ETSI TS 102 385-3 V2.5.1 (2008-12)
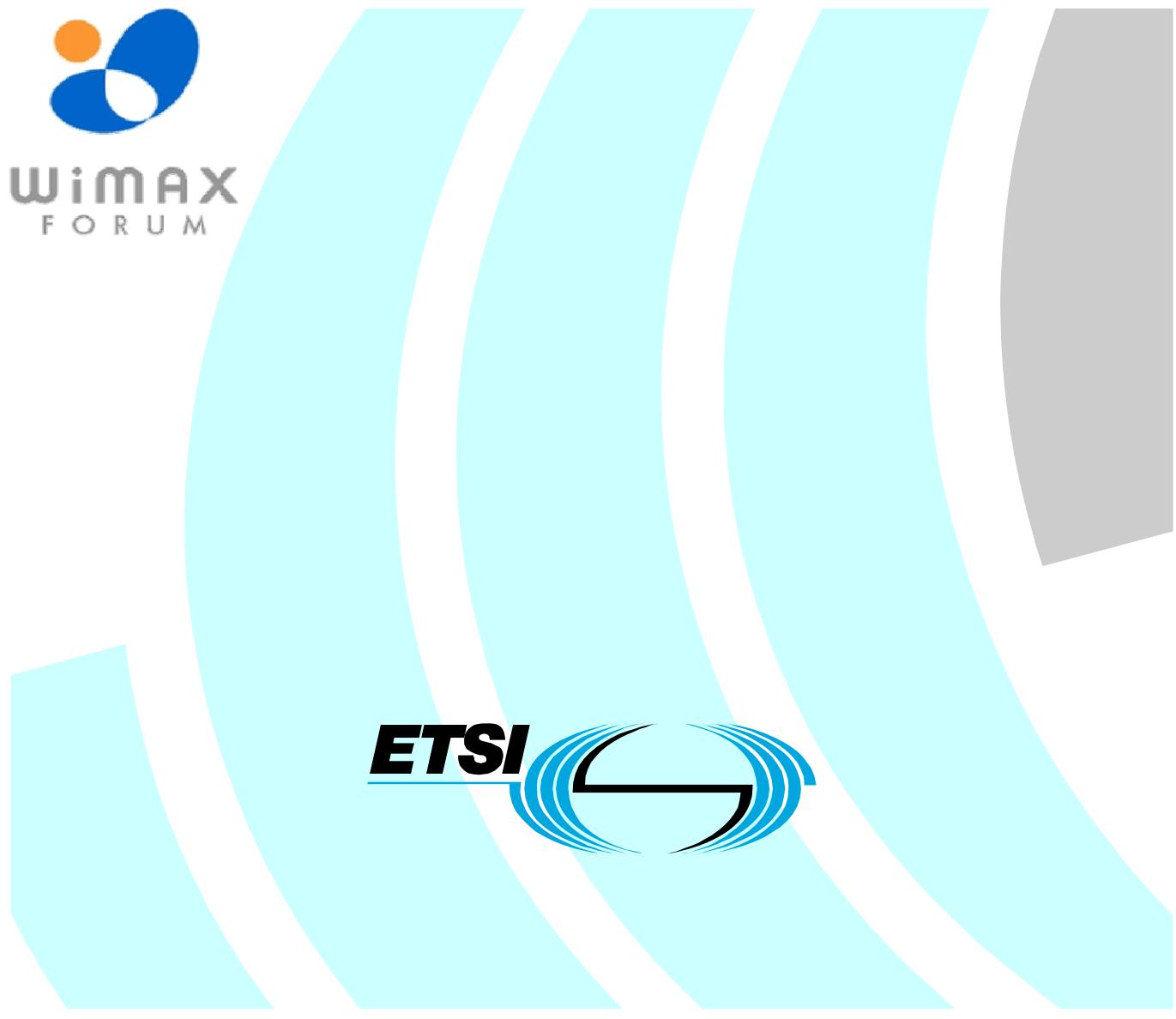
Technical Specification

**Broadband Radio Access Networks (BRAN);
HiperMAN;
Conformance Testing for WiMAX/HiperMAN 1.2.1;
Part 3: Abstract Test Suite (ATS)**

Reference

RTS/BRAN-004T002-3R5

Keywords

ATS, broadband, DLC, FWA, HiperMAN, MAC,
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Foreword

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

The present document was developed on the basis of the Abstract Test Suite (ATS) specification for HiperMAN systems that was in the advanced stage of development when the work was reoriented to produce joint HiperMAN/WiMAX specifications.

The present document is part 3 of a multi-part deliverable covering Broadband Radio Access Networks (BRAN); HiperMAN; Conformance Testing for WiMAX/HiperMAN 1.2.1, as identified below:

Part 1: "Protocol Implementation Conformance Statement (PICS) proforma";

Part 2: "Test Suite Structure and Test Purposes (TSS&TP)";

Part 3: "Abstract Test Suite (ATS)".

1   Scope

The present document contains the Abstract Test Suite (ATS) to test BRAN HiperMAN1.2.1/WiMAX systems for conformance.

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

The ISO standard for the methodology of conformance testing (ISO/IEC 9646-1 [5] and ISO/IEC 9646-2 [6]) as well as the ETSI rules for conformance testing (ETS 300 406 [4]) are used as a basis for the test methodology.

Annex A provides the Tree and Tabular Combined Notation (TTCN) part of the ATS.

Annex B provides the Partial Protocol Implementation Extra Information for Testing (PIXIT) Proforma of the SS side ATS.

Annex C provides the Protocol Conformance Test Report (PCTR) Proforma of the SS side ATS.

2   References

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- For a specific reference, subsequent revisions do not apply.

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  - if it is accepted that it will be possible to use all future changes of the referenced document for the purposes of the referring document;

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NOTE: While any hyperlinks included in this clause were valid at the time of publication ETSI cannot guarantee their long term validity.

2.1   Normative references

The following referenced documents are indispensable for the application of the present document. For dated references, only the edition cited applies. For non-specific references, the latest edition of the referenced document (including any amendments) applies.

[1]   ETSI TS 102 178 (V1.2.1): "Broadband Radio Access Networks (BRAN); HiperMAN; Data Link Control (DLC) layer".

[2]   IEEE 802.16-2004: "IEEE Standard for local and metropolitan area networks - Part 16: Air Interface for Fixed Broadband Wireless Access Systems".

[3]   IEEE 802.16e-2005: "IEEE Standard for Local and Metropolitan Area Networks - Part 16: Air Interface for Fixed and Mobile Broadband Wireless Access Systems - Amendment for Physical and Medium Access Control Layers for Combined Fixed and Mobile Operation in Licensed Bands".

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

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

[6]   ISO/IEC 9646-2/ITU-T Recommendation X.291: "Information technology - Open Systems Interconnection - Conformance testing methodology and framework - Part 2: Abstract Test Suite specification".

[7]   ISO/IEC 9646-6/ITU-T Recommendation X.295: "Information technology - Open Systems Interconnection - Conformance testing methodology and framework - Part 6: Protocol profile test specification".

[8]   ISO/IEC 9646-7/ITU-T Recommendation X.296: "Information technology - Open Systems Interconnection - Conformance testing methodology and framework - Part 7: Implementation Conformance Statements".

[9]   ETSI ES 201 873-1: "Methods for Testing and Specification (MTS); The Testing and Test Control Notation version 3; Part 1: TTCN-3 Core Language".

[10]   ETSI TS 102 210: "Broadband Radio Access Networks (BRAN); HIPERMAN; System profiles".

2.2   Informative references

[i.1]   ISO 3166 (all parts): "Codes for the representation of names of countries and their subdivisions".

3   Definitions and abbreviations

3.1   Definitions

For the purposes of the present document, the terms and definitions given in ISO/IEC 9646-7 [8], TS 102 178 [1], and IEEE 802.16-2004 [2] as corrected by Corrigendum 1 of IEEE 802.16e-2005 [3] apply.

3.2   Abbreviations

For the purposes of the present document, the abbreviations given in TS 102 178 [1], ISO/IEC 9646-1 [5], ISO/IEC 9646-6 [7], ISO/IEC 9646-7 [8], IEEE 802.16-2004 [2] as corrected by Corrigendum 1 of IEEE 802.16-2005 [3] and the following apply:

ATM	Abstract Test Method
ATS	Abstract Test Suite
BS	Base Station
BW	BandWidth
CID	Connection IDentifier
CS	Convergence Sublayer
DHCP	Dynamic Host Configuration Protocol
DLC	Data Link Control
IP	Internet Protocol
IUT	Implementation Under Test
MAC	Medium Access Control
OFDM	Orthogonal Frequency Division Multiplexing
OFDMA	Orthogonal Frequency Division Multiple Access
PCTR	Protocol Conformance Test Report

PIXIT	Partial Protocol Implementation Extra Information for Testing
REQ	REQuest
RNG	RaNGing
RSP	ReSPonse
RTG	Receive/Transmit Transition Gap
SS	Subscriber Station
SUT	System Under Test
TC	Test Case
TFTP	Trivial File Transfer Protocol
TLV	Type, Length, Value
TP	Test Purposes
TTCN	Tree and Tabular Combined Notation
TTG	Transmit/Receive Transition Gap

4   Abstract Test Method (ATM)

This clause describes the ATM used to test the IEEE 802.16-2004 [2] and HiperMAN DLC layer at the BS side and at the SS side.

4.1   IEEE 802.16-2004 and ETSI HiperMAN protocol layers

Figure 1 shows the mapping of the protocol layers of IEEE 802.16-2004 [2] and ETSI HiperMAN [1]. In the remaining text and figures of the present documentument only the ETSI terminology is used.
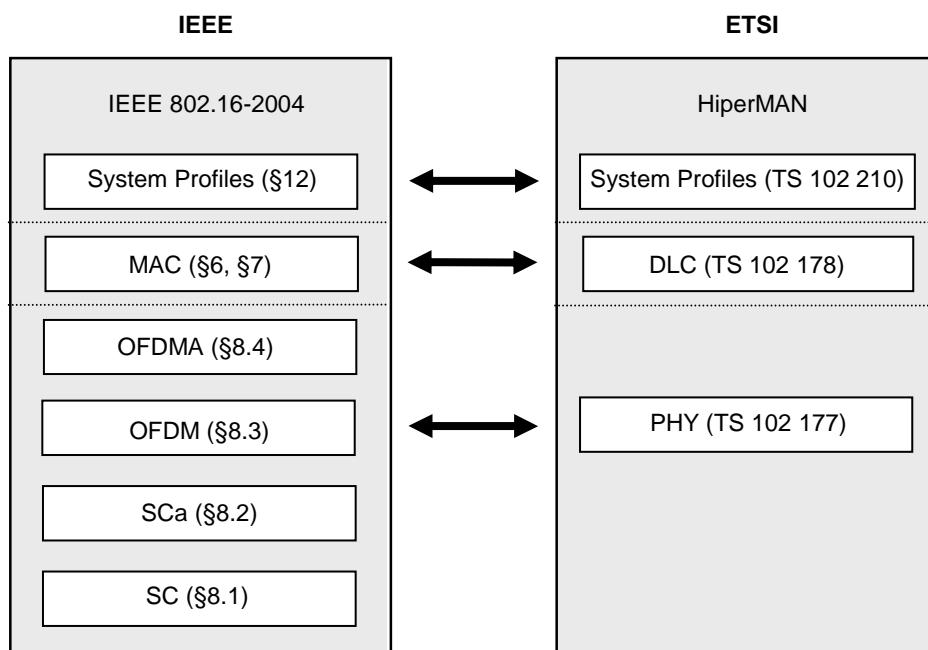
Figure 1: IEEE 802.16-2004 [2] and ETSI HiperMAN protocol layers

4.2   SS Test architecture

Figure 2 describes the DLC SS Test Configuration for testing the DLC layer of a product implementing the HiperMAN base standard. More information for this architecture is provided below.
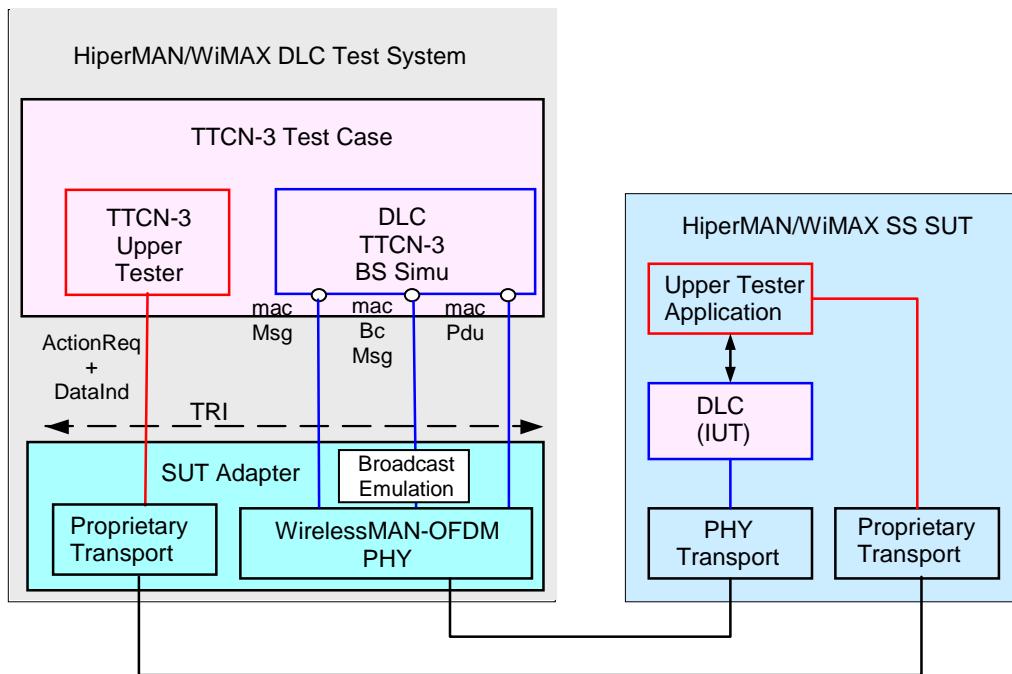
Figure 2: DLC SS Test Configuration

The DLC SS Test Configuration provides 1 test component:

- DLC TTCN-3 uses macMsg port to send and receive MAC management messages that belong to the Initial Ranging, Basic, Primary and Secondary connection. Final verdicts are set on the receive statements. Additionally to the MAC message received, the real raw data received before decoding by the test adapter are necessary for log interpretation and fields computation (i.e. checks of the HMAC digest for example). It is also important to have received the EC bit to know if the received content is encrypted and the EKS key number to know which of the two keys has to be used for decrypting.

- DLC TTCN-3 uses macPdu port to send and receive MAC PDUs. Final verdicts are set on the receive statements.

