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ETSI

European Telecommunications Standards Institute

ETSI Secretariat

Postal address: F-06921 Sophia Antipolis CEDEX - FRANCE
Office address: 650 Route des Lucioles - Sophia Antipolis - Valbonne - FRANCE
X.400: c=fr, a=atlas, p=etsi, s=secretariat - **Internet:** secretariat@etsi.fr

Tel.: +33 4 92 94 42 00 - Fax: +33 4 93 65 47 16

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Foreword

This final draft European Telecommunication Standard (ETS) has been produced by the ETSI Project Broadband Radio Access Networks (BRAN) of the European Telecommunications Standards Institute (ETSI), and is now submitted for the Voting phase of the ETSI standards approval procedure.

This ETS consists of 4 parts:

Part 1:   "Radio type approval and Radio Frequency (RF) conformance test specification";

Part 2:   "Protocol Implementation Conformance Statement (PICS) proforma specification";

Part 3:   "Test Suite Structure and Test Purposes (TSS&TP) specification";

Part 4:   "Abstract Test Suite (ATS) specification".

Proposed transposition dates	
Date of latest announcement of this ETS (doa):	3 months after ETSI publication
Date of latest publication of new National Standard or endorsement of this ETS (dop/e):	6 months after doa
Date of withdrawal of any conflicting National Standard (dow):	6 months after doa

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1 Scope

This European Telecommunication Standard (ETS) specifies the Test Suite Structure and Test Purposes (TSS&TP) for the Medium Access Control (MAC) and Channel Access Control (CAC) protocol parts of the HIgh PErformance Radio Local Area Network (HIPERLAN), Type 1 functional specification as specified in ETS 300 652 [1].

In this ETS, the term "HIPERLAN" is used to refer to HIPERLAN, Type 1.

2 Normative references

This ETS incorporates by dated and undated reference, provisions from other publications. These normative references are cited at the appropriate places in the text and the publications are listed hereafter. For dated references, subsequent amendments to or revisions of any of these publications apply to this ETS only when incorporated in it by amendment or revision. For undated references the latest edition of the publication referred to applies.

[1]   ETS 300 652 (1996) and prA1 (1996): "Radio Equipment and Systems (RES); HIgh PErformance Radio Local Area Network (HIPERLAN); Type 1; Functional specification".

[2]   ETS 300 836-2: "Radio Equipment and Systems (RES); HIgh PErformance Radio Local Area Network (HIPERLAN) Type 1; Conformance testing specification; Part 2: Protocol Implementation Conformance Statement (PICS)".

[3]   ISO/IEC 9646-1 (1994): "Information technology - Open systems interconnection - Conformance testing methodology and framework - Part 1: General concepts".

[4]   ISO/IEC 9646-2 (1994): "Information Technology - OSI Conformance Testing Methodology and Framework, Part 2: Abstract Test Suite Specification".

3 Definitions, symbols and abbreviations

3.1 Definitions

For the purposes of this ETS, the following definitions apply, in addition to those given in ETS 300 652 [1]:

abstract test method: See ISO/IEC 9646-1 [3].

abstract test suite: See ISO/IEC 9646-1 [3].

implementation under test: See ISO/IEC 9646-1 [3].

test purpose: See ISO/IEC 9646-1 [3].

3.2 Symbols

For the purposes of this ETS, the symbols defined in ETS 300 652 [1] apply.

3.3 Abbreviations

For the purposes of this ETS, the following abbreviations apply, in addition to those given in ETS 300 652 [1]:

ATM	Abstract Test Method
ATS	Abstract Test Suite
CAC	Channel Access Control
HIPERLAN	HIgh PErformance Radio Local Area Network
IUT	Implementation Under Test
MAC	Medium Acces Control
MSAP	MAC Service Access Point
PICS	Protocol Implementation Conformance Statement
TP	Test Purpose
TSS	Test Suite Structure
TSS&TP	Test Suite Structure and Test Purposes

4 Test suite structure

The test suite structure is defined in table 1.

