions and is CC-capable H/2–HD. Check, that: after receiving the RLC_START_CC_ACK message from the CC candidat, the IUT has leave its CC responsability to becomes a standard WT.
TP/AP/LCP/CH/CA-006	Reference: TS 101 761-4 [3] - clause 6.8 Initial condition: IUT is a CC-capable H/2–HD. LT is acting as AP/CC and as WT. AP/CC has initiated the procedure to leave the CC responsability and has sent a RLC_START_CC message to the CC candidat (IUT). Only for IUT that supports DLC home extensions and is CC-capable H/2–HD. Check, that: after receiving the RLC_START_CC message from the old CC, the IUT replies to the LT with a relevant RLC_START_CC_ACK message, sends a RLC_CC_START_OPERATION message to all active WTs and has taken the CC responsability for the all sub-network.

5.2.6 Subscription of a new device

TP/AP/LCP/AK/CA-000	Reference: TS 101 761-4 [3] - clause 6.9 Initial condition: IUT is acting as AP/CC. LT is acting as WT. Subscription phase encryption is terminated. Only for IUT that supports DLC home extensions. Check, that: after receiving the RLC_AUTHENTICATION_KEY_REQUEST message from the new WT, the IUT replies to the LT with a relevant RLC_AUTHENTICATION_KEY_REQUEST_ACK message.
TP/AP/LCP/AK/CA-001	Reference: TS 101 761-4 [3] - clause 6.9 Initial condition: IUT is acting as AP/CC. LT is acting as WT. IUT has sent a RLC_AUTHENTICATION_KEY_REQUEST_ACK message. Only for IUT that supports DLC home extensions. Check, that: after validation by the user of the identity of the new WT, the IUT sends to the LT an RLC_AUTHENTICATION_KEY_TRANSFERT message.

5.3 Test purposes for MT/WT

5.3.1 Terminal association for multiple convergence layers

TP/MT/LCP/TC/CA-000	Reference: TS 101 761-4 [3] - 6.2 Initial condition: Link_Agreed_or_Encryption_active_or_Authenticated Only for IUT that supports DLC home extensions. Check, that: after termination of the MT_Id obtain process, the IUT initiates the info transfer procedure for each selected CL by sending the relevant number of RLC_INFO messages to the LT.

5.3.2 Power Control in Direct Link Phase

TP/MT/LCP/PC/CA-000	Reference: TS 101 761-4 [3] - clause 6.4 Initial condition: A DM unicast DUC setup procedure is in connect phase. IUT, acting as WT1, has sent a RLC_DM_CONNECT_ACK message to the AP/CC. LT is acting as AP/CC and as WT2. Only for IUT that supports DLC home extensions. Check, that: after receiving the RLC_DM_CONNECT_COMPLETE message from the AP/CC and the RLC_DM_POWER_CONTROL message from the WT2, the IUT replies to the LT with a RLC_DM_CONNECT_COMPLETE_ACK message.
TP/MT/LCP/PC/CA-001	Reference: TS 101 761-4 [3] - clause 6.4 Initial condition: A DM unicast DUC setup procedure is in connect phase. IUT, acting as WT1, has sent a RLC_DM_CONNECT_ACK message to the AP/CC. LT is acting as AP/CC and as WT2. Only for IUT that supports DLC home extensions. Check, that: after receiving the RLC_DM_CONNECT_COMPLETE message from the AP/CC and not the RLC_DM_POWER_CONTROL message from the WT2, the IUT replies to the LT with a RLC_DM_RELEASE message.
TP/MT/LCP/PC/CA-002	Reference: TS 101 761-4 [3] - clause 6.4 Initial condition: A DM unicast DUC is established. IUT is acting as WT1. LT is acting as AP/CC and as WT2. Only for IUT that supports DLC home extensions. Check, that: after receiving the RLC_DM_POWER_CONTROL message from the WT2, the IUTadjusts its transmit power.
TP/MT/LCP/PC/CA-003	Reference: TS 101 761-4 [3] - clause 6.4 Initial condition: A DM unicast DUC is established. IUT is acting as WT1. LT is acting as AP/CC and as WT2. Only for IUT that supports DLC home extensions. Check, that: when WT2 does not react to a recommendation of a previous power control message, the IUT retransmits the RLC_DM_POWER_CONTROL message.
TP/MT/LCP/PC/CA-004	Reference: TS 101 761-4 [3] - clause 6.4 Initial condition: A DM multicast/broadcast DUC is established. IUT is acting as WT1and is receiver of the multicast/broadcast DUC. LT is acting as AP/CC and as WT2. WT2 is the sender of the multicast/broadcast DUC. Only for IUT that supports DLC home extensions. Check, that: the IUT transmits regularly the RLC_DM_POWER_CONTROL message not less than once every T_mc_dm_power_control time.

5.3.3 Link Quality Calibration for DM operation

TP/MT/LCP/LQ/CA-000	Reference: TS 101 761-4 [3] - clause 6.5.2 Initial condition: IUT is the WT1. LT is acting as AP/CC. Only for IUT that supports DLC home extensions. Check, that: after receiving a RLC_CALIBRATION_MEASUREMENT_TRIGGER message from the AP/CC, the IUT replies to the LT with a relevant RLC_CALIBRATION_MEASUREMENT message.
TP/MT/LCP/LQ/CA-001	Reference: TS 101 761-4 [3] - clause 6.5.3 Initial condition: IUT is the WT1. LT is acting as AP/CC. Only for IUT that supports DLC home extensions. Check, that: after receiving a RLC_CALIBRATION_REPORT_TRIGGER message from the AP/CC, the IUT replies to the LT with a relevant RLC_SHORT_CALIBRATION_REPORT message or a relevant RLC_CALIBRATION_REPORT message
TP/MT/LCP/LQ/CA-002	Reference: TS 101 761-4 [3] - clause 6.5.4 Initial condition: IUT is the WT1. LT is acting as AP/CC. Only for IUT that supports DLC home extensions. Check, that: when the IUT wishes to know the map of connectivity, it sends a relevant RLC_CALIBRATION_LINKQUALITYMAP_REQUEST message.