- DLC TTCN-3 controls via external functions the Upper Tester Application. The Upper Tester Application allows triggering of the IUT actions. Final verdicts are set on the return status of the external functions.

- DLC TTCN-3 controls via external functions the configuration of the Test Adapter. Final verdicts are set on the return status of the external functions.

4.3 BS Test architecture

Figure 3 describes the DLC BS Test Configuration for testing the DLC layer of a product implementing the HiperMAN base standard. More information for this architecture is provided below.
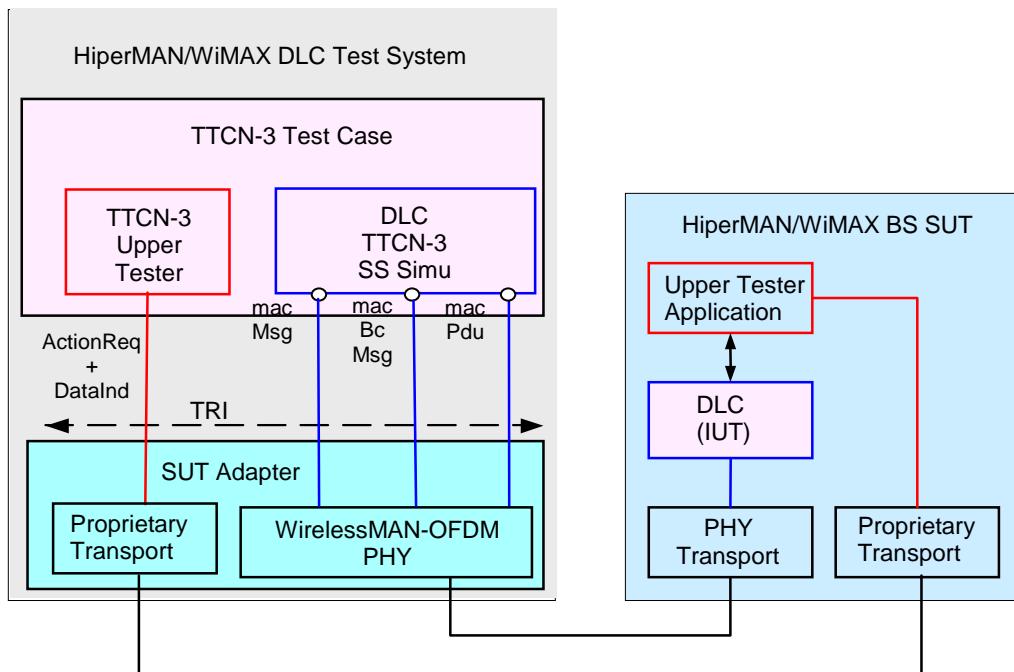
Figure 3: DLC BS Test Configuration

The DLC BS Test Configuration provides 1 test component:

- DLC TTCN-3 uses macMsg port to send and receive MAC management messages that belong to the Initial Ranging, Basic, Primary and Secondary connection. Final verdicts are set on the receive statements. Additionally to the MAC message received, the real raw data received before decoding by the test adapter is necessary for log interpretation and fields computation (i.e. checks of the HMAC digest for example). It is also important to receive the EC bit to know if the received content is encrypted and the EKS key number to know which of the two keys has to be used for decrypting.

- DLC TTCN-3 uses macBcMsg port to receive MAC management messages that belong to the Broadcast connection. Final verdicts are set on the return status of the receive functions. The MAC management messages that the Test Adapter shall support are listed in table 1.

- DLC TTCN-3 uses macPdu port to send and receive MAC PDUs. Final verdicts are set on the receive statements.

- The broadcast emulation handles the reception of the broadcast messages.

- DLC TTCN-3 controls via external functions the Upper Tester Application. Upper Tester Application allows triggering IUT actions. Final verdicts are set on the return status of the external functions.

- DLC TTCN-3 controls via external functions the configuration of the Test Adapter. Final verdicts are set on the return status of the external functions.

Table 1: Port macBcMsg

MAC management messages
DlMapMessage
UlMapMessage
DcdMessage
UcdMessage

5   Untestable Test Purposes

This clause gives a list of TP, which are not implemented in the ATS due to the chosen ATM or other restrictions.

Table 2: Untestable TP

Test Case Name	Reason
void	

6   ATS conventions

The ATS conventions are intended to give a better understanding of the ATS but they also describe the conventions made for the development of the ATS. These conventions shall be considered during any later maintenance or further development of the ATS.

The ATS conventions contain two clauses, the naming conventions and the implementation conventions. The naming conventions describe the structure of the naming of all ATS elements. The implementation conventions describe the functional structure of the ATS.

To define the ATS, the guidelines of ETS 300 406 [4] were considered.

6.1   Testing conventions

6.1.1   Testing States

BS Null: The BS is switched on and sends broadcast messages.

SS Null: The SS is switched on and is ready to receive broadcast messages.

6.1.2   HiperMAN default values: Reception and transmission at ATS level

IEEE 802.16-2004 [2] as corrected by Corrigendum 1 of IEEE 802.16e-2005 [3] (but not taking into account the Amendment 2) lists many default TLV values. IEEE 802.16-2004 [2] says that devices SHOULD NOT transmit TLVs if the default value applies. However, this is NOT a requirement. Thus, one tested device may not transmit the default TLVs (or a subset of these default TLVs) while another may transmit all TLVs including the defaults. Including all the possible combinations of sent and received default TLVs in an ATS is problematic:

- Therefore, for ATS purposes, all TLVs are assumed to be sent and received at the ATS level.

- The Test Adapter will fill in the missing received TLVs with a TLV containing the default value and pass it up to the ATS.

- The Test Adapter may or may not transmit default TLVs received from the ATS to the IUT. This is a test equipment vendor decision.

6.1.3   Templates

- Separate templates are defined for use in sending and receiving operations.

- Template definitions should avoid using matching attributes such as "*" or "?" for complete structured values, e.g. record or set of values.

- PIXIT parameter values are passed as parameters into templates.

6.1.4   Functions

The WMx ATS differentiates between external functions for which only the signature is specified and functions completely defined in the ATS. The completely defined functions are separated according to their use for SS or BS testing and preamble and postamble functions.

The SS and BS testing functions are grouped in a general configurations functions group and separate groups with functions used for testing different types of functionality.

Each type of function is implemented in a separate module, although there may be multiple modules for each function type. The following general rules apply:

- Functions use the "*runs on"* statement wherever this is possible.

- Each function provides a return value wherever this is possible. The return value used is the enumeration type "FncRetCode" defined in the WMx_Types.ttcn file.

    EXAMPLE: WMx_Types.FncRetCode.

- The *stop* statement is used only for controlled test component shutdown.

6.2   Naming conventions

6.2.1   General guidelines

The naming convention is based on the following underlying principles:

- in most cases, identifiers should be prefixed with a short alphabetic string (specified in table 3) indicating the type of TTCN-3 element it represents;

- suffixes should not be used except in those specific cases identified in table 7;

- prefixes and suffixes should be separated from the body of the identifier with an underscore ("_");

    EXAMPLE 1:   `c_sixteen`, `t_wait_max`.

- only module names, data type names and module parameters should begin with an upper-case letter. All other names (i.e. the part of the identifier following the prefix) should begin with a lower-case letter;

- the start of second and subsequent words in an identifier should be indicated by capitalizing the first character. Underscores should not be used for this purpose.

EXAMPLE 2:   `f_authenticateUser`.

Table 3 specifies the naming guidelines for each element of the TTCN-3 language indicating the recommended prefix, suffixes (if any) and capitalization.

Table 3: TTCN-3 naming convention

Language element	Naming convention	Prefix	Suffix	Example	Notes
Module	Use upper-case initial letter	*none*	*none*	WMx_Templates	
TSS grouping	Use all upper-case letters	*none*	*none*	TP_RT_PS_TR	
Item group within a module	Use lower-case initial letter	*none*	*none*	messageGroup	
Data type	Use upper-case initial letter	*none*	*none*	SetupContents	
List type identifiers	Use upper-case initial letter	none	*none*	DlMapIeList	
Message template	Use lower-case initial letter	m_	none	m_setupInit	
Message template with wildcard or matching expression	Use lower-case initial letters	mw_	none	mw_setupBasic	
Port instance	Use lower-case initial letter	*none*	*none*	signallingPort	
Test component ref	Use lower-case initial letter	*none*	*none*	userTerminal	
Signature	Use lower-case initial letter	s_	*none*	s_callSignature	
External function	Use lower-case initial letter	xf_	*none*	xf_calculateLength()	
Constant	Use lower-case initial letter	c_	*none*	c_maxRetransmission	
Function	Use lower-case initial letter	f_	*none*	f_authentication()	
Altstep	Use lower-case initial letter	a_	*none*	a_receiveSetup()	
Altstep (Default)	Use lower-case initial letter	d_	*none*	d_receiveOtherMessages()	
Variable	Use lower-case initial letter	v_	*none*	v_basicCid	
Variable, global to component	Use lower-case initial letter	g_	*none*	g_ssSimu.basicCid	
Timer	Use lower-case initial letter	t_	_min _max	t_wait t_auth_min	Note 1
Module parameters PICS values PIXIT values	Use all upper case letters	*none*	*none*	PIC_T7PXT_TNOAC	Note 2
External constant	Use lower-case initial letter	xc_	*none*	xc_macId	
Parameterization	Use lower-case initial letter	p_	*none*	p_macId	
Enumerated Value	Use lower-case initial letter	e_	*none*	e_synCpk	
NOTE 1: If a time window is needed, the suffixes "_min" and "_max" should be appended.					
NOTE 2: In this case it is acceptable to use underscore as a word delimiter.					

6.2.2   Test Case (TC) identifier

Table 4: TC naming convention

TC_<st>_<pg>_<fg>_<sg>_<ini>_<x>_H<nnn>		
<st> = side type	BS	Base Station
	SS	Subscriber Station
<pg> = protocol group	CDM	Channel Descriptors and Maps
4	RLC	Radio Link Control
	INI	Registration, IP Connectivity, and Parameter Transfer
	PKM	Privacy and Key Management
	DS	Dynamic Services
	BWA	Bandwidth Allocation and Polling
	RER	Reset and Re-registration
	CCC	Clock Comparison
	MAC	MAC PDU Construction

TC_<st>_<pg>_<fg>_<sg>_<ini>_<x>_H<nnn>		
	PCS	Packet CS
<fg> = function group	MAP	Map and Frame Structure
	CD	Channel Descriptors
	CDC	Channel Descriptor Change
	IRNG	Initial Ranging
	PRNG	Periodic Ranging
	DBPC	Downlink Burst Profile Management
	SBC	Negotiate Basic Capabilities
	REG	Registration
	IPC	IP Connectivity
	AUTH	Authentication/Authorization
	TEK	Encryption Key Transfer
	SAM	Security Association Management
	EKS	Encryption and Key Scheduling
	DSA	Dynamic Service Addition
	DSC	Dynamic Service Change
	DSD	Dynamic Service Deletion
	REQ	Request/Grant
	MCP	Multicast Polling
	PACK	Packing
	FRAG	Fragmentation
	CAT	PDU Concatenation
	CRC	Cyclic Redundancy Check (CRC)
	ARQ	ARQ
	PCU	Packet CS Usage
	CLS	Classification
	CDS	Classifier DSx Signalling
	PHS	Payload Header Suppression
<sg> = subfunction group	INIT	Initialization
	OPN	Operation
	RLV	Relevance
	KU	Key Usage
	ENC	Encryption
	DEC	Decryption
<ini> = initiator of procedure or direction of flow	BsIni	Procedure is initiated by BS
	SsIni	Procedure is initiated by SS
	DL	Downlink
	UL	Uplink
<x> = type of testing	BV	Valid Behavior Tests
	BI	Invalid Syntax or Behavior Tests
	BO	Inopportune Behavior Tests
	TI	Timer and Counter Tests
<nnn> = sequential number	Hnnn	(H000, H001, …)

EXAMPLE: TP identifier: TP/SS/RLC/IRNG/BV-H002
            TC identifier: TC_SS_RLC_IRNG_BV_H002.

7 External functions

7.1 List organized by the type of external function

7.1.1 Functions to trigger the IUT

7.1.1.1 IUT is a BS

Table 5: Trigger BS as IUT

Nbr	Trigger IUT
1	xf_triggerBsEnableProfile
2	xf_triggerBsDsaReq
3	xf_triggerBsDsaReq_pcs
4	xf_triggerBsDsaReq_ip
5	xf_triggerBsDsaReq_prio
6	xf_triggerBsUlDsaReq_CSType
7	xf_triggerBsDsdReq
8	xf_dataReceivedOnIut
9	xf_triggerBsDataTransmission
10	xf_commandIUTIgnoreNextMessage
11	xf_triggerBsDsaReq_newSa
12	xf_triggerBsDataTransmission_classifier

7.1.1.2 IUT is a SS

Table 6: Trigger SS as IUT

Nbr	Trigger IUT
1	xf_triggerSsDataTransmission
2	xf_triggerSsSfDeleteLocal
3	xf_triggerSsChangeServiceFlow
4	xf_triggerSsDsaReq
5	xf_triggerSsDataTransmission_priority

7.1.2 Functions to trigger the Tester

7.1.2.1 IUT is a BS

Table 7: Trigger the Tester when IUT is a BS

Nbr	Trigger Tester
1	xf_piggyBackRequest
2	xf_triggerSsSimuDataTransmission_wrong_crc

7.1.2.2 IUT is a SS

Table 8: Trigger the Tester when IUT is a SS

Nbr	Trigger Tester
1	xf_getFocusedRegionParams
2	xf_checkFocusedContentionSignal
3	xf_getRegionFullParams
4	xf_getDataGrantParams

7.1.3   Functions to check internal Tester's event

7.1.3.1   IUT is a BS

Table 9: Check internal Tester event when IUT is a BS

Nbr	Check internal Tester event
1	xf_checkEthernetData
2	xf_checkServiceFlow
3	xf_checkIpv4SAP
4	xf_checkBsnrtPSUplinkServiceFlow
5	xf_checkBsrtPSUplinkServiceFlow

7.1.3.2   IUT is a SS

Table 10: Check internal Tester event when IUT is a SS

Nbr	Check internal Tester event
1	xf_checkIPv4overEthernetSAP

7.1.3.3   Function is independent of the IUT's type

Table 11: Check internal Tester event for BS and SS

Nbr	Check internal Tester event
1	xf_checkEthernetSAP

7.1.4   Functions for computation

7.1.4.1   IUT is a BS

Table 12: Computation function for BS

Nbr	Computation
1	xf_calcCrc
2	xf_calcHcs
3	xf_calcRawDataDLHmacDigest

7.1.4.2   IUT is a SS

Table 13: Computation function for SS

Nbr	Computation
1	xf_calcLen_pktClassificationRuleTLVs
2	xf_calcLen_qosEncodingTLVs
3	xf_bsGetTek
4	xf_bsGetCbcIv
5	xf_bsGetEncryptionAndLocalKeys
6	xf_bsGetSsPublicKey
7	xf_bsVerifySsCertificate
8	xf_calcLen_saDescriptorTLVs
9	xf_calcRawDataULHmacDigest