Table 1: Test suite structure

HIPERLAN	MAC	LK	Lookup function	LKP	
		RF	Routing and Forwarding	FWD	Forwarder
				NFD	Non-forwarder
				FNF	Forwarder & Non-forwarder
				MRD	Multipoint relay determination
				ALI	Aliasing
				FOR	Forwarding
				ROU	Routing
		PC	Power conservation function	IPD	Individual-attention pattern declaration
				IPR	Individual-attention pattern recording
				GPD	Group-attendance pattern declaration
				GPR	Group-attendance pattern recording
		DT	User data transfer function	SAN	Sanity check computation
				EDN	User data encryption-decryption
				QOS	HMQoS failure reporting
				UDA	User data acceptance
				UDD	User data delivery
		HT	HMPDU transfer function	EXP	Expired HMPDU removal
				SEL	HMPDU selection
				TRA	HMPDU transmission
				REC	HMPDU reception
				REM	Expired duplicate detection entry removal
		SE	Structure & encoding of HMPDUs	VAR	
	CAC	EY	Elimination-Yield Non pre-emptive Priority Multiple Access	PRI	Prioritization phase
				ELE	Elimination phase
				YIE	Yield phase
				TRP	Transmission phase
				CHA	Conditions for commencing channel access
				OPS	Operator parameter settings
		CH	Channel permission function	CPD	CP-HCPDU declaration
				CPR	CP-HCPDU recording
		DT	User data transfer function.	UDT	
		HT	HCPDU transfer function	LBR	LBR-part checksum computation
				HBR	HBR-part checksum computation
				HDA	Hashed address computation
				TRA	LBR-HBR HCPDU transmission
				REC	HCPDU reception
		SE	Structure & encoding of HCPDUs	VAR	

5 Test purpose structure

5.1 TP naming convention

Individual TPs are numbered, starting at 1, within groups. These groups are organized according to the fourth level of the TSS. Additional references are added to identify whether the TP relates to the MAC or CAC and its group. See table 2.

Table 2: TP Identifier naming convention scheme

Identifier:		<layer>_<group>_<nn>	
<layer>	=	sublayer of protocol (second level of TSS):	MAC or CAC
<group>	=	group (fourth level of TSS):	3 letter field representing group reference according to TSS
<nn>	=	sequential number:	(1-99)

5.2 TP structure

Generally each TP has been written in a manner which is consistent with all other TPs. The intention of this is to make the TPs more readable and checkable. A particular structure has been used and this is illustrated in table 3. This table should be read in conjunction with any TP i.e. use a TP as an example to fully understand the table. Due to the nature of the protocol some TPs may not fit exactly into this structure.

Table 3: Structure of a single TP for HIPERLAN

TP Part	Text	Example
Header (bold)	<Identifier> **tab** subclause <subclause number in ETS 300 652 [1]> **tab** <type of test> **tab** PICS: <PICS reference>	see table 2 **subclause 0.0.0** **valid, invalid** **PICS: MC 0**
Stimulus (normal)	Ensure that the IUT (<type of IUT>) <precondition> <trigger> **see below for PDU structure** **or** <goal>	(a forwarder), (a non-forwarder) etc. having generated a ..., after receiving a ..., etc. on receipt of... in order to...
Reaction (indented)	<action> <conditions> **if the action is sending** **see below for PDU structure** <next action>, **etc.**	transmits, generates, does not transmit, etc. within the time T_{hr}, etc.
PDU structure	<PDU type> containing a **or** with **a)** <field name> encoded as **or** including <coding of the field> **or** **b)** <tuple name> with <tuple field> equal to <value of the tuple field> and **back to a) or b)**	HO-HMPDU, DT-HCPDU, etc. SA, ADA, etc. MSAP address of the IUT, etc. NT-Status, etc. T-Heard, etc.
NOTE:	Text in bold will not appear in TPs and text between <> is filled in for each TP and may differ from one TP to the next.	

6 Test purposes

6.1 TPs for MAC protocol

NOTE: In this clause the expression "(for the IUT)" is used to indicate that a DT-HMPDU received by the IUT contains a destination MAC Service Access Point (MSAP) address identifying the IUTs HMS user.

6.1.1 TPs for lookup function

MAC_LKP_1   **subclause 6.2.1**   **valid**   **PICS: MC 6**

Ensure that the IUT, on receipt of a HM-LOOKUP request primitive:

- generates a HC-UNITDATA request primitive containing an LR-HMPDU, with:

  - HIPERLAN identifier parameter set to Any_HIPERLAN;
  - destination address parameter set to All_Neighbours.