5.3.4 DLC User Connection Control

TP/MT/LCP/DC/CA-000	Reference: TS 101 761-4 [3] - clause 6.6 Initial condition: IUT is the WT1. LT is acting as AP/CC and as WT2. WT1 and WT2 have joined the same multicast group. Only for IUT that supports DLC home extensions. Check, that: when the IUT wishes to become the sender of a multicast connection, it sends a RLC_DM_MC_SETUP message to the AP/CC.
TP/MT/LCP/DC/CA-001	Reference: TS 101 761-4 [3] - clause 6.6 Initial condition: IUT is the WT1. LT is acting as AP/CC and as WT2. WT1 and WT2 have joined the same multicast group. IUT has sent a RLC_DM_MC_SETUP message to become the sender of the multicast group. Only for IUT that supports DLC home extensions. Check, that: after receiving the RLC_DM_MC_CONNECT message from the AP/CC, the IUT replies to the LT with a relevant RLC_DM_MC_CONNECT_ACK message.
TP/MT/LCP/DC/CA-002	Reference: TS 101 761-4 [3] - clause 6.6 Initial condition: IUT is the WT1. LT is acting as AP/CC and as WT2. WT1 and WT2 have joined the same multicast group. IUT has sent a RLC_DM_MC_CONNECT_ACK message. Only for IUT that supports DLC home extensions. Check, that: after receiving the RLC_DM_MC_CONNECT_COMPLETE message from the AP/CC, the IUT replies to the LT with a RLC_DM_MC_CONNECT_COMPLETE_ACK message and the U-plane is established between the WT1 as sender and the WT2 as receiver.
TP/MT/LCP/DC/CA-003	Reference: TS 101 761-4 [3] - clause 6.6.2.5 Initial condition: IUT is the WT1. LT is acting as AP/CC and as WT2. WT1 and WT2 have joined the same multicast group. WT1 has taken the sender role and WT2 is one of the receivers. Only for IUT that supports DLC home extensions. Check, that: when the IUT wishes to modify a multicast connection, it sends a RLC_DM_MC_MODIFY_REQ message to the AP/CC.
TP/MT/LCP/DC/CA-004	Reference: TS 101 761-4 [3] - clause 6.6.2.5 Initial condition: IUT is the WT1. LT is acting as AP/CC and as WT2. WT1 and WT2 have joined the same multicast group. WT1 has taken the sender role and WT2 is one of the receivers. AP/CC has sent a RLC_DM_MC_MODIFY message to all of the WTs of the multicast group including the sender. Only for IUT that supports DLC home extensions. Check, that: after receiving the RLC_DM_MC_MODIFY message from the AP/CC, the IUT replies to the LT with a RLC_DM_MC_MODIFY_ACK message and the multicast connection is modified.
TP/MT/LCP/DC/CA-005	Reference: TS 101 761-4 [3] - clause 6.6.2.6 Initial condition: IUT is the WT1. LT is acting as AP/CC and as WT2. WT1 and WT2 have joined the same multicast group. WT1 has taken the sender role and WT2 is one of the receivers. Only for IUT that supports DLC home extensions. Check, that: when the IUT wishes to release a multicast connection, it sends a RLC_DM_MC_RELEASE message to the AP/CC.
TP/MT/LCP/DC/CA-006	Reference: TS 101 761-4 [3] - clause 6.6.2.6 Initial condition: IUT is the WT1. LT is acting as AP/CC and as WT2. WT1 and WT2 have joined the same multicast group. WT1 has taken the sender role and WT2 is one of the receivers. AP/CC has sent a RLC_DM_MC_RELEASE message. Only for IUT that supports DLC home extensions. Check, that: after receiving the RLC_DM_MC_RELEASE message from the AP/CC, the IUT replies to the LT with a RLC_DM_MC_RELEASE_ACK message and the multicast connection is released.

5.3.5 Subscription of a new device

TP/MT/LCP/AK/CA-000	Reference: TS 101 761-4 [3] - clause 6.9 Initial condition: IUT is acting as WT. LT is acting as AP/CC. Subscription phase encryption is terminated. Only for IUT that supports DLC home extensions. Check, that: when subscription phase encryption is terminated, the IUT sends to the LT a relevant RLC_AUTHENTICATION_KEY_REQUEST message.
TP/MT/LCP/AK/CA-001	Reference: TS 101 761-4 [3] - clause 6.9 Initial condition: IUT is acting as WT. LT is acting as AP/CC. IUT has sent a RLC_AUTHENTICATION_KEY_REQUEST message and has received a RLC_AUTHENTICATION_KEY_REQUEST_ACK message. Only for IUT that supports DLC home extensions. Check, that: after receiving the RLC_AUTHENTICATION_KEY_TRANSFERT message from the new WT, the IUT replies to the LT with a relevant RLC_AUTHENTICATION_KEY_TRANSFERT_ACK message.
TP/MT/LCP/AK/CA-002	Reference: TS 101 761-4 [3] - clause 6.9 Initial condition: IUT is acting as WT. LT is acting as AP/CC. IUT has sent a RLC_AUTHENTICATION_KEY_TRANSFERT_ACK message. Only for IUT that supports DLC home extensions. Check, that: after transmission of the RLC_AUTHENTICATION_KEY_TRANSFERT_ACK message, the IUT starts a dissasociation procedure.

History

Document history		
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