7.1.4.3   Function is independent of the IUT's type

Table 14: Computation function for BS and SS

Nbr	Computation
1	xf_generateTransId
2	xf_calcLen_dsaServiceFlowTLVs
3	xf_calcLen_dscServiceFlowTLVs
4	xf_calcDlHmac
5	xf_calcUlHmac
6	xf_calcLen_macPdu

7.1.5   Specific TA functions

7.1.5.1   IUT is a BS

Table 15: Specific TA functions for BS

Nbr	Specific TA functions
1	xf_triggerSsSimuDataTransmission
2	xf_rcvBroadcastMsgs
3	xf_setFsh
4	xf_EnableUlMapRxAndParseUiucAndCid
5	xf_DisableUlMapRx
6	xf_getPSPerOfdmSymbol
7	xf_setHwEncCryptoParams
8	xf_disableBwaReq
9	xf_setHwBwReqTxIuc
10	xf_getPhyMode

7.1.5.2   IUT is a SS

Table 16: Specific TA functions for SS

Nbr	Specific TA functions
1	xf_switchToMinRelevance
2	xf_switchToMaxRelevance
3	xf_checkTransmissionOpportunity
4	xf_checkReceivedRNG_REQ_ULPHYParamsAnd_ULBurstProfile
5	xf_enableProfile
6	xf_checkMinRelevance
7	xf_checkMaxRelevance
8	xf_dataReceivedInSameBurst
9	xf_enableDisplayStuffBytes
10	xf_enableRxBwaPadding
11	xf_ssDecryptAk
12	xf_sendPowerControlIE
13	xf_checkCertificateSignaturesSetToNull
14	xf_checkCertificateCountryNamesArePrintableString
15	xf_checkCertificateObjectIDsInNames
16	xf_checkCertificateOrganizationalUnitNameIsPresent
17	xf_checkCertificateSignatureValue
18	xf_checkCertificateUniqueIdsAreOmitted

Nbr	Specific TA functions
19	xf_checkCertificateFieldsAndValues
20	xf_checkCaCertificateFieldsPermitted
21	xf_checkSsCertificateFieldsPermitted
22	xf_checkCaCertificateCritBasicConstraintExtOnly
23	xf_checkSsCertificateNoCritExtension
24	xf_checkCertificateKeyUsageExtensionIsPresent
25	xf_checkCertificateManufacturerKeyUsageExtension
26	xf_checkCertificateSsKeyUsageExtension
27	xf_checkCaCertIdentifiesIssuerOfSsCert

7.1.5.3 Function is independent of the IUT's type

Table 17: Specific TA functions for BS and SS

Nbr	Specific TA functions
1	xf_setTransportCid
2	xf_getFsh
3	xf_getPlaintextEchoRequest
4	xf_getEncryptedEchoRequest
5	xf_checkEncryptedEchoRequest
6	xf_checkEncryptedEchoReply
7	xf_checkPlaintextEchoReply
8	xf_setHwDecCryptoParams
9	xf_decryptTek

7.1.6 Functions for Operator action

7.1.6.1 IUT is a BS

None.

7.1.6.2 IUT is a SS

Table 18: Operator action when IUT is a SS

Nbr	Operator action
1	xf_displayTestManualInterventionMsg

7.1.7 Functions for Interaction with external servers (IP connectivity)

7.1.7.1 IUT is a BS

Table 19: Interaction with external servers (IP connectivity) when IUT is a BS

Interaction with external servers (IP connectivity)	
Nbr	**IUT side**
1	xf_checkDHCPOffer
2	xf_checkDHCPResponse
3	xf_checkTODResponse
4	xf_checkTFTPDataPacketAndSave
Nbr	**TA side**
1	xf_getDHCPDiscover
2	xf_getDHCPRequest
3	xf_getTODRequest
4	xf_getTFTPReadRequest
5	xf_getTFTPAck

7.1.7.2   IUT is a SS

Table 20: Interaction with external servers (IP connectivity) when IUT is a SS

Interaction with external servers (IP connectivity)	
Nbr	**IUT side**
1	xf_checkDHCPDiscover
2	xf_checkDHCPRequest
3	xf_checkTODRequest
4	xf_checkTFTPReadRequest
5	xf_checkTFTPAck
Nbr	**TA side**
1	xf_DHCPClient_discovery
2	xf_DHCPClient_request
3	xf_TODClient_request
4	xf_getTFTPDataPacket

7.1.7.3   Function is independent of the IUT's type

Table 21: Interaction with external servers (IP connectivity) when IUT is BS or SS

Interaction with external servers (IP connectivity)	
Nbr	**TA side**
1	xf_checkTrafficOverSecMngCid

7.2   Description

7.2.1   Functions to trigger the IUT

7.2.1.1   IUT is a BS

Name	**xf_triggerBsEnableProfile**
Purpose	This function triggers BS (=IUT) to broadcast a new profile. The actual profile is overwritten by the new profile.
Parameters	in UInt8 - Profile Identifier in UInt8 - Broadcast Message Identifier
Return value	FncRetCode

Name	**xf_triggerBsDsaReq**
Purpose	This function triggers BS (=IUT) to send a DSA-REQ.
Parameters	in boolean - Type of service flow (UL or DL)
Return value	FncRetCode

Name	**xf_triggerBsDsaReq_pcs**
Purpose	This function triggers BS (=IUT) to send a DSA-REQ.
Parameters	in boolean - Type of service flow (UL or DL) in SchedulingType - BE, UGS, nrtPS or rtPS in CsSpecification - Ethernet, IPV4, IPV6, etc. in ClassifierRulePriority - Priority value in PktClassifierRuleIndex - Classifier Rule Index in EthDestinationMacAddress - Ethernet Destination Mac Address in EthSourceMacAddress - Ethernet Source Mac Address in EthTypeSap - Ethernet Type Sap
Return value	FncRetCode

Name	xf_triggerBsDsaReq_ip
Purpose	This function triggers BS (=IUT) to send a DSA-REQ.
Parameters	in boolean - Type of service flow (UL or DL) in SchedulingType - BE, UGS, nrtPS or rtPS in CsSpecification - Ethernet, IPV4, IPV6, etc. in ClassifierRulePriority - Priority value in PktClassifierRuleIndex - Classifier Rule Index in EthDestinationMacAddress - Ethernet Destination Mac Address in EthSourceMacAddress - Ethernet Source Mac Address in EthTypeSap - Ethernet Type Sap in IpDestinationAddress - IP Destination Address
Parameters	in boolean - Type of service flow (UL or DL)
Return value	FncRetCode

Name	xf_triggerBsDsaReq_prio
Purpose	This function triggers BS (=IUT) to send a DSA-REQ.
Parameters	in boolean - Type of service flow (UL or DL) in CsSpecification - Ethernet, IPV4, IPV6, etc. in ClassifierRulePriority - Priority value
Parameters	in boolean - Type of service flow (UL or DL)
Return value	FncRetCode

Name	xf_triggerBsUlDsaReq_CSType
Purpose	This function triggers BS (=IUT) to send an UL DSA-REQ.
Parameters	in SchedulingType - BE, UGS, nrtPS or rtPS in CsSpecification - Ethernet, IPV4, IPV6, etc.
Parameters	in boolean - Type of service flow (UL or DL)
Return value	FncRetCode

Name	xf_triggerBsDsdReq
Purpose	This function triggers BS (=IUT) to send a DSD-REQ.
Parameters	in Sfid - SFID of the service flow to be deleted
Return value	FncRetCode

Name	xf_dataReceivedOnIut
Purpose	This function checks that data is received on the IUT on established data cid/service flow.
Parameters	in Cid - Transport Cid to be checked in Sfid - SFID to be checked
Return value	FncRetCode

Name	xf_triggerBsDataTransmission
Purpose	This function triggers IUT (BS) to transmit unencrypted Data on established data cid/service flow.
Parameters	in Cid - Transport Cid to be checked in Sfid - SFID to be checked
Return value	FncRetCode

Name	xf_commandIUTIgnoreNextMessage
Purpose	This function commands IUT (BS) to ignore the next message received.
Parameters	-
Return value	FncRetCode

Name	xf_triggerCryptoSuiteId
Purpose	This function triggers the IUT to send a specific SA descriptor/Cryptographic suite identifier as identified in the parameter.
Parameters	in String 1 to 255
Return value	FncRetCode

Name	xf_triggerBsDsaReq_newSa
Purpose	This function triggers BS (=IUT) to send a DSA-REQ for a new SA.
Parameters	in boolean - Type of service flow (UL or DL)
Return value	FncRetCode

Name	xf_triggerBsDataTransmission_classifier
Purpose	This function triggers IUT (BS) to transmit Data indicating the classifier rule index to be used.
Parameters	in PktClassifierRuleIndex - Classifier Rule Index in ClassifierRulePriority - Classifier Rule Priority
Return value	FncRetCode

7.2.1.2   IUT is a SS

Name	xf_triggerSsDataTransmission
Purpose	This function triggers IUT (SS) to transmit unencrypted Data on established data cid/service flow.
Parameters	in Cid - Transport Cid to be checked in Sfid - SFID to be checked
Return value	FncRetCode

Name	xf_triggerSsSfDeleteLocal
Purpose	This function triggers IUT (SS) to delete service flow.
Parameters	in Sfid - SFID
Return value	FncRetCode

Name	xf_triggerSsChangeServiceFlow
Purpose	This function triggers IUT (SS) to change service flow.
Parameters	in Sfid - SFID
Return value	FncRetCode

Name	xf_triggerSsDsaReq
Purpose	This function triggers SS (=IUT) to send a DSA-REQ.
Parameters	in boolean - Type of service flow (UL or DL)
Return value	FncRetCode

Name	xf_triggerSsDataTransmission_priority
Purpose	This function triggers IUT (SS) to transmit Data indicating the classifier rule index to be used.
Parameters	PktClassifierRuleIndex
Return value	FncRetCode

7.2.2   Functions to trigger the Tester

7.2.2.1   IUT is a BS

Name	xf_piggyBackRequest
Purpose	This function triggers the Tester in case of Boolean true: to send bandwidth request only via piggyback, Boolean false: to send bandwidth request without piggyback.
Parameters	in Boolean - See purpose
Return value	FncRetCode

Name	xf_triggerSsSimuDataTransmission_wrong_crc
Purpose	This function triggers TE (SsSimu) to transmit data on established data cid/service flow with wrong CRC.
Parameters	in Cid - Cid of the established service flow in Sfid - Sfid of the established service flow
Return value	FncRetCode

7.2.2.2 IUT is a SS

Name	xf_getFocusedRegionParams
Purpose	This function triggers the Tester to compute and give back, all the necessary parameters for focused region request.
Parameters	in Cid out StartTime out SubchannelIndex out DurationShort out MidambleRepetitionInterval
Return value	FncRetCode

Name	xf_checkFocusedContentionSignal
Purpose	This function triggers the Tester to check the reception of the focused contention signal.
Parameters	in Cid out StartTime out SubchannelIndex out DurationShort out MidambleRepetitionInterval
Return value	FncRetCode

Name	xf_getRegionFullParams
Purpose	This function triggers the Tester to compute and give back, all the necessary parameters for region full request.
Parameters	in Cid out StartTime out SubchannelIndex out DurationShort out MidambleRepetitionInterval
Return value	FncRetCode

Name	xf_getDataGrantParams
Purpose	This function triggers the Tester to compute and give back, all the necessary parameters for data grant.
Parameters	in Cid out StartTime out SubchannelIndex out DurationShort out MidambleRepetitionInterval
Return value	FncRetCode

7.2.3 Functions to check internal Tester's event

7.2.3.1 IUT is a BS

Name	xf_checkEthernetData
Purpose	This function checks if the fields of the received Data are accorded to an Ethernet transmission. PHSI shall be set to zero and Ethernet header shall be complete and valid.
Parameters	in MacMsgPrimitives - Received Data PDU
Return value	FncRetCode

Name	xf_checkServiceFlow
Purpose	This function checks that the service is active and operational.
Parameters	in Cid - Transport Cid to be used in Sfid - SFID to be used
Return value	FncRetCode

Name	xf_checkIpv4SAP
Purpose	This function checks if a valid MAC SDU is passed to the IUT CS IPV4 SAP.
Parameters	
Return value	FncRetCode

Name	xf_checkBsnrtPSUplinkServiceFlow
Purpose	This function checks that the IUT (BS), during a sufficient period of time, provide timely unicast request opportunities to the SS based upon the Maximum Sustained Traffic Rate of a nrtPS uplink service flow.
Parameters	In BasicCid - BasicCid in Cid - Cid of the established service flow in Sfid - Sfid of the established service flow
Return value	FncRetCode

Name	xf_checkBsrtPSUplinkServiceFlow
Purpose	This function checks that the IUT (BS), during a sufficient period of time, provide unicast request opportunities to the SS at periodic intervals based upon the Maximum Sustained Traffic Rate of a rtPS uplink service flow.
Parameters	In BasicCid - BasicCid in Cid - Cid of the established service flow in Sfid - Sfid of the established service flow
Return value	FncRetCode

7.2.3.2   IUT is a SS

Name	xf_checkIPv4overEthernetSAP
Purpose	This function checks if a valid MAC SDU is passed to the IUT CS IPv4 over Ethernet SAP.
Parameters	
Return value	FncRetCode

7.2.3.3   Function is independent of the IUT's type

Name	xf_checkEthernetSAP
Purpose	This function checks if a valid MAC SDU is passed to the IUT CS Ethernet SAP.
Parameters	
Return value	FncRetCode

7.2.4   Functions for computation

7.2.4.1   IUT is a BS

Name	xf_calcCrc
Purpose	This function calculates the Crc.
Parameters	in MacPdu - Mac Pdu without Crc to be computed out Crc - Calculated Crc
Return value	FncRetCode

Name	xf_calcHcs
Purpose	This function calculates the Header Check Sequence.
Parameters	in MacHeader - MacHeader to be computed out Hcs - Calculated Hcs
Return value	FncRetCode

Name	xf_calcRawDataDLHmacDigest
Purpose	This function calculates the HMAC-Digest of the raw data message. Downlink authentication key HMAC_KEY_D shall be used. It can be extracted from the authentication key. The Raw data message is the MAC-MSG as it was received on the line; therefore it contains still the HMAC-Digest or HMAC-Tuple. This needs to be stripped off when calculating the HMAC-Digest.
Parameters	in AuthKey - AK in octetstring - Raw Data
Return value	HmacDigest