MAC_LKP_2   **subclauses 6.2.1, 6.2.3**   **valid**   **PICS: MC 6**

Ensure that the IUT, having generated an LR-HMPDU, on receipt of one and only one LC-HMPDU, before expiry of timer t_C:

- issues a HM-LOOKUP confirm service primitive containing HIPERLAN information with HIPERLAN name and HIPERLAN identifier as contained in the received LC-HMPDU.

MAC_LKP_3   **subclauses 6.2.1, 6.2.3**   **valid**   **PICS: MC 6**

Ensure that the IUT, having generated an LR-HMPDU, on receipt of exactly two LC-HMPDUs, each containing different HIPERLAN name and HIPERLAN identifier, before expiry of timer t_C:

- issues a HM-LOOKUP confirm service primitive containing HIPERLAN information with HIPERLAN names and HIPERLAN identifiers as contained in the received LC-HMPDUs.

MAC_LKP_4   **subclause 6.2.1**   **valid**   **PICS: MC 6**

Ensure that the IUT, having generated an LR-HMPDU, on receipt of no LC-HMPDUs, before expiry of timer t_C:

- issues a HM-LOOKUP confirm service primitive containing HIPERLAN information with no HIPERLAN names and HIPERLAN identifiers.

MAC_LKP_5   **subclause 6.2.3**   **inopportune**

Ensure that the IUT, not having generated an LR-HMPDU during a period of l_{LR} or an LC-HMPDU during a period of l_{LC}, on receipt of an LC-HMPDU:

- ignores the LC-HMPDU and does not issue a HM-LOOKUP confirm service primitive.

MAC_LKP_6   **subclause 6.2.3**   **inopportune**

Ensure that the IUT, not having generated an LR-HMPDU during a period of l_{LR}, and having generated but not yet transmitted an LC-HMPDU, on receipt of an LC-HMPDU containing the same HIPERLAN information as in the previously generated LC-HMPDU:

- cancels the transmission of the previously generated LC-HMPDU.

MAC_LKP_7 subclause 6.2.3 inopportune

Ensure that the IUT, not having generated an LR-HMPDU during a period of l_{LR}, and having generated but not yet transmitted an LC-HMPDU, on receipt of an LC-HMPDU containing the same HIPERLAN information as in the previously generated LC-HMPDU:

- does not issue a HM-LOOKUP confirm service primitive.

MAC_LKP_8 subclause 6.2.3 inopportune

Ensure that the IUT, not having generated an LR-HMPDU during a period of l_{LR}, and having generated but not yet transmitted an LC-HMPDU, on receipt of an LC-HMPDU containing the same HIPERLAN name and different HIPERLAN identifier as in the previously generated LC-HMPDU:

- proceeds with the transmission of the previously generated LC-HMPDU.

MAC_LKP_9 subclause 6.2.3 inopportune

Ensure that the IUT, not having generated an LR-HMPDU during a period of l_{LR}, and having generated but not yet transmitted an LC-HMPDU, on receipt of an LC-HMPDU containing the same HIPERLAN name and different HIPERLAN identifier as in the previously generated LC-HMPDU:

- does not issue a HM-LOOKUP confirm service primitive.

MAC_LKP_10 subclause 6.2.3 inopportune

Ensure that the IUT, not having generated an LR-HMPDU during a period of l_{LR}, and having generated but not yet transmitted an LC-HMPDU, on receipt of an LC-HMPDU containing the same HIPERLAN identifier and different HIPERLAN name as in the previously generated LC-HMPDU:

- proceeds with the transmission of the previously generated LC-HMPDU.

MAC_LKP_11 subclause 6.2.3 inopportune

Ensure that the IUT, not having generated an LR-HMPDU during a period of l_{LR}, and having generated but not yet transmitted an LC-HMPDU, on receipt of an LC-HMPDU containing the same HIPERLAN identifier and different HIPERLAN name as in the previously generated LC-HMPDU:

- does not issue a HM-LOOKUP confirm service primitive.

MAC_LKP_12 subclause 6.2.2 valid

Ensure that the IUT, on receipt of an LR-HMPDU:

- generates a HC-UNITDATA request primitive containing an LC-HMPDU, with HIPERLAN name and HIPERLAN identifier of the local HM-entitys HIPERLAN, with:

    - HIPERLAN identifier parameter set to Any_HIPERLAN;
    - destination address parameter set to All_Neighbours.