7.2.4.2   IUT is a SS

Name	xf_calcLen_pktClassificationRuleTLVs
Purpose	This function calculates the length of the PktClassificationRuleTLVs.
Parameters	in PktClassificationRuleTLVs - PktClassificationRuleTLVs to be computed
Return value	UInt8 - Calculated length

Name	xf_calcLen_qosEncodingTLVs
Purpose	This function calculates the length of the QosEncodingTLVs.
Parameters	in QosEncodingTLVs - QosEncodingTLVs to be computed
Return value	UInt8 - Calculated length

Name	xf_bsGetTek
Purpose	This function gets an encrypted TEK for BsSimu.
Parameters	in octet string - SS public Key in octet string - AK in CryptographicSuite - CryptographicSuite to be used out Tek - Extracted TEK
Return value	FncRetCode

Name	xf_bsGetCbcIv
Purpose	This function gets a CBC Iv for BsSimu.
Parameters	out CbcIv - Computed CbcIv
Return value	FncRetCode

Name	xf_bsGetEncryptionAndLocalKeys
Purpose	This function calculates encrypted and unencrypted Auth Key and Tek.
Parameters	in octet string - SS public Key in CryptographicSuite - CryptographicSuite to be used out octet string - Encrypted AK out Tek - Encrypted TEK out AuthKey - Unencrypted AK out Tek - Unencrypted TEK
Return value	FncRetCode

Name	xf_bsGetSsPublicKey
Purpose	This function gets the SS Public Key from SS Certificate for BsSimu.
Parameters	in octet string - SS certificate Out octet string - SS public Key
Return value	FncRetCode

Name	xf_bsVerifySsCertificate
Purpose	This function calculates encrypted Auth Key and encrypted Tek.
Parameters	in octet string - SS certificate in octet string - SS certificate length in octet string - CA certificate in octet string - CA certificate length out octet string - SS public Key
Return value	FncRetCode

Name	xf_calcLen_saDescriptorTLVs
Purpose	This function calculates the length of the SaDescriptorTLVs.
Parameters	in SaDescriptorTLVs - SaDescriptorTLVs to be used for computation
Return value	UInt8 - Returned length

Name	xf_calcRawDataULHmacDigest
Purpose	This function calculates the HMAC-Digest of the raw data message. Downlink authentication key HMAC_KEY_U shall be used. It can be extracted from the authentication key. The Raw data message is the MAC-MSG as it was received on the line; therefore it contains still the HMAC-Digest or HMAC-Tuple. This needs to be stripped off when calculating the HMAC-Digest.
Parameters	in AuthKey - AK in octetstring - Raw Data
Return value	HmacDigest

7.2.4.3 Function is independent of the IUT's type

Name	xf_generateTransId
Purpose	This function generates a random transaction ID to be used throughout the transaction. Ensure that transaction ID is unique; i.e. is not already in use.
Parameters	out TransactionId - Calculated TransactionId
Return value	FncRetCode

Name	xf_calcLen_dsaServiceFlowTLVs
Purpose	This function calculates the length of the DsaServiceFlowTLV.
Parameters	in DsaServiceFlowTLV - DsaServiceFlowTLV to be computed
Return value	UInt8 - Calculated length

Name	xf_calcLen_dscServiceFlowTLVs
Purpose	This function calculates the length of the DscServiceFlowTLV.
Parameters	in DscServiceFlowTLV - DscServiceFlowTLV to be computed
Return value	UInt8 - Calculated length

Name	xf_calcDlHmac
Purpose	This function calculates HMAC digest. Downlink authentication key HMAC_KEY_D shall be used. It can be extracted from the authentication key.
Parameters	in MsgInOut - message to be used for computation in AuthKey - AK out HmacDigest - Computed HmacDigest
Return value	FncRetCode

Name	xf_calcUlHmac
Purpose	This function calculates HMAC digest. Uplink authentication key HMAC_KEY_U shall be used. It can be extracted from the authentication key.
Parameters	in MsgInOut - message to be used for computation in AuthKey - AK out HmacDigest - Computed HmacDigest
Return value	FncRetCode

Name	xf_calcLen_macPdu
Purpose	This function calculates the length of the MacPdu with CRC length not included.
Parameters	in MacPdu - MAC PDU to compute out UInt11 - Returned Length
Return value	FncRetCode

7.2.5   Specific TA functions

7.2.5.1   IUT is a BS

Name	xf_triggerSsSimuDataTransmission
Purpose	This function triggers TE (SsSimu) transmit data on established data cid/service flow.
Parameters	in Cid - Transport Cid to be checked in Sfid - SFID to be checked
Return value	FncRetCode

Name	xf_rcvBroadcastMsgs
Purpose	This function returns success if the test adapter has been configured to receive broadcast messages.
Parameters	in BroadcastMsgTypeList List of broadcast message to be received
Return value	FncRetCode

Name	xf_setFsh
Purpose	This function sets PHY parameters of the message to be sent.
Parameters	in FrameSpecificHeaderLength - in Direction - in SubFrameControl - in BurstControl - in SubFrameNo - in BurstNo - in BwReqType - in TransmittedPower - in CenterFrequency - in Timing - in UiucShortList - in Cid -
Return value	FncRetCode

Name	xf_EnableUlMapRxAndParseUiucAndCid
Purpose	This function is used to enable only UL-MAP broadcast message reception in Adapter in order to extract the UiucList and the data grant Cid. This UiucList and Data Grant Cid is set in FrameSpecificHeader when retrieved through xf_getFsh.
Parameters	-
Return value	FncRetCode

Name	xf_DisableUlMapRx
Purpose	This function is used to disable broadcast message reception.
Parameters	
Return value	FncRetCode

Name	xf_getPSPerOfdmSymbol
Purpose	This function gets the PHY Physical slots per symbol information.
Parameters	out UInt32 - Physical slots per symbol information
Return value	FncRetCode

Name	xf_setHwEncCryptoParams
Purpose	This function provides parameters info for one Tek to the HW, required to encrypt outgoing traffic.
Parameters	in Cid - Service flow Cid to be encrypted in TekParams - TEK Parameters in CryptographicSuite - Cryptographic Suite to use for encrypting
Return value	FncRetCode

Name	xf_disableBwaReq
Purpose	This function triggers PCT SS to disable BWA req.
Parameters	
Return value	FncRetCode

Name	xf_setHwBwReqTxIuc
Purpose	This function triggers PCT SS to disable BWA req.
Parameters	in UiucShort - Uiuc where the BWA has to be sent
Return value	FncRetCode

Name	xf_getPhyMode
Purpose	This function triggers PCT SS to disable BWA req.
Parameters	in AllocationIuc - Uiuc for which the BWA has to be disabled
Return value	OfdmFecCodeType - bpskCc1Over2, qpskRsCc1Over2, qpskRsCc3Over4, 16QamRsCc1over2 , 16QamRsCc3over4, 64QamRsCc2over3, 64QamRsCc3over4, qpskBtc1Over2, qpskBtc3Over4Or2Over3, 16QamBtc3Over5, 16QamBtc4Over5, 64QamBtc2Over3, 64QamBtc5Over6, qpskCtc1Over2, qpskCtc2Over3, qpskCtc3Over4, 16QamCtc1Over2, 16QamCtc3Over4, 64QamCtc2Over3, 64QamCtc3Over4.

7.2.5.2 IUT is a SS

Name	xf_switchToMinRelevance
Purpose	This function returns success if the test adapter has been configured to switch to Minimum Relevance.
Parameters	-
Return value	FncRetCode

Name	xf_switchToMaxRelevance
Purpose	This function returns success if the test adapter has been configured to switch to Maximum Relevance.
Parameters	-
Return value	FncRetCode

Name	xf_checkTransmissionOpportunity
Purpose	This function sets a verdict if RNG-REQ was received in indicated Transmission Opportunity.
Parameters	in float - Elapsed Time
Return value	FncRetCode

Name	xf_checkReceivedRNG_REQ_ULPHYParamsAnd_ULBurstProfile
Purpose	This function sets a verdict on the TE-received RNG-REQ uplink PHY parameters and UL Burst Profile.
Parameters	-
Return value	FncRetCode

Name	xf_enableProfile
Purpose	This function starts the broadcast-emulation. Each time this external function is executed, the new profile overwrites the existing profile.
Parameters	in Profile List - Profile identifier in UInt8 - Broadcast message identifier
Return value	FncRetCode

Profile List. Possible values are:	
c_NeIniDefaultBurstDefault	Profile for normal test case execution.
c_NeIniDefaultBurst2	Like c_NeIniDefaultBurstDefault, but with small variations in UCD/DCD parameters.
c_2SFConcatBurst	Profile sufficiently large for data of 2 service flows to be transmitted in the same burst. If data of only 1 service flow is passed, then data should be padded.
c_1SFLongBurst	Profile sufficiently large for data of 1 service flow to be transmitted.
c_ReqRegFullBurst	Profile where: Only UIUC 2 is transmitted, No DIUC 1..11 are transmitted.
c_pChangeDL_ULSubFrameBurst	Broadcast Profile to transmit DL-MAP and UL-MAP that change the end of the DL sub frame and the start of the UL sub frame across successive frames.
c_insufficientBW	Profile BW allocation in UL_MAP insufficient for data of the transport CID service flow to be transmitted.
c_noUnoCandInsufficientBW	Profile no unicast polling, no contention request opportunities and insufficient data opportunities for BW allocation in UL_MAP for data of the transport CID service flow to be transmitted.
c_UnoCandnoDBW	Profile unicast polling, no contention request opportunities and no data opportunities for BW allocation in UL_MAP for data of the transport CID service flow to be transmitted.
c_noUCandnoDBW	Profile no unicast polling, contention request opportunities and no data opportunities for BW allocation in UL_MAP for data of the transport CID service flow to be transmitted.
c_noUnoCandnoDBW	Profile no unicast polling, no contention request opportunities and no data opportunities for BW allocation in UL_MAP for data of the transport CID service flow to be transmitted.
c_noUnoCandnoDBW_2	Profile no unicast polling, no contention request opportunities and no data opportunities for BW allocation in UL_MAP for data of the second transport CID service flow to be transmitted
c_opInst_dataGrant_noInvRangOpp	Trigger the PCT to allocate Data Grant, and restrict allocation of Invited Ranging Opportunity to IUT.
c_opInst_noDataGrant_invRangOpp	Trigger the PCT to restrict Data Grant, and allow allocation of Invited Ranging Opportunity to IUT.
Broadcast message identifier.	Switch for disabling broadcasting of specific message. Possible values are: c_ucd, c_dcd, c_dlMap, c_ulMap.

Name	xf_checkMinRelevance
Purpose	This function compares stored UL-MAP and RNG-REQ frame numbers for min relevance.
Parameters	
Return value	FncRetCode

Name	Xf_checkMaxRelevance
Purpose	This function compares stored UL-MAP and RNG-REQ frame numbers for max relevance.
Parameters	
Return value	FncRetCode

Name	xf_dataReceivedInSameBurst
Purpose	This function checks that data for 2 different service flows is received in the same burst.
Parameters	in Cid - Transport Cid of the first data flow in Sfid - Sfid of the first data flow in Cid - Transport Cid of the second data flow in Sfid - Sfid of the second data flow
Return value	FncRetCode

Name	xf_enableDisplayStuffBytes
Purpose	This function enables the Test HW to print stuff bytes.
Parameters	
Return value	FncRetCode

Name	xf_enableRxBwaPadding
Purpose	This function allows checking if BWA Header or Padding PDU is received.
Parameters	in UInt8 - BWA only, Padding only, or both
Return value	FncRetCode

Name	xf_ssDecryptAk
Purpose	This function provides decryption of AK.
Parameters	in octetstring - encrypted AK out octetstring - unencrypted AK
Return value	FncRetCode

Name	xf_sendPowerControlIE
Purpose	This function sets the power control IE with the specified cid and power level adjust value.
Parameters	in Cid - Cid to use in PowerLevelAdjust - Power level value
Return value	FncRetCode

Name	xf_checkCertificateSignaturesSetToNull
Purpose	This function checks that the signature fields into the certificate (tbsCertificate.signature & signatureAlgorithm)are set to NULL.
Parameters	in X509 - X509 certificate
Return value	FncRetCode

Name	xf_checkCertificateCountryNamesArePrintableString
Purpose	This function checks that the country name fields into the certificate (tbsCertificate.issuer & tbsCertificate.subject) are Printable String from ISO 3166 [i.1].
Parameters	in X509 - X509 certificate
Return value	FncRetCode

Name	xf_checkCertificateObjectIDsInNames
Purpose	This function checks that the Object IDs of Name fields in the certificate (tbsCertificate.issuer & tbsCertificate.subject) are correctly formed.
Parameters	in X509 - X509 certificate
Return value	FncRetCode

Name	xf_checkCertificateOrganizationalUnitNameIsPresent
Purpose	This function checks that the organizationalUnitName is into the certificate and it has the value "WirelessMAN".
Parameters	in X509 - X509 certificate
Return value	FncRetCode

Name	xf_checkCertificateSignatureValue
Purpose	This function checks that the signatureValue fields is calculated correctly.
Parameters	in X509 - X509 CA certificate in X509 - X509 SS certificate
Return value	FncRetCode

Name	xf_checkCertificateUniqueIdsAreOmitted
Purpose	This function checks that the Unique Id fields into the certificate (tbsCertificate.issuerUniqueID & tbsCertificate.subjectUniqueID) are omitted.
Parameters	in X509 - X509 certificate
Return value	FncRetCode

Name	xf_checkCertificateFieldsAndValues
Purpose	This function checks that the Manufacturer's Certificate has the following fields: countryName, organizationName, organizationalUnitName, commonName.
Parameters	in X509 - X509 certificate
Return value	FncRetCode

Name	xf_checkCaCertificateFieldsPermitted
Purpose	This function checks that the Manufacturer's Certificate has just fields permitted: countryName, organizationName, organizationalUnitName (2 times), commonName, stateorProvinceName, localityName.
Parameters	in X509 - X509 certificate
Return value	FncRetCode

Name	xf_checkSsCertificateFieldsPermitted
Purpose	This function checks that the SS Certificate has just fields permitted: countryName, organizationName, organizationalUnitName (2 times), commonName, stateorProvinceName, localityName.
Parameters	in X509 - X509 certificate
Return value	FncRetCode

Name	xf_checkCaCertificateCritBasicConstraintExtOnly
Purpose	This function checks that the Manufacturer's Certificate has just Basic Extensions.
Parameters	in X509 - X509 certificate
Return value	FncRetCode

Name	xf_checkSsCertificateNoCritExtension
Purpose	This function checks that the SS Certificate has just no Critical Extensions.
Parameters	in X509 - X509 certificate
Return value	FncRetCode

Name	xf_checkCertificateKeyUsageExtensionIsPresent
Purpose	This function checks that the keyUsage extension is present into the Manufacturer's Certificate.
Parameters	in X509 - X509 certificate
Return value	FncRetCode

Name	xf_checkCertificateManufacturerKeyUsageExtension
Purpose	This function checks that the KeyUsage extension is well-set to one (KeyCertSign bit) and to zero the rest of the bits.
Parameters	in X509 - X509 certificate
Return value	FncRetCode

Name	xf_checkCertificateSsKeyUsageExtension
Purpose	This function checks that the KeyUsage extension is well-set to one (KeyAgreement & KeyEncipherment bits) and to zero the rest of the bits.
Parameters	in X509 - X509 certificate
Return value	FncRetCode

Name	xf_checkCaCertIdentifiesIssuerOfSsCert
Purpose	This function checks that the Issuer in SS Certificate matches with the Subject in CA Certificate.
Parameters	in X509 - X509 CA certificate in X509 - X509 SS certificate
Return value	FncRetCode

7.2.5.3   Function is independent of the IUT's type

Name	xf_setTransportCid
Purpose	This function returns success if the test adapter has been configured to send on the indicated Transport Cid.
Parameters	in Cid - Transport Cid to be checked in Sfid - SFID to be checked
Return value	FncRetCode

Name	xf_getFsh
Purpose	This function gets PHY parameters of the last received message.
Parameters	in FrameSpecificHeader -
Return value	FncRetCode

Name	xf_getPlaintextEchoRequest
Purpose	This function gets a plaintext Echo Request message.
Parameters	in IpVersion - IP Version in octetstring - Value of the pattern to be sent in Oct6 - MAC - Destination Address in Oct4to16 IP - Destination Address out octetstring - Generated IP Packet
Return value	FncRetCode

Name	xf_getEncryptedEchoRequest
Purpose	This function gets an encrypted Echo Request message.
Parameters	in IpVersion - IP Version in octetstring - Value of the pattern to be sent in Oct6 - MAC - Destination Address in Oct4to16 IP - Destination Address out octetstring - Generated IP Packet
Return value	FncRetCode

Name	xf_checkEncryptedEchoRequest
Purpose	This function checks if the received IP packet is an Encrypted Echo Request message containing the corresponding pattern.
Parameters	in octetstring - Value of the pattern to be verified in octetstring - Received IP Packet
Return value	FncRetCode

Name	xf_checkEncryptedEchoReply
Purpose	This function checks if the received IP packet is an Encrypted Echo Reply message containing the corresponding pattern.
Parameters	in octetstring - Value of the pattern to be verified in octetstring - Received IP Packet
Return value	FncRetCode

Name	xf_checkPlaintextEchoReply
Purpose	This function checks if the received IP packet is a plaintext Echo Reply message containing the corresponding pattern.
Parameters	in octetstring - Value of the pattern to be verified in octetstring - Received IP Packet
Return value	FncRetCode

Name	xf_setHwDecCryptoParams
Purpose	This function provides parameters info for two Tek (old/new) to the HW, required to decrypt incoming traffic encrypted with either the old/new TEK.
Parameters	in Cid - Service flow Cid to be encrypted in TekParams - Older TEK Parameters in TekParams - Newer TEK Parameters in CryptographicSuite - Cryptographic Suite to use for decrypting
Return value	FncRetCode

Name	xf_decryptTek
Purpose	This function provides decryption of TEK.
Parameters	in Tek - Encrypted TEK in AuthKey - unencrypted AK in CryptographicSuite - Cryptographic Suite to use out TEK - unencrypted TEK
Return value	FncRetCode

7.2.6   Functions for Operator action

7.2.6.1   IUT is a BS

None.

7.2.6.2   IUT is a SS

Name	xf_displayTestManualInterventionMsg
Purpose	This function displays on the test tools screen an action that the test operator has to execute and confirm with YES/NO.
Parameters	in char string - Action to be executed
Return value	FncRetCode

7.2.7   Functions for Interaction with external servers (IP connectivity)

7.2.7.1   IUT is a BS

7.2.7.1.1   IUT side

Name	xf_checkDHCPOffer
Purpose	This function checks DHCP Offer to the IUT over Secondary Management Cid.
Parameters	in octet string - DHCP Offer
Return value	FncRetCode

Name	xf_checkDHCPResponse
Purpose	This function checks that DHCP Response is received from the IUT and over Secondary Management Cid.
Parameters	in octet string - DHCP Response
Return value	FncRetCode

Name	xf_checkTODResponse
Purpose	This function checks that Time of Day Response is received from the IUT and over Secondary Management Cid.
Parameters	in octet string - Time of Day Response
Return value	FncRetCode

Name	xf_checkTFTPDataPacketAndSave
Purpose	This function checks whether the received packet is a IP packet containing TFTP Data packet, received from the TFTP Server.
Parameters	in octetstring - a TFTP Data packet out UInt32 - Block Number
Return value	FncRetCode

7.2.7.1.2   TA side

Name	xf_getDHCPDiscover
Purpose	This function sends DHCP Discover to the IUT over Secondary Management Cid.
Parameters	out octet string - DHCP Discover
Return value	FncRetCode

Name	xf_getDHCPRequest
Purpose	This function sends DHCP Request to the IUT over Secondary Management Cid.
Parameters	out octet string - DHCP Request
Return value	FncRetCode

Name	xf_getTODRequest
Purpose	This function sends TOD Request to the IUT over Secondary Management Cid.
Parameters	out octet string - Time of Day Request
Return value	FncRetCode

Name	xf_getTFTPReadRequest
Purpose	This function prepares a TFTP RRQ IP packet to be sent to the TFTP server.
Parameters	out octetstring - a TFTP Read Request
Return value	FncRetCode

Name	xf_getTFTPAck
Purpose	This function prepares a TFTP ACK IP Packet to be sent to the TFTP server as an acknowledgement of the received TFTP Data block.
Parameters	in UInt32 - Block Number out octetstring - a TFTP Data packet
Return value	FncRetCode

7.2.7.2   IUT is a SS

7.2.7.2.1   IUT side

Name	xf_checkDHCPDiscover
Purpose	This function checks that DHCP Discover is received from the IUT and over Secondary Management Cid.
Parameters	in octet string - DHCP Discover
Return value	FncRetCode

Name	xf_checkDHCPRequest
Purpose	This function checks that DHCP Request is received from the IUT and over Secondary Management Cid.
Parameters	in octet string - DHCP Request
Return value	FncRetCode

Name	xf_checkTODRequest
Purpose	This function checks that Time of Day Request is received from the IUT and over Secondary Management Cid.
Parameters	in octet string - Time of Day Request
Return value	FncRetCode

Name	xf_checkTFTPReadRequest
Purpose	This function checks whether the received packet contains TFTP RRQ IP packet, received from the SS.
Parameters	in octetstring - a TFTP Read Request
Return value	FncRetCode

Name	xf_checkTFTPAck
Purpose	This function checks whether the received packet contains TFTP ACK IP Packet, received from the SS.
Parameters	in octetstring - a TFTP Data packet out UInt32 - Block Number
Return value	FncRetCode

7.2.7.2.2 TA side

Name	xf_DHCPClient_discovery
Purpose	This function sends DHCP Offer to the IUT over Secondary Management Cid.
Parameters	out octet string - DHCP Offer
Return value	FncRetCode

Name	xf_DHCPClient_request
Purpose	This function sends DHCP Response to the IUT over Secondary Management Cid.
Parameters	out octet string - DHCP Response
Return value	FncRetCode

Name	xf_TODClient_request
Purpose	This function sends TOD Response to the IUT over Secondary Management Cid.
Parameters	out octet string - Time of Day Response
Return value	FncRetCode

Name	xf_getTFTPDataPacket
Purpose	This function generates a TFTP Data packet to be sent to the SS.
Parameters	in UInt32 - Block Number out octetstring - a TFTP Data packet
Return value	FncRetCode

7.2.7.3   Function is independent of the IUT's type

7.2.7.3.1   IUT side

None.

7.2.7.3.2   TA side

Name	xf_checkTrafficOverSecMngCid
Purpose	This function checks that packets are received over Secondary Management Cid. For example the TFTP Configuration File.
Parameters	in MacPduPrimitives
Return value	FncRetCode

Annex A (normative):
Abstract Test Suite (ATS)

This ATS has been produced using the Testing and Test Control Notation (TTCN-3) according to ES 201 873-1 [9].

A.1 The TTCN-3 Module

The TTCN-3 code corresponding to the ATS is contained in the archive ts_10238503v020501p0.zip which accompanies the present document.

Annex B (normative):
Partial PIXIT proforma for HiperMAN DLC

Notwithstanding the provisions of the copyright clause related to the text of the present document, ETSI grants that users of the present document may freely reproduce the Partial PIXIT proforma in this annex so that it can be used for its intended purposes and may further publish the completed Partial PIXIT.

The PIXIT Proforma is based on ISO/IEC 9646-6 [7]. Any needed additional information can be found in this international standard document.

B.1   Identification summary

Table B.1

PIXIT Number:	
Test Laboratory Name:	
Date of Issue:	
Issued to:	

B.2   ATS summary

Table B.2

Protocol Specification:	TS 102 178 [1], TS 102 210 [10] Or IEEE 802.16-2004 [2] as corrected by Corrigendum 1 of IEEE 802.16e-2005 [3]
Protocol to be tested:	
ATS Specification:	TS 102 385-3 (V2.5.1)
Abstract Test Method:	TS 102 385-3 (V2.5.1) clause 4

B.3   Test laboratory

Table B.3

Test Laboratory Identification:	
Test Laboratory Manager:	
Means of Testing:	
SAP Address:	

B.4 Client identification

Table B.4

Client Identification:	
Client Test manager:	
Test Facilities required:	

B.5 SUT

Table B.5

Name:	
Version:	
SCS Number:	
Machine configuration:	
Operating System Identification:	
IUT Identification:	
PICS Reference for IUT:	
Limitations of the SUT:	
Environmental Conditions:	

B.6 Protocol layer information

B.6.1 Protocol identification

Table B.6

Name:	BRAN HM - DLC layer TS 102 178 [1] BRAN HM - System Profiles TS 102 210 [10] Or IEEE 802.16-2004 [2] as corrected by Corrigendum 1 of IEEE 802.16e-2005 [3].
Version:	
PICS References:	

B.6.2   IUT information

For type and value definition consult the TTCN-3 module WMx_Pixits.ttcn.

B.6.2.1   Timers

Table B.7: Timers

Name	Comment	Value
PXT_TIMER_PRECISION	Precision of timers in percentage (defined at 5 percent.	
PXT_TAC	Guard timer to control a reaction	
PXT_TNOAC	Guard timer to control a non-reaction	
PXT_TWAIT	Wait for an implicit send	
PXT_TDCD_INTERVAL	The time between transmission of DCD messages	
PXT_LOST_ULMAP_INTERVAL	The time between transmission of UL-MAP messages	
PXT_LOST_DLMAP_INTERVAL	The time between transmission of DL-MAP messages	
PXT_TLOOP	t_loop is used to control reception of messages via external functions. The external function is called every t_loop time, until external function returns success or t_wait guard timer expires	

B.6.2.2   Common Configuration

Table B.8: Common configuration

Name	Comment	Value
PXT_AUTO_INIT_SF	Shall the IUT establish automatically the SFs	
PXT_DEREGISTER	Shall the postamble be used to: - in case of SS = IUT: deregister IUT; - in case of BS = IUT: deregister Tester	
PXT_IUT_NOMINAL_POWER	Indicating IUT's nominal power	
PXT_IUT_MAXIMUM_POWER	Indicating IUT's maximum power	
PXT_IUT_MINIMUM_POWER	Indicating IUT's minimum power	
PXT_IUT_NOMINAL_FREQUENCY	Indicating IUT's nominal frequency	
PXT_TEST_MNGT_SPT	Allows to switch on/off the testing of IPConnectivity	
PXT_TEST_ARQ	Allows to switch on/off the testing of ARQ	
PXT_1ST_STATIC_SAID	Value of the 1. static Said	
PXT_UNKNOWN_TLV_TYPE	Unknown TLV	
PXT_CRYPTO_SUITE_TO_TEST	Enc algos to be tested	

B.6.2.3   DL-MAP message

Table B.9: DL-Map message

Name	Comment	Value
PXT_MAX_NR_OF_DLMAP_RCV	Number of times that DL-MAP shall be received in order to assure periodic reception	

B.6.2.4   DCD message

Table B.10: DCD message

Name	Comment	Value
PXT_MAX_NR_OF_DCD_RCV	Number of times that DCD shall be received in order to assure periodic reception	

B.6.2.5   UCD message

Table B.11: UCD message

Name	Comment	Value
PXT_MAX_NR_OF_UCD_RCV	Number of times that UCD shall be received in order to assure periodic reception	

B.6.2.6   Common RNG Pixits

Table B.12: Common RNG Pixits

Name	Comment	Value
PXT_POWER_LEVEL_ADJUST	Initial power level adjust	
PXT_TIMING_ADJUST	Initial timing adjust	
PXT_SS_SIMU_MIN_POWER	Minimum power level when tester simulates a SS	
PXT_SS_SIMU_MAX_POWER	Maximun power level when tester simulates a SS	
PXT_PRNG_POWER_LEVEL_ADJUST	Power level adjust for PRNG	
PXT_PRNG_TIMING_ADJUST	Timing adjust for PRNG	
PXT_PRNG_OFFSET_FREQ_ADJUST	Offset frequency adjust for PRNG	

B.6.2.7   RNG-REQ message

Table B.13: RNG-REQ message

Name	Comment	Value
PXT_MAC_ADDRESS	TE sends this MAC Address in RNG-REQ to BS (IUT).	
PXT_MAC_VERSION	TE sends this MAC version in RNG-REQ to BS (IUT).	
PXT_ROBUST_DIUC	TE sends this DIUC in RNG-REQ to BS (IUT). This Diuc shall indicate a robust profile.	
PXT_RNG_ANO	TE sends this Ranging Anomaly in RNG-REQ to BS (IUT).	
PXT_MAX_POWER_ADJUST	TE checks if requested power adjust in RNG-RSP is greater than the one that SS sent in RNG-REQ to BS (IUT).	
PXT_MIN_POWER_ADJUST	TE checks if requested power adjust in RNG-RSP is smaller than the one SS sent in RNG-REQ to BS (IUT).	
PXT_MAX_TIMING_ADJUST	TE checks if requested timing adjust in RNG-RSP is greater than the one SS sent in RNG-REQ to BS (IUT).	