MAC_LKP_13 subclause 6.2.2 valid

Ensure that the IUT, having received an LR-HMPDU and having generated an LC-HMPDU in response, on receipt of a second LR-HMPDU prior to the transmission of the response to the first:

- ignores this second LR-HMPDU and does not generate an LC-HMPDU in response.

6.1.2   TPs for routing information maintenance function and forwarding

In all the TPs in this subclause the various information bases concerned with each TP should contain no entries at the start of the test, unless otherwise indicated in the TP. (Where the initial state of the information bases is directly related to the objective of a TP, the initial state is explicitly stated in the TP.)

6.1.2.1   TPs for routing information declaration and recording

> NOTE: In these TPs the tester should wait up to 95 % of t_{HO} or t_{TC} when an HO-HMPDU or TC-HMPDU is expected.

6.1.2.1.1   Forwarder

MAC_FWD_1   subclause 6.5.4.1   valid   PICS: R1

Ensure that the IUT (a forwarder), periodically:

-        transmits to the reserved HCSAP address All_Neighbours at least one HO-HMPDU containing zero or more {NA, NS} pairs, and with the RTI field encoded as R-Forwarder.

MAC_FWD_2   subclause 6.5.6.1   valid   PICS: R1

Ensure that the IUT (a forwarder), periodically:

-        transmits to the reserved HCSAP address All_Neighbours at least one TC-HMPDU containing zero or more {MSN, SMA} pairs.

MAC_FWD_3   subclause 6.5.6.1   valid   PICS: R1

Ensure that the IUT (a forwarder), periodically:

-        transmits TC-HMPDUs with OA set to the HCSAP of the IUT and with a holding time of I_{TC} and the transmission condition where C_{hid} is set to the HIPERLAN identifier of the IUTs HIPERLAN and C_{next} is set to All_Neighbours.

MAC_FWD_4   subclause 6.5.6.1   valid   PICS: R1

Ensure that the IUT (a forwarder), periodically:

-        transmits TC-HMPDUs with the transmission condition where C_{Pri} is set p_{TC} and C_{Dist} is set to n_{MHD}.

> NOTE 1:   This TP is untestable.

MAC_FWD_5   subclauses 6.5.6.1   valid   PICS: R1

Ensure that the IUT (a forwarder), having not received any HO-HMPDUs for a period exceeding t_{HO}:

-        periodically transmits a single TC-HMPDU not containing any {MSN,SMA} pairs.

MAC_FWD_6   subclauses 6.5.5.1, 6.5.4.1, 6.5.6.1   valid   PICS: R1

Ensure that the IUT (a forwarder), after receiving an HO-HMPDU not containing an {NA, NS} pair with NA equal to the MSAP address of the IUT, and where there exists no entry in the local neighbour information base with N_{Nbour} equal to the source address of the HO-HMPDU and no entry in the local source multipoint relay information base with S_{SMR} equal to the source address of the HO-HMPDU:

-        transmits, one or more HO-HMPDUs, with at least one containing an {NA, NS} pair with NA equal to the Source Address of the received HO-HMPDU and NS equal to N_Sym, and transmits, one or more TC-HMPDUs, with none containing an {MSN, SMA} pair with the SMA field equal to the Source Address of the received HO-HMPDU.

MAC_FWD_7   **subclauses 6.5.5.1, 6.5.4.1, 6.5.6.1**   **valid**   **PICS: R1**

Ensure that the IUT (a forwarder), after receiving an HO-HMPDU containing an {NA, NS} pair with NA equal to the MSAP address of the IUT and NS equal to N_Asym, and where there exists no entry in the local neighbour information base with N_{Nbour} equal to the source address of the HO-HMPDU and N_{Status} equal to N_Asym and no entry in the local source multipoint relay information base with S_{SMR} equal to the source address of the HO-HMPDU:

- transmits, one or more HO-HMPDUs, with at least one containing a {NA, NS} pair with NA equal to the Source Address of the received HO-HMPDU and NS equal to N_Sym or N_MultiRelay, and transmits, one or more TC-HMPDUs, with none containing an {MSN, SMA} pair with the SMA field equal to the Source Address of the received HO-HMPDU.