B.6.2.8   RNG-RSP message

Table B.14: RNG-RSP message

Name	Comment	Value
PXT_BASIC_CID	TE sends this Basic Cid in RNG-RSP to SS(IUT).	
PXT_PRIM_CID	TE sends this Primary Cid in RNG-RSP to SS(IUT).	
PXT_SEC_CID	TE sends this Secondary Cid in RNG-RSP to SS(IUT).	
PXT_PHY_PARAMS_ADJUST_TIMING_TOLERANCE	Tolerance limit used for indicating timing adjustment in RNG-RSP to IUT.	
PXT_PHY_PARAMS_ADJUST_POWER_TOLERANCE	Tolerance limit used for indicating power adjustment in RNG-RSP sent to IUT.	
PXT_PHY_PARAMS_ADJUST_FREQ_TOLERANCE	tolerance limit used for indicating frequency adjustment in RNG-RSP to IUT.	
PXT_DELTA_POWER_LEVEL_ADJUST	TE requests increase in power by this amount in RNG-RSP sent to SS(IUT).	
PXT_IUT_ABNORAL_TIMING	Used to create an abnormal timing.	

B.6.2.9   Common SBC Pixits

Table B.15: Common SBC Pixits

Name	Comment	Value
PXT_BANDWIDTH_ALLOCATION_SUPPORT	Bandwidth Allocation Support.	
PXT_TTG	Transmit/receive transition gap TTG (in PSs).	
PXT_RTG	Receive/transmit transition gap RTG (in PSs).	
PXT_MAX_TX_POWER	Max power support.	
PXT_PKM_FLOW_CONTROL	The max number of outstanding PKM transactions supported.	
PXT_MAX_NR_SEC_ASSOCIATIONS	The max number of simultaneous security associations.	
PXT_OFDM_FFT_SIZES	The FFT sizes supported.	
PXT_OFDM_DEMODULATOR	The demodulator options supported.	
PXT_OFDM_MODULATOR	The modulator options supported.	
PXT_TC_SPT	TC layer support.	
PXT_SBC_REQ_RETRY	The number of times SBC-REQ shall be sent.	

B.6.2.10 AUTH and KEY messages

Table B.16: AUTH and KEY messages

Name	Comment	Value
PXT_NEW_SAID	New Security Association Id.	
PXT_UNAUTHORIZED_SAID	Unauthorized Security Association Id.	
PXT_UNKNOWN_AK_SEQ_NR	Unknown Authorization Key.	
PXT_INVALID_TEK	Invalid Tek.	
PXT_CA_CERTIFICATE	X.509 certification authority (CA) certificate.	
PXT_SS_CERTIFICATE	TE sends this certificate in AUTH-REQ to BS(IUT).	
PXT_CERTIFICATE_INCORRECT_ASN1_DER_ENCODING	TE sends this certificate in AUTH-REQ to BS(IUT). The certificate contains an incorrect ASN1 DER encoding.	
PXT_CERTIFICATE_INVALID_SIGNATURE	TE sends this certificate in AUTH-REQ to BS(IUT). The certificate contains an invalid signature.	
PXT_CRYPTO_SUITES_NOT_SUPPORTED_BY_IUT	Enc algos that BS does not support.	
PXT_AK_LIFETIME	Lifetime of Auth Key in seconds.	
PXT_TREAUTH_WAIT_TIMEOUT	Reauth wait timer in auth reply message.	
PXT_TAUTH_REJECT_WAIT_TIMEOUT	Auth reject wait timer in auth reply message.	
PXT_TAUTH_GRACE_TIME	Auth grace time in auth reply message.	
PXT_TAUTH_WAIT_TIMEOUT	Auth wait timer in auth reply message.	
PXT_TTEK_GRACE_TIME	Tek grace time in auth reply message.	
PXT_TAUTH_OPN_WAIT_TIMEOUT	Auth Opn wait timer in auth reply message.	
PXT_TTEK_REKEY_WAIT_TIMEOUT	Rekey wait timer in auth reply message.	
PXT_AUTH_REQ_RETRY	The number of times AUTH-REQ shall be sent.	
PXT_KEY_REQ_RETRY	The number of times KEY-REQ shall be sent.	
PXT_TEK_LIFETIME	Lifetime of TEK Key in seconds.	

B.6.2.11 Common REG Pixits

Table B.17: Common REG Pixits

Name	Comment	Value
PXT_UL_TRANSPORT_CID_SUPPORT	This field shows the number of Uplink CIDs the SS can support. The minimum value is three for managed SSs and two for unmanaged SSs. An SS shall support a Basic CID, a Management CID, and 0 or more Transport CIDs. A managed SS shall also support a Secondary Management CID.	
PXT_DL_TRANSPORT_CID_SUPPORT	This field shows the number of Downlink transport CIDs the SS can support.	
PXT_SS_MNGT_SPT	This field indicates whether or not the SS is managed by standard-based IP messages over the secondary management connection.	
PXT_IP_MNGT_MODE	The IP management mode parameter dictates whether the provider intends to manage the SS on an ongoing basis via IP-based mechanisms.	
PXT_IP_VERSION	This field indicates the version of IP used on the Secondary Management Connection.	
PXT_DSX_FLOW_CONTROL	This field specifies the maximum number of concurrent DSA, DSC, or DSD transactions that may be outstanding.	
PXT_MCA_FLOW_CONTROL	This field specifies the maximum number of concurrent MCA transactions that may be outstanding.	
PXT_PG_CID_SUPPORT	This field indicates the maximum number of simultaneous Multicast Polling Groups the SS is capable of belonging to.	

B.6.2.12 Common DSA Pixits

Table B.18: Common DSA Pixits

Name	Comment	Value
PXT_SFID	Service Flow Identifier.	
PXT_SFID_2	Service Flow Identifier for 2nd connection.	
PXT_TRAFFIC_RATE	Peak Traffic Rate in bits per second.	
PXT_PKT_CLASS_RULE_INDEX	Identifies a Packet Classifier Rule.	
PXT_PKT_CLASS_RULE_PRIORITY	Identifies a Packet Priority Rule.	
PXT_SCHEDULING_TYPE	Scheduling Type.	
PXT_CS_LAYER	Convergence Layer.	
PXT_TRANSPORT_CID	Transport Cid. Data will be sent on this Cid.	
PXT_TRANSPORT_CID_2	2nd Transport Cid. Data will be sent on this Cid.	
PXT_TOLERATED_JITTER	Indicates the maximum delay variation for the connection.	
PXT_PKT_CLASS_RULE_INDEX_HIGH	Identifies a Packet Classifier Rule with High value.	
PXT_PKT_CLASS_RULE_PRIORITY_HIGH	Identifies a Packet Priority Rule with high value.	
PXT_MAX_FRAGMENT_SIZE	Maximum fragment size negotiated on connection establishment.	
PXT_TRAFFIC_PRIORITY	Priority assigned to service flow.	
PXT_MAX_SUSTAINED_TRAFFIC_RATE	Peak information rate of the service.	
PXT_MIN_RESERVED_TRAFFIC_RATE	Minimum rate reserved for service flow.	
PXT_MAX_LATENCY	Maximun latency between the network interface and the forwarding of the packet to the RF Interface.	
PXT_QOS_PARAMETER_SET	Proper application of the QoS Parameter Set.	
PXT_UNSUPPORTED_MAX_SUSTAINED_TRAFFIC_RATE	Peak information rate of the service not supported for a service flow.	
PXT_MAX_TRAFFIC_BURST	Maximum burst size that shall be accommodated for the service.	
PXT_MIN_TOLERABLE_TRAFFIC_RATE	Minimum Tolerable Traffic Rate = R (bits/sec) with time base T(sec) means the following. Let S denote additional demand accumulated at the MAC SAP of the transmitter during an arbitrary time interval of the length T. Then the amount of data forwarded at the receiver to CS (in bits) during this interval should be not less than min {S, R * T}.	
PXT_ARQ_WINDOW_SIZE	ARQ windows size.	
PXT_VENDOR_QOS_PARAMETER	Allows vendors to encode vendor-specific QoS parameters.	
PXT_FRAG_LENGTH	Length of one fragment by which fragments are defined and sent to IUT.	
PXT_DSX_REQUEST_RETRIES	Number of DSX-REQ retransmission for the tester.	
PXT_DSX_RESPONSE_RETRIES	Number of DSX-RSP retransmission for the tester.	
PXT_UNSOLICITED_POLLING_INTERVAL	Unsolicited polling interval.	
PXT_UNSOLICITED_GRANT_INTERVAL	Unsolicited grant interval.	
PXT_IPV4_DATA	Contains a IPV4 data with header.	

B.6.2.13 BWA

Table B.19: BWA

Name	Comment	Value
PXT_DATA_PACKET_SDU	Data to be sent on the Transport Cid.	
PXT_MAX_NR_OF_GRANT_RECEPTION_TRIES	How many times is f_getFsh executed in order to receive the UIUC information.	

B.6.2.14 DBPC message

Table B.20: DBPC message

Name	Comment	Value
PXT_DBPC_DIUC	DIUC for sending a DBPC message.	
PXT_DBPC_CCC	ConfigurationChangeCnt for sending a DBPC message.	

B.6.2.15 ICMP Echo Request and Reply messages

Table B.21: ICMP Echo Request and Reply messages

Name	Comment	Value
PXT_DEST_IP_ADDRESS	First Destination IP address	
PXT_DEST_IP_ADDRESS_2	Second IPV4 address	
PXT_DEST_MAC_ADDRESS	Destination mac address for ICMP	
PXT_SRC_MAC_ADDRESS	Source mac address for ICMP	
PXT_PATTERN	Data payload of Ip packet.	
PXT_PATTERN_FRAG	Data payload of Ip packet for FRAG TCs.	
PXT_PATTERN_1	Data payload of Ip packet. The pattern shall be initialized such that the plaintext plus the echo reply is greater than 64 bits and is NOT a multiple of 64 bits	
PXT_ETH_TYPE_SAP	Indicates a first protocol ID in the Ethernet packet	
PXT_ETH_TYPE_SAP_2	Indicates a second protocol ID in the Ethernet packet	
PXT_ETH_SOURCE_MAC_ADDRESS	Specifies a first Ethernet source Mac Address	
PXT_ETH_SOURCE_MAC_ADDRESS_2	Specifies a second Ethernet source Mac Address	
PXT_ETH_DESTINATION_MAC_ADDRESS	Specifies a first Ethernet destination Mac Address	
PXT_ETH_DESTINATION_MAC_ADDRESS_2	Specifies a second Ethernet destination Mac Address	

Annex C (normative):
PCTR Proforma for HiperMAN DLC

Notwithstanding the provisions of the copyright clause related to the text of the present document, ETSI grants that users of the present document may freely reproduce the PCTR proforma in this annex so that it can be used for its intended purposes and may further publish the completed PCTR.

The PCTR proforma is based on ISO/IEC 9646-6 [7]. Any needed additional information can be found in this International standard document.

C.1   Identification summary

C.1.1   Protocol conformance test report

Table C.1

PCTR Number:	
PCTR Date:	
Corresponding SCTR Number:	
Corresponding SCTR Date:	
Test Laboratory Identification:	
Test Laboratory Manager:	
Signature:	

C.1.2   IUT identification

Table C.2

Name:	
Version:	
Protocol specification:	
PICS:	
Previous PCTR if any:	

C.1.3   Testing environment

Table C.3

PIXIT Number:	
ATS Specification:	TS 102 385-3 (V2.5.1)
Abstract Test Method:	TS 102 385-3 (V2.5.1) clause 4
Means of Testing identification:	
Date of testing:	
Conformance Log reference(s):	
Retention Date for Log reference(s):	

C.1.4 Limits and reservation

Additional information relevant to the technical contents or further use of the test report, or the rights and obligations of the test laboratory and the client, may be given here. Such information may include restriction on the publication of the report.

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C.1.5 Comments

Additional comments may be given by either the client or the test laboratory on any of the contents of the PCTR, for example, to note disagreement between the two parties.

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C.2 IUT Conformance status

This IUT has or has not been shown by conformance assessment to be non-conforming to the specified protocol specification.

Strike the appropriate words in this sentence. If the PICS for this IUT is consistent with the static conformance requirements (as specified in clause C.3) and there are no "FAIL" verdicts to be recorded (in clause C.6) strike the words "has or", otherwise strike the words "or has not".

C.3 Static conformance summary

The PICS for this IUT is or is not consistent with the static conformance requirements in the specified protocol.

Strike the appropriate words in this sentence.

C.4   Dynamic conformance summary

The test campaign did or did not reveal errors in the IUT.

Strike the appropriate words in this sentence. If there are no "FAIL" verdicts to be recorded (in clause C.6) strike the words "did or" otherwise strike the words "or did not".

Summary of the results of groups of test:

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C.5   Static conformance review report

If clause C.3 indicates non-conformance, this clause itemizes the mismatches between the PICS and the static conformance requirements of the specified protocol specification.