MAC_FWD_8   **subclauses 6.5.5.1, 6.5.4.1, 6.5.6.1**   **valid**   **PICS: R1**

Ensure that the IUT (a forwarder), after receiving an HO-HMPDU containing an {NA, NS} pair with NA equal to the MSAP address of the IUT and NS equal to N_Sym, and where there exists no entry in the local neighbour information base with N_{Nbour} equal to the source address of the HO-HMPDU and no entry in the local source multipoint relay information base with S_{SMR} equal to the source address of the HO-HMPDU:

- transmits, one or more HO-HMPDUs, with at least one containing a {NA, NS} pair with NA equal to the Source Address of the received HO-HMPDU and NS equal to N_Sym or N_MultiRelay, and transmits, one or more TC-HMPDUs, with none containing an {MSN, SMA} pair with the SMA field equal to the Source Address of the received HO-HMPDU.

MAC_FWD_9   **subclauses 6.5.5.1, 6.5.4.1, 6.5.6.1**   **valid**   **PICS: R1**

Ensure that the IUT (a forwarder), after receiving an HO-HMPDU containing an {NA, NS} pair with NA equal to the MSAP address of the IUT and NS equal to N_MultiRelay, and where there exists no entry in the local neighbour information base with N_{Nbour} equal to the source address of the HO-HMPDU:

- transmits, one or more HO-HMPDUs, with at least one containing an {NA, NS} pair with NA equal to the Source Address of the received HO-HMPDU and NS equal to N_Sym or N_MultiRelay, and transmits, one or more TC-HMPDUs, with at least one containing an {MSN, SMA} pair with the SMA field equal to the Source Address of the received HO-HMPDU and the MSN field equal to the value of the MSN field in the received HO-HMPDU.

MAC_FWD_10   **subclauses 6.5.5.1, 6.5.4.1, 6.5.6.1**   **valid**   **PICS: R1**

Ensure that the IUT (a forwarder), after receiving an HO-HMPDU not containing an {NA, NS} pair with NA equal to the MSAP address of the IUT, and where there exists an entry in the local neighbour information base with N_{Nbour} equal to the source address of the HO-HMPDU and N_{Status} equal to N_Asym and no entry in the local source multipoint relay information base with S_{SMR} equal to the source address of the HO-HMPDU:

- transmits, one or more HO-HMPDUs, with at least one containing a {NA, NS} pair with NA equal to the Source Address of the received HO-HMPDU and NS equal to N_Asym, and transmits, one or more TC-HMPDUs, with none containing an {MSN, SMA} pair with the SMA field equal to the Source Address of the received HO-HMPDU.

MAC_FWD_11   **subclauses 6.5.5.1, 6.5.4.1, 6.5.6.1**   **valid**   **PICS: R1**

Ensure that the IUT (a forwarder), after receiving an HO-HMPDU containing an {NA, NS} pair with NA equal to the MSAP address of the IUT and NS equal to N_Asym, and where there exists an entry in the local neighbour information base with N_{Nbour} equal to the source address of the HO-HMPDU and N_{Status} equal to N_Asym and no entry in the local source multipoint relay information base with S_{SMR} equal to the source address of the HO-HMPDU:

- transmits, one or more HO-HMPDUs, with at least one containing an {NA, NS} pair with NA equal to the Source Address of the received HO-HMPDU and NS equal to N_Sym or N_MultiRelay, and transmits, one or more TC-HMPDUs, with none containing an {MSN, SMA} pair with the SMA field equal to the Source Address of the received HO-HMPDU.

MAC_FWD_12   **subclauses 6.5.5.1, 6.5.4.1, 6.5.6.1**   **valid**   **PICS: R1**

Ensure that the IUT (a forwarder), after receiving an HO-HMPDU containing an {NA, NS} pair with NA equal to the MSAP address of the IUT and NS equal to N_Sym, and where there exists an entry in the local neighbour information base with N_{Nbour} equal to the source address of the HO-HMPDU and N_{Status} equal to N_Asym and no entry in the local source multipoint relay information base with S_{SMR} equal to the source address of the HO-HMPDU:

-     transmits, one or more HO-HMPDUs, with at least one containing an {NA, NS} pair with NA equal to the Source Address of the received HO-HMPDU and NS equal to N_Sym or N_MultiRelay, and transmits, one or more TC-HMPDUs, with none containing an {MSN, SMA} pair with the SMA field equal to the Source Address of the received HO-HMPDU.

MAC_FWD_13   **subclauses 6.5.5.1, 6.5.4.1, 6.5.6.1**   **valid**   **PICS: R1**

Ensure that the IUT (a forwarder), after receiving an HO-HMPDU containing an {NA, NS} pair with NA equal to the MSAP address of the IUT and NS equal to N_MultiRelay, and where there exists an entry in the local neighbour information base with N_{Nbour} equal to the source address of the HO-HMPDU and N_{Status} equal to N_Asym and no entry in the local source multipoint relay information base with S_{SMR} equal to the source address of the HO-HMPDU:

-     transmits, one or more HO-HMPDUs, with at least one containing a {NA, NS} pair with NA equal to the Source Address of the received HO-HMPDU and NS equal to N_Sym or N_MultiRelay, and transmits, one or more TC-HMPDUs, with at least one containing an {MSN, SMA} pair with the SMA field equal to the Source Address of the received HO-HMPDU and the MSN field equal to the value of the MSN field in the received HO-HMPDU.

MAC_FWD_14   **subclauses 6.5.5.1, 6.5.4.1, 6.5.6.1**   **valid**   **PICS: R1**

Ensure that the IUT (a forwarder), after receiving an HO-HMPDU not containing an {NA, NS} pair with NA equal to the MSAP address of the IUT, and where there exists an entry in the local neighbour information base with N_{Nbour} equal to the source address of the HO-HMPDU and N_{Status} equal to N_Sym or N_MultiRelay and no entry in the local source multipoint relay information base with S_{SMR} equal to the source address of the HO-HMPDU:

-     transmits, one or more HO-HMPDUs, with at least one containing an {NA, NS} pair with NA equal to the Source Address of the received HO-HMPDU and NS equal to N_Sym or N_MultiRelay, and transmits, one or more TC-HMPDUs, with none containing an {MSN, SMA} pair with the SMA field equal to the Source Address of the received HO-HMPDU.

MAC_FWD_15   **subclauses 6.5.5.1, 6.5.4.1, 6.5.6.1**   **valid**   **PICS: R1**

Ensure that the IUT (a forwarder), after receiving an HO-HMPDU containing an {NA, NS} pair with NA equal to the MSAP address of the IUT and NS equal to N_Asym, and where there exists an entry in the local neighbour information base with N_{Nbour} equal to the source address of the HO-HMPDU and N_{Status} equal to N_Sym or N_MultiRelay and no entry in the local source multipoint relay information base with S_{SMR} equal to the source address of the HO-HMPDU:

-     transmits, one or more HO-HMPDUs, with at least one containing an {NA, NS} pair with NA equal to the Source Address of the received HO-HMPDU and NS equal to N_Sym or N_MultiRelay, and transmits, one or more TC-HMPDUs, with none containing an {MSN, SMA} pair with the SMA field equal to the Source Address of the received HO-HMPDU.

MAC_FWD_16   **subclauses 6.5.5.1, 6.5.4.1, 6.5.6.1**   **valid**   **PICS: R1**

Ensure that the IUT (a forwarder), after receiving an HO-HMPDU containing an {NA, NS} pair with NA equal to the MSAP address of the IUT and NS equal to N_Sym, and where there exists an entry in the local neighbour information base with N_{Nbour} equal to the source address of the HO-HMPDU and N_{Status} equal to N_Sym or N_MultiRelay and no entry in the local source multipoint relay information base with S_{SMR} equal to the source address of the HO-HMPDU:

-     transmits, one or more HO-HMPDUs, with at least one containing an {NA, NS} pair with NA equal to the Source Address of the received HO-HMPDU and NS equal to N_Sym or N_MultiRelay, and transmits, one or more TC-HMPDUs, with none containing an {MSN, SMA} pair with the SMA field equal to the Source Address of the received HO-HMPDU.

MAC_FWD_17   **subclauses 6.5.5.1, 6.5.4.1, 6.5.6.1**   **valid**   **PICS: R1**

Ensure that the IUT (a forwarder), after receiving an HO-HMPDU containing an {NA, NS} pair with NA equal to the MSAP address of the IUT and NS equal to N_MultiRelay, and where there exists an entry in the local neighbour information base with N_{Nbour} equal to the source address of the HO-HMPDU and N_{Status} equal to N_Sym or N_MultiRelay and no entry in the local source multipoint relay information base with S_{SMR} equal to the source address of the HO-HMPDU:

-     transmits, one or more HO-HMPDUs, with at least one containing a {NA, NS} pair with NA equal to the Source Address of the received HO-HMPDU and NS equal to N_Sym or N_MultiRelay, and transmits, one or more TC-HMPDUs, with at least one containing an {MSN, SMA} pair with the SMA field equal to the Source Address of the received HO-HMPDU and the MSN field equal to the value of the MSN field in the received HO-HMPDU.