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C.6 Test campaign report

Table C.4: SS test cases

ATS Reference	Selected?	Run?	Verdict	Observations (Reference to any observations made in clause C.7)
TC_SS_CDM_MAP_INIT_BV_H000	Yes/No	Yes/No		
TC_SS_CDM_MAP_INIT_BV_H002	Yes/No	Yes/No		
TC_SS_CDM_MAP_RLV_BV_H000	Yes/No	Yes/No		
TC_SS_CDM_MAP_RLV_BV_H001	Yes/No	Yes/No		
TC_SS_CDM_MAP_OPN_BV_H000	Yes/No	Yes/No		
TC_SS_CDM_CD_BV_H000	Yes/No	Yes/No		
TC_SS_CDM_CD_BV_H001	Yes/No	Yes/No		
TC_SS_RLC_IRNG_BV_H000	Yes/No	Yes/No		
TC_SS_RLC_IRNG_BV_H001	Yes/No	Yes/No		
TC_SS_RLC_IRNG_BV_H002	Yes/No	Yes/No		
TC_SS_RLC_IRNG_BV_H100	Yes/No	Yes/No		
TC_SS_RLC_IRNG_BV_H101	Yes/No	Yes/No		
TC_SS_RLC_IRNG_BV_H102	Yes/No	Yes/No		
TC_SS_RLC_IRNG_BV_H105	Yes/No	Yes/No		
TC_SS_RLC_PRNG_BV_H000	Yes/No	Yes/No		
TC_SS_RLC_PRNG_BV_H002	Yes/No	Yes/No		
TC_SS_RLC_PRNG_BV_H007	Yes/No	Yes/No		
TC_SS_RLC_PRNG_BV_H010	Yes/No	Yes/No		
TC_SS_RLC_PRNG_BV_H013	Yes/No	Yes/No		
TC_SS_RLC_PRNG_BV_H016	Yes/No	Yes/No		
TC_SS_RLC_PRNG_BV_H017	Yes/No	Yes/No		
TC_SS_RLC_PRNG_BV_H019	Yes/No	Yes/No		
TC_SS_RLC_PRNG_BV_H020	Yes/No	Yes/No		
TC_SS_RLC_PRNG_BV_H022	Yes/No	Yes/No		
TC_SS_RLC_PRNG_BV_H025	Yes/No	Yes/No		
TC_SS_RLC_PRNG_BV_H027	Yes/No	Yes/No		
TC_SS_RLC_SBC_BV_H000	Yes/No	Yes/No		
TC_SS_RLC_SBC_BV_H001	Yes/No	Yes/No		
TC_SS_INI_REG_BV_H000	Yes/No	Yes/No		
TC_SS_DS_DSA_BV_H000	Yes/No	Yes/No		
TC_SS_DS_DSA_BV_H001	Yes/No	Yes/No		
TC_SS_DS_DSA_BV_H002	Yes/No	Yes/No		
TC_SS_DS_DSA_BV_H003	Yes/No	Yes/No		
TC_SS_DS_DSD_BV_H000	Yes/No	Yes/No		
TC_SS_DS_DSD_BV_H001	Yes/No	Yes/No		
TC_SS_BWA_REQ_BV_H000	Yes/No	Yes/No		
TC_SS_BWA_REQ_BV_H001	Yes/No	Yes/No		
TC_SS_BWA_REQ_BV_H002	Yes/No	Yes/No		
TC_SS_BWA_REQ_BV_H003	Yes/No	Yes/No		
TC_SS_BWA_REQ_BV_H004	Yes/No	Yes/No		
TC_SS_RLC_SBC_BV_H003	Yes/No	Yes/No		
TC_SS_RLC_SBC_BV_H004	Yes/No	Yes/No		
TC_SS_RLC_SBC_TI_H000	Yes/No	Yes/No		
TC_SS_RLC_SBC_TI_H001	Yes/No	Yes/No		
TC_SS_INI_REG_BI_H000	Yes/No	Yes/No		
TC_SS_INI_REG_TI_H001	Yes/No	Yes/No		
TC_SS_RLC_PRNG_BV_H001	Yes/No	Yes/No		
TC_SS_RLC_PRNG_BV_H003	Yes/No	Yes/No		
TC_SS_RLC_PRNG_BV_H005	Yes/No	Yes/No		
TC_SS_RLC_PRNG_BV_H008	Yes/No	Yes/No		
TC_SS_RLC_PRNG_BV_H009	Yes/No	Yes/No		
TC_SS_RLC_PRNG_BV_H011	Yes/No	Yes/No		
TC_SS_RLC_PRNG_BV_H012	Yes/No	Yes/No		
TC_SS_RLC_PRNG_BV_H024	Yes/No	Yes/No		
TC_SS_RLC_PRNG_BV_H030	Yes/No	Yes/No		
TC_SS_RLC_PRNG_BV_H034	Yes/No	Yes/No		

ATS Reference	Selected?	Run?	Verdict	Observations (Reference to any observations made in clause C.7)
TC_SS_RLC_PRNG_BV_H034	Yes/No	Yes/No		
TC_SS_RLC_PRNG_BV_H034	Yes/No	Yes/No		
TC_SS_RLC_PRNG_BV_H034	Yes/No	Yes/No		
TC_SS_RLC_PRNG_BV_H034	Yes/No	Yes/No		
TC_SS_RLC_PRNG_BV_H037	Yes/No	Yes/No		
TC_SS_RLC_PRNG_BV_H039	Yes/No	Yes/No		
TC_SS_RLC_PRNG_TI_H000	Yes/No	Yes/No		
TC_SS_RLC_PRNG_BV_H100	Yes/No	Yes/No		
TC_SS_RLC_PRNG_BV_H101	Yes/No	Yes/No		
TC_SS_PKM_AUTH_INIT_BV_H000	Yes/No	Yes/No		
TC_SS_PKM_AUTH_INIT_BV_H001	Yes/No	Yes/No		
TC_SS_PKM_AUTH_INIT_BV_H100	Yes/No	Yes/No		
TC_SS_PKM_AUTH_INIT_BV_H101	Yes/No	Yes/No		
TC_SS_PKM_AUTH_INIT_TI_H000	Yes/No	Yes/No		
TC_SS_PKM_AUTH_INIT_TI_H001	Yes/No	Yes/No		
TC_SS_PKM_AUTH_OPN_BV_H101	Yes/No	Yes/No		
TC_SS_PKM_AUTH_OPN_BV_H200	Yes/No	Yes/No		
TC_SS_PKM_AUTH_OPN_BV_H201	Yes/No	Yes/No		
TC_SS_PKM_AUTH_OPN_BV_H202	Yes/No	Yes/No		
TC_SS_PKM_AUTH_OPN_BV_H300	Yes/No	Yes/No		
TC_SS_PKM_AUTH_OPN_TI_H000	Yes/No	Yes/No		
TC_SS_PKM_AUTH_OPN_TI_H001	Yes/No	Yes/No		
TC_SS_PKM_AUTH_OPN_TI_H002	Yes/No	Yes/No		
TC_SS_PKM_TEK_INIT_BV_H000	Yes/No	Yes/No		
TC_SS_PKM_TEK_INIT_BV_H001	Yes/No	Yes/No		
TC_SS_PKM_TEK_INIT_BV_H002	Yes/No	Yes/No		
TC_SS_PKM_TEK_INIT_BV_H003	Yes/No	Yes/No		
TC_SS_PKM_TEK_INIT_BV_H004	Yes/No	Yes/No		
TC_SS_PKM_TEK_INIT_BV_H005	Yes/No	Yes/No		
TC_SS_PKM_TEK_INIT_BV_H100	Yes/No	Yes/No		
TC_SS_PKM_TEK_INIT_TI_H000	Yes/No	Yes/No		
TC_SS_PKM_TEK_INIT_TI_H001	Yes/No	Yes/No		
TC_SS_PKM_AUTH_OPN_BV_H000	Yes/No	Yes/No		
TC_SS_PKM_AUTH_OPN_BV_H001	Yes/No	Yes/No		
TC_SS_PKM_AUTH_OPN_BV_H002	Yes/No	Yes/No		
TC_SS_PKM_TEK_OPN_BV_H000	Yes/No	Yes/No		
TC_SS_PKM_TEK_OPN_BV_H001	Yes/No	Yes/No		
TC_SS_PKM_TEK_OPN_BV_H002	Yes/No	Yes/No		
TC_SS_PKM_TEK_OPN_BV_H003	Yes/No	Yes/No		
TC_SS_PKM_TEK_OPN_BV_H004	Yes/No	Yes/No		
TC_SS_PKM_TEK_OPN_BV_H005	Yes/No	Yes/No		
TC_SS_PKM_TEK_OPN_BV_H100	Yes/No	Yes/No		
TC_SS_PKM_TEK_OPN_BV_H101	Yes/No	Yes/No		
TC_SS_PKM_TEK_OPN_BV_H200	Yes/No	Yes/No		
TC_SS_PKM_TEK_OPN_BV_H201	Yes/No	Yes/No		
TC_SS_PKM_TEK_OPN_BV_H202	Yes/No	Yes/No		
TC_SS_PKM_TEK_OPN_BV_H203	Yes/No	Yes/No		
TC_SS_PKM_TEK_OPN_BV_H204	Yes/No	Yes/No		
TC_SS_PKM_TEK_OPN_BV_H300	Yes/No	Yes/No		
TC_SS_PKM_TEK_OPN_BV_H301	Yes/No	Yes/No		
TC_SS_PKM_TEK_OPN_BV_H302	Yes/No	Yes/No		
TC_SS_PKM_TEK_OPN_BV_H401	Yes/No	Yes/No		
TC_SS_PKM_TEK_OPN_BV_H402	Yes/No	Yes/No		
TC_SS_PKM_TEK_OPN_BV_H403	Yes/No	Yes/No		
TC_SS_PKM_TEK_OPN_BV_H404	Yes/No	Yes/No		
TC_SS_PKM_TEK_OPN_BV_H405	Yes/No	Yes/No		
TC_SS_PKM_TEK_OPN_BV_H500	Yes/No	Yes/No		
TC_SS_PKM_TEK_OPN_BV_H600	Yes/No	Yes/No		
TC_SS_PKM_TEK_OPN_TI_H000	Yes/No	Yes/No		
TC_SS_PKM_TEK_OPN_TI_H001	Yes/No	Yes/No		
TC_SS_PKM_TEK_OPN_TI_H002	Yes/No	Yes/No		

ATS Reference	Selected?	Run?	Verdict	Observations (Reference to any observations made in clause C.7)
TC_SS_PKM_TEK_OPN_TI_H003	Yes/No	Yes/No		
TC_SS_PKM_TEK_OPN_TI_H004	Yes/No	Yes/No		
TC_SS_PKM_EKS_BV_H000	Yes/No	Yes/No		
TC_SS_PKM_EKS_BV_H001	Yes/No	Yes/No		
TC_SS_PKM_EKS_KU_BV_H000	Yes/No	Yes/No		
TC_SS_PKM_EKS_KU_BV_H001	Yes/No	Yes/No		
TC_SS_PKM_EKS_KU_BV_H100	Yes/No	Yes/No		
TC_SS_PKM_EKS_KU_BV_H101	Yes/No	Yes/No		
TC_SS_PKM_EKS_KU_BV_H200	Yes/No	Yes/No		
TC_SS_PKM_EKS_KU_BV_H201	Yes/No	Yes/No		
TC_SS_PKM_EKS_KU_BV_H301	Yes/No	Yes/No		
TC_SS_PKM_EKS_KU_BV_H400	Yes/No	Yes/No		
TC_SS_PKM_EKS_ENC_BV_H000	Yes/No	Yes/No		
TC_SS_PKM_EKS_ENC_BV_H001	Yes/No	Yes/No		
TC_SS_PKM_EKS_ENC_BV_H004	Yes/No	Yes/No		
TC_SS_PKM_EKS_ENC_BV_H005	Yes/No	Yes/No		
TC_SS_PKM_EKS_ENC_BV_H007	Yes/No	Yes/No		
TC_SS_PKM_EKS_ENC_BV_H008	Yes/No	Yes/No		
TC_SS_PKM_EKS_ENC_BV_H009	Yes/No	Yes/No		
TC_SS_PKM_EKS_ENC_BV_H010	Yes/No	Yes/No		
TC_SS_PKM_EKS_ENC_BV_H101	Yes/No	Yes/No		
TC_SS_PKM_EKS_ENC_BV_H102	Yes/No	Yes/No		
TC_SS_PKM_EKS_ENC_BV_H103	Yes/No	Yes/No		
TC_SS_PKM_EKS_ENC_BV_H200	Yes/No	Yes/No		
TC_SS_PKM_EKS_ENC_BV_H201	Yes/No	Yes/No		
TC_SS_PKM_EKS_ENC_BV_H202	Yes/No	Yes/No		
TC_SS_PKM_EKS_DEC_BV_H000	Yes/No	Yes/No		
TC_SS_PKM_EKS_DEC_BV_H001	Yes/No	Yes/No		
TC_SS_PKM_EKS_DEC_BV_H002	Yes/No	Yes/No		
TC_SS_PKM_EKS_DEC_BV_H003	Yes/No	Yes/No		
TC_SS_PKM_EKS_DEC_BV_H004	Yes/No	Yes/No		
TC_SS_PKM_EKS_DEC_BV_H007	Yes/No	Yes/No		
TC_SS_PKM_EKS_DEC_BV_H008	Yes/No	Yes/No		
TC_SS_PKM_EKS_DEC_BV_H009	Yes/No	Yes/No		
TC_SS_PKM_EKS_DEC_BV_H100	Yes/No	Yes/No		
TC_SS_PKM_EKS_DEC_BV_H101	Yes/No	Yes/No		
TC_SS_PKM_EKS_DEC_BV_H102	Yes/No	Yes/No		
TC_SS_PKM_EKS_DEC_BV_H103	Yes/No	Yes/No		
TC_SS_PKM_EKS_DEC_BV_H200	Yes/No	Yes/No		
TC_SS_PKM_EKS_DEC_BV_H201	Yes/No	Yes/No		
TC_SS_PKM_EKS_DEC_BV_H202	Yes/No	Yes/No		
TC_SS_PKM_CERT_BV_H004	Yes/No	Yes/No		
TC_SS_PKM_CERT_BV_H005	Yes/No	Yes/No		
TC_SS_PKM_CERT_BV_H006	Yes/No	Yes/No		
TC_SS_PKM_CERT_BV_H007	Yes/No	Yes/No		
TC_SS_PKM_CERT_BV_H008	Yes/No	Yes/No		
TC_SS_PKM_CERT_BV_H009	Yes/No	Yes/No		
TC_SS_PKM_CERT_BV_H010	Yes/No	Yes/No		
TC_SS_PKM_CERT_BV_H100	Yes/No	Yes/No		
TC_SS_PKM_CERT_BV_H101	Yes/No	Yes/No		
TC_SS_PKM_CERT_BV_H102	Yes/No	Yes/No		
TC_SS_PKM_CERT_BV_H103	Yes/No	Yes/No		
TC_SS_PKM_CERT_BV_H104	Yes/No	Yes/No		
TC_SS_PKM_CERT_BV_H200	Yes/No	Yes/No		
TC_SS_PKM_CERT_BV_H201	Yes/No	Yes/No		
TC_SS_PKM_CERT_BV_H202	Yes/No	Yes/No		
TC_SS_DS_DSA_BV_H007	Yes/No	Yes/No		
TC_SS_DS_DSA_TI_H003	Yes/No	Yes/No		
TC_SS_DS_DSA_TI_H005	Yes/No	Yes/No		
TC_SS_DS_DSA_TI_H013	Yes/No	Yes/No		
TC_SS_DS_DSA_TI_H014	Yes/No	Yes/No		

ATS Reference	Selected?	Run?	Verdict	Observations (Reference to any observations made in clause C.7)
TC_SS_DS_DSA_TI_H015	Yes/No	Yes/No		
TC_SS_DS_DSA_BI_H000	Yes/No	Yes/No		
TC_SS_DS_DSD_TI_H004	Yes/No	Yes/No		
TC_SS_BWA_REQ_BV_H203	Yes/No	Yes/No		
TC_SS_BWA_REQ_BV_H204	Yes/No	Yes/No		
TC_SS_BWA_REQ_BV_H400	Yes/No	Yes/No		
TC_SS_BWA_REQ_BV_H401	Yes/No	Yes/No		
TC_SS_BWA_REQ_BV_H402	Yes/No	Yes/No		
TC_SS_PKM_SAM_BV_H000	Yes/No	Yes/No		
TC_SS_MAC_FRAG_BV_H000	Yes/No	Yes/No		
TC_SS_MAC_FRAG_BV_H001	Yes/No	Yes/No		
TC_SS_MAC_FRAG_BV_H101	Yes/No	Yes/No		
TC_SS_MAC_FRAG_BV_H102	Yes/No	Yes/No		
TC_SS_MAC_FRAG_BV_H103	Yes/No	Yes/No		
TC_SS_MAC_CRC_BV_H000	Yes/No	Yes/No		
TC_SS_MAC_CRC_BV_H001	Yes/No	Yes/No		
TC_SS_MAC_CRC_BV_H002	Yes/No	Yes/No		
TC_SS_MAC_CRC_BV_H003	Yes/No	Yes/No		
TC_SS_PCS_PCU_BV_H000	Yes/No	Yes/No		
TC_SS_PCS_PCU_BV_H002	Yes/No	Yes/No		
TC_SS_PCS_CLS_ENET_BV_H000	Yes/No	Yes/No		
TC_SS_PCS_CLS_ENET_BV_H001	Yes/No	Yes/No		
TC_SS_PCS_CLS_ENET_BV_H002	Yes/No	Yes/No		
TC_SS_PCS_CLS_ENET_BV_H003	Yes/No	Yes/No		
TC_SS_PCS_CLS_ENET_BV_H005	Yes/No	Yes/No		