MAC_FWD_18   **subclauses 6.5.5.1, 6.5.4.1, 6.5.6.1**   **valid**   **PICS: R1**

Ensure that the IUT (a forwarder), after receiving an HO-HMPDU containing no {NA, NS} pair with NA equal to the MSAP address of the IUT, and where there exists an entry in the local neighbour information base with N_{Nbour} equal to the source address of the HO-HMPDU and N_{Status} equal to N_Sym or N_MultiRelay and an entry in the local source multipoint relay information base with S_{SMR} equal to the source address of the HO-HMPDU and with S_{seq} equal to a known value:

-     transmits, one or more HO-HMPDUs, with at least one containing a {NA, NS} pair with NA equal to the Source Address of the received HO-HMPDU and NS equal to N_Sym or N_MultiRelay, and transmits, one or more TC-HMPDUs, with at least one containing an {MSN, SMA} pair with the SMA field equal to the Source Address of the received HO-HMPDU and the MSN field equal to the value of S_{seq}.

MAC_FWD_19   **subclauses 6.5.5.1, 6.5.4.1, 6.5.6.1**   **valid**   **PICS: R1**

Ensure that the IUT (a forwarder), after receiving an HO-HMPDU containing an {NA, NS} pair with NA equal to the MSAP address of the IUT and NS equal to N_Asym, and where there exists an entry in the local neighbour information base with N_{Nbour} equal to the source address of the HO-HMPDU and N_{Status} equal to N_Sym or N_MultiRelay and an entry in the local source multipoint relay information base with S_{SMR} equal to the source address of the HO-HMPDU and with S_{seq} equal to a known value which precedes the value of MSN in the HO-HMPDU:

-     transmits, one or more HO-HMPDUs, with at least one containing a {NA, NS} pair with NA equal to the Source Address of the received HO-HMPDU and NS equal to N_Sym or N_MultiRelay, and transmits, one or more TC-HMPDUs, with none containing an {MSN, SMA} pair with the SMA field equal to the Source Address of the received HO-HMPDU.

MAC_FWD_20   **subclauses 6.5.5.1, 6.5.4.1, 6.5.6.1**   **valid**   **PICS: R1**

Ensure that the IUT (a forwarder), after receiving an HO-HMPDU containing an {NA, NS} pair with NA equal to the MSAP address of the IUT and NS equal to N_Asym, and where there exists an entry in the local neighbour information base with N_{Nbour} equal to the source address of the HO-HMPDU and N_{Status} equal to N_Sym or N_MultiRelay and an entry in the local source multipoint relay information base with S_{SMR} equal to the source address of the HO-HMPDU and with S_{seq} equal to a known value equal to the value of MSN in the HO-HMPDU:

-       transmits, one or more HO-HMPDUs, with at least one containing a {NA, NS} pair with NA equal to the Source Address of the received HO-HMPDU and NS equal to N_Sym or N_MultiRelay, and transmits, one or more TC-HMPDUs, with none containing an {MSN, SMA} pair with the SMA field equal to the Source Address of the received HO-HMPDU.

MAC_FWD_21   **subclauses 6.5.5.1, 6.5.4.1, 6.5.6.1**   **valid**   **PICS: R1**

Ensure that the IUT (a forwarder), after receiving an HO-HMPDU containing an {NA, NS} pair with NA equal to the MSAP address of the IUT and NS equal to N_Asym, and where there exists an entry in the local neighbour information base with N_{Nbour} equal to the source address of the HO-HMPDU and N_{Status} equal to N_Sym or N_MultiRelay and an entry in the local source multipoint relay information base with S_{SMR} equal to the source address of the HO-HMPDU and with S_{seq} equal to a known value which is preceded by the value of MSN in the HO-HMPDU:

-       transmits, one or more HO-HMPDUs, with at least one containing a {NA, NS} pair with NA equal to the Source Address of the received HO-HMPDU and NS equal to N_Sym or N_MultiRelay, and transmits, one or more TC-HMPDUs, with at least one containing an {MSN, SMA} pair with the SMA field equal to the Source Address of the received HO-HMPDU and the MSN field equal to the value of S_{seq}.

MAC_FWD_22   **subclauses 6.5.5.1, 6.5.4.1, 6.5.6.1**   **valid**   **PICS: R1**

Ensure that the IUT (a forwarder), after receiving an HO-HMPDU containing an {NA, NS} pair with NA equal to the MSAP address of the IUT and NS equal to N_Sym, and where there exists an entry in the local neighbour information base with N_{Nbour} equal to the source address of the HO-HMPDU and N_{Status} equal to N_Sym or N_MultiRelay and an entry in the local source multipoint relay information base with S_{SMR} equal to the source address of the HO-HMPDU and with S_{seq} equal to a known value which precedes the value of MSN in the HO-HMPDU:

-       transmits, one or more HO-HMPDUs, with at least one containing a {NA, NS} pair with NA equal to the Source Address of the received HO-HMPDU and NS equal to N_Sym or N_MultiRelay, and transmits, one or more TC-HMPDUs, with none containing an {MSN, SMA} pair with the SMA field equal to the Source Address of the received HO-HMPDU.

MAC_FWD_23   **subclauses 6.5.5.1, 6.5.4.1, 6.5.6.1**   **valid**   **PICS: R1**

Ensure that the IUT (a forwarder), after receiving an HO-HMPDU containing an {NA, NS} pair with NA equal to the MSAP address of the IUT and NS equal to N_Sym, and where there exists an entry in the local neighbour information base with N_{Nbour} equal to the source address of the HO-HMPDU and N_{Status} equal to N_Sym or N_MultiRelay and an entry in the local source multipoint relay information base with S_{SMR} equal to the source address of the HO-HMPDU and with S_{seq} equal to a known value equal to the value of MSN in the HO-HMPDU:

-       transmits, one or more HO-HMPDUs, with at least one containing a {NA, NS} pair with NA equal to the Source Address of the received HO-HMPDU and NS equal to N_Sym or N_MultiRelay, and transmits, one or more TC-HMPDUs, with none containing an {MSN, SMA} pair with the SMA field equal to the Source Address of the received HO-HMPDU.

MAC_FWD_24   **subclauses 6.5.5.1, 6.5.4.1, 6.5.6.1**   **valid**   **PICS: R1**

Ensure that the IUT (a forwarder), after receiving an HO-HMPDU containing an {NA, NS} pair with NA equal to the MSAP address of the IUT and NS equal to N_Sym, and where there exists an entry in the local neighbour information base with N_{Nbour} equal to the source address of the HO-HMPDU and N_{Status} equal to N_Sym or N_MultiRelay and an entry in the local source multipoint relay information base with

S_{SMR} equal to the source address of the HO-HMPDU and with S_{seq} equal to a known value which is preceded by the value of MSN in the HO-HMPDU:

- transmits, one or more HO-HMPDUs, with at least one containing a {NA, NS} pair with NA equal to the Source Address of the received HO-HMPDU and NS equal to N_Sym or N_MultiRelay, and transmits, one or more TC-HMPDUs, with at least one containing an {MSN, SMA} pair with the SMA field equal to the Source Address of the received HO-HMPDU and the MSN field equal to the value of S_{seq}.

MAC_FWD_25   subclauses 6.5.5.1, 6.5.4.1, 6.5.6.1   valid   PICS: R1

Ensure that the IUT (a forwarder), after receiving an HO-HMPDU containing an {NA, NS} pair with NA equal to the MSAP address of the IUT and NS equal to N_MultiRelay, and where there exists an entry in the local neighbour information base with N_{Nbour} equal to the source address of the HO-HMPDU and N_{Status} equal to N_Sym or N_MultiRelay and an entry in the local source multipoint relay information base with S_{SMR} equal to the source address of the HO-HMPDU and with S_{seq} equal to a known value which precedes the value of MSN in the HO-HMPDU:

- transmits, one or more HO-HMPDUs, with at least one containing a {NA, NS} pair with NA equal to the Source Address of the received HO-HMPDU and NS equal to N_Sym or N_MultiRelay, and transmits, one or more TC-HMPDUs, with at least one containing an {MSN, SMA} pair with the SMA field