Table C.5: BS test cases

ATS Reference	Selected?	Run?	Verdict	Observations (Reference to any observations made in clause C.7)
TC_BS_CDM_MAP_BV_H000	Yes/No	Yes/No		
TC_BS_CDM_MAP_BV_H001	Yes/No	Yes/No		
TC_BS_CDM_MAP_BV_H002	Yes/No	Yes/No		
TC_BS_CDM_CD_BV_H000	Yes/No	Yes/No		
TC_BS_CDM_CD_BV_H001	Yes/No	Yes/No		
TC_BS_CDM_CD_BV_H002	Yes/No	Yes/No		
TC_BS_RLC_IRNG_BV_H000	Yes/No	Yes/No		
TC_BS_RLC_IRNG_BV_H001	Yes/No	Yes/No		
TC_BS_RLC_IRNG_BV_H002	Yes/No	Yes/No		
TC_BS_RLC_IRNG_BV_H009	Yes/No	Yes/No		
TC_BS_RLC_IRNG_BV_H010	Yes/No	Yes/No		
TC_BS_RLC_IRNG_BV_H011	Yes/No	Yes/No		
TC_BS_RLC_IRNG_TI_H000	Yes/No	Yes/No		
TC_BS_RLC_IRNG_TI_H001	Yes/No	Yes/No		
TC_BS_RLC_PRNG_BV_H000	Yes/No	Yes/No		
TC_BS_RLC_PRNG_BV_H001	Yes/No	Yes/No		
TC_BS_RLC_PRNG_BV_H002	Yes/No	Yes/No		
TC_BS_RLC_PRNG_BV_H004	Yes/No	Yes/No		
TC_BS_RLC_PRNG_BV_H005	Yes/No	Yes/No		
TC_BS_RLC_PRNG_BV_H007	Yes/No	Yes/No		
TC_BS_RLC_SBC_BV_H000	Yes/No	Yes/No		
TC_BS_DS_DSA_BV_H000	Yes/No	Yes/No		
TC_BS_DS_DSA_BV_H001	Yes/No	Yes/No		
TC_BS_DS_DSA_BV_H003	Yes/No	Yes/No		
TC_BS_DS_DSA_BV_H004	Yes/No	Yes/No		
TC_BS_DS_DSD_BV_H000	Yes/No	Yes/No		
TC_BS_DS_DSD_BV_H001	Yes/No	Yes/No		
TC_BS_BWA_REQ_BV_H000	Yes/No	Yes/No		

ATS Reference	Selected?	Run?	Verdict	Observations (Reference to any observations made in clause C.7)
TC_BS_BWA_REQ_BV_H001	Yes/No	Yes/No		
TC_BS_BWA_REQ_BV_H002	Yes/No	Yes/No		
TC_BS_BWA_REQ_BV_H003	Yes/No	Yes/No		
TC_BS_BWA_REQ_BV_H004	Yes/No	Yes/No		
TC_BS_INI_REG_BV_H000	Yes/No	Yes/No		
TC_BS_INI_REG_BV_H003	Yes/No	Yes/No		
TC_BS_INI_REG_BV_H005	Yes/No	Yes/No		
TC_BS_INI_REG_TI_H000	Yes/No	Yes/No		
TC_BS_PKM_AUTH_INIT_BV_H000	Yes/No	Yes/No		
TC_BS_PKM_AUTH_INIT_BV_H001	Yes/No	Yes/No		
TC_BS_PKM_AUTH_INIT_BV_H002	Yes/No	Yes/No		
TC_BS_PKM_AUTH_INIT_BV_H003	Yes/No	Yes/No		
TC_BS_PKM_AUTH_INIT_BV_H004	Yes/No	Yes/No		
TC_BS_PKM_AUTH_INIT_BV_H005	Yes/No	Yes/No		
TC_BS_PKM_AUTH_INIT_BV_H006	Yes/No	Yes/No		
TC_BS_PKM_AUTH_INIT_BV_H007	Yes/No	Yes/No		
TC_BS_PKM_AUTH_INIT_BV_H008	Yes/No	Yes/No		
TC_BS_PKM_AUTH_INIT_BV_H009	Yes/No	Yes/No		
TC_BS_PKM_AUTH_INIT_BV_H011	Yes/No	Yes/No		
TC_BS_PKM_AUTH_INIT_BV_H012	Yes/No	Yes/No		
TC_BS_PKM_AUTH_INIT_BV_H013	Yes/No	Yes/No		
TC_BS_PKM_AUTH_INIT_BV_H014	Yes/No	Yes/No		
TC_BS_PKM_AUTH_INIT_BV_H015	Yes/No	Yes/No		
TC_BS_PKM_AUTH_INIT_BI_H000	Yes/No	Yes/No		
TC_BS_PKM_AUTH_INIT_BI_H001	Yes/No	Yes/No		
TC_BS_PKM_TEK_INIT_BV_H000	Yes/No	Yes/No		
TC_BS_PKM_TEK_INIT_BV_H001	Yes/No	Yes/No		
TC_BS_PKM_TEK_INIT_BV_H003	Yes/No	Yes/No		
TC_BS_PKM_TEK_INIT_BV_H004	Yes/No	Yes/No		
TC_BS_PKM_TEK_INIT_BV_H005	Yes/No	Yes/No		
TC_BS_PKM_TEK_INIT_BV_H006	Yes/No	Yes/No		
TC_BS_PKM_TEK_INIT_BV_H007	Yes/No	Yes/No		
TC_BS_PKM_TEK_INIT_BV_H010	Yes/No	Yes/No		
TC_BS_PKM_AUTH_OPN_BV_H000	Yes/No	Yes/No		
TC_BS_PKM_AUTH_OPN_BV_H001	Yes/No	Yes/No		
TC_BS_PKM_AUTH_OPN_BV_H002	Yes/No	Yes/No		
TC_BS_PKM_AUTH_OPN_BV_H003	Yes/No	Yes/No		
TC_BS_PKM_AUTH_OPN_BV_H004	Yes/No	Yes/No		
TC_BS_PKM_AUTH_OPN_BV_H005	Yes/No	Yes/No		
TC_BS_PKM_AUTH_OPN_TI_H000	Yes/No	Yes/No		
TC_BS_PKM_AUTH_OPN_TI_H001	Yes/No	Yes/No		
TC_BS_PKM_TEK_OPN_BV_H000	Yes/No	Yes/No		
TC_BS_PKM_TEK_OPN_BV_H001	Yes/No	Yes/No		
TC_BS_PKM_TEK_OPN_BV_H002	Yes/No	Yes/No		
TC_BS_PKM_TEK_OPN_BV_H003	Yes/No	Yes/No		
TC_BS_PKM_TEK_OPN_BV_H004	Yes/No	Yes/No		
TC_BS_PKM_TEK_OPN_BV_H005	Yes/No	Yes/No		
TC_BS_PKM_TEK_OPN_BV_H007	Yes/No	Yes/No		
TC_BS_PKM_TEK_OPN_BV_H008	Yes/No	Yes/No		
TC_BS_PKM_TEK_OPN_BV_H009	Yes/No	Yes/No		
TC_BS_PKM_EKS_BV_H000	Yes/No	Yes/No		
TC_BS_PKM_EKS_BV_H001	Yes/No	Yes/No		
TC_BS_PKM_EKS_BV_H002	Yes/No	Yes/No		
TC_BS_PKM_EKS_BV_H004	Yes/No	Yes/No		
TC_BS_PKM_EKS_BV_H005	Yes/No	Yes/No		
TC_BS_PKM_EKS_BV_H006	Yes/No	Yes/No		
TC_BS_PKM_EKS_KU_BV_H000	Yes/No	Yes/No		
TC_BS_PKM_EKS_KU_BV_H001	Yes/No	Yes/No		
TC_BS_PKM_EKS_KU_BV_H005	Yes/No	Yes/No		
TC_BS_PKM_EKS_KU_BV_H006	Yes/No	Yes/No		
TC_BS_PKM_EKS_ENC_BV_H000	Yes/No	Yes/No		

ATS Reference	Selected?	Run?	Verdict	Observations (Reference to any observations made in clause C.7)
TC_BS_PKM_EKS_ENC_BV_H001	Yes/No	Yes/No		
TC_BS_PKM_EKS_ENC_BV_H002	Yes/No	Yes/No		
TC_BS_PKM_EKS_ENC_BV_H003	Yes/No	Yes/No		
TC_BS_PKM_EKS_ENC_BV_H005	Yes/No	Yes/No		
TC_BS_PKM_EKS_ENC_BV_H006	Yes/No	Yes/No		
TC_BS_PKM_EKS_DEC_BV_H000	Yes/No	Yes/No		
TC_BS_PKM_EKS_DEC_BV_H001	Yes/No	Yes/No		
TC_BS_PKM_EKS_DEC_BV_H002	Yes/No	Yes/No		
TC_BS_PKM_EKS_DEC_BV_H003	Yes/No	Yes/No		
TC_BS_PKM_CERT_BV_H000	Yes/No	Yes/No		
TC_BS_DS_DSA_BV_H010	Yes/No	Yes/No		
TC_BS_DS_DSA_BV_H011	Yes/No	Yes/No		
TC_BS_DS_DSA_BV_H013	Yes/No	Yes/No		
TC_BS_DS_DSA_BV_H020	Yes/No	Yes/No		
TC_BS_DS_DSA_BI_H001	Yes/No	Yes/No		
TC_BS_DS_DSA_BI_H002	Yes/No	Yes/No		
TC_BS_DS_DSA_BO_H001	Yes/No	Yes/No		
TC_BS_DS_DSA_TI_H002	Yes/No	Yes/No		
TC_BS_DS_DSA_TI_H003	Yes/No	Yes/No		
TC_BS_DS_DSA_TI_H004	Yes/No	Yes/No		
TC_BS_DS_DSA_TI_H008	Yes/No	Yes/No		
TC_BS_DS_DSA_TI_H010	Yes/No	Yes/No		
TC_BS_DS_DSA_TI_H011	Yes/No	Yes/No		
TC_BS_DS_DSA_TI_H012	Yes/No	Yes/No		
TC_BS_DS_DSA_TI_H013	Yes/No	Yes/No		
TC_BS_DS_DSD_BV_H003	Yes/No	Yes/No		
TC_BS_DS_DSD_BV_H005	Yes/No	Yes/No		
TC_BS_DS_DSD_BO_H001	Yes/No	Yes/No		

ATS Reference	Selected?	Run?	Verdict	Observations (Reference to any observations made in clause C.7)
TC_BS_DS_DSD_BO_H002	Yes/No	Yes/No		
TC_BS_DS_DSD_TI_H003	Yes/No	Yes/No		
TC_BS_BWA_REQ_BV_H007	Yes/No	Yes/No		
TC_BS_BWA_REQ_BV_H009	Yes/No	Yes/No		
TC_BS_BWA_REQ_BV_H010	Yes/No	Yes/No		
TC_BS_BWA_REQ_BV_H011	Yes/No	Yes/No		
TC_BS_BWA_REQ_BV_H012	Yes/No	Yes/No		
TC_BS_BWA_REQ_BV_H013	Yes/No	Yes/No		
TC_BS_BWA_REQ_BV_H014	Yes/No	Yes/No		
TC_BS_BWA_REQ_BV_H015	Yes/No	Yes/No		
TC_BS_BWA_REQ_BV_H031	Yes/No	Yes/No		
TC_BS_PKM_SAM_BV_H000	Yes/No	Yes/No		
TC_BS_PKM_SAM_BV_H002}	Yes/No	Yes/No		
TC_BS_MAC_FRAG_BV_H001	Yes/No	Yes/No		
TC_BS_MAC_FRAG_BV_H002	Yes/No	Yes/No		
TC_BS_MAC_FRAG_BV_H003	Yes/No	Yes/No		
TC_BS_MAC_FRAG_BV_H005	Yes/No	Yes/No		
TC_BS_MAC_FRAG_BV_H006	Yes/No	Yes/No		
TC_BS_MAC_FRAG_BV_H007	Yes/No	Yes/No		
TC_BS_MAC_FRAG_BV_H100	Yes/No	Yes/No		
TC_BS_MAC_FRAG_BV_H101	Yes/No	Yes/No		
TC_BS_PCS_CLS_BV_H000	Yes/No	Yes/No		
TC_BS_PCS_CLS_BV_H001	Yes/No	Yes/No		
TC_BS_PCS_CLS_BV_H002	Yes/No	Yes/No		
TC_BS_PCS_CLS_BV_H003	Yes/No	Yes/No		
TC_BS_PCS_CLS_BV_H004	Yes/No	Yes/No		
TC_BS_PCS_CLS_BV_H005	Yes/No	Yes/No		
TC_BS_PCS_CLS_ENET_BV_H000	Yes/No	Yes/No		
TC_BS_PCS_CLS_ENET_BV_H001	Yes/No	Yes/No		
TC_BS_PCS_CLS_ENET_BV_H002	Yes/No	Yes/No		
TC_BS_PCS_CLS_ENET_BV_H003	Yes/No	Yes/No		
TC_BS_PCS_CLS_ENET_BV_H005	Yes/No	Yes/No		
TC_BS_MAC_CRC_BV_H000	Yes/No	Yes/No		
TC_BS_MAC_CRC_BV_H001	Yes/No	Yes/No		
TC_BS_MAC_CRC_BV_H002	Yes/No	Yes/No		
TC_BS_MAC_CRC_BI_H000	Yes/No	Yes/No		

C.7   Observations

Additional information relevant to the technical content of the PCTR is given here.

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Annex D (informative):
Bibliography

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- IETF RFC 868: "Time Protocol".

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- IETF RFC 2349: "TFTP Timeout Interval and Transfer Size Options".

- ISO/IEC 9646-3/ITU-T Recommendation X.292: "Information technology - Open Systems Interconnection - Conformance testing methodology and framework - Part 3: The Tree and Tabular Combined Notation (TTCN)".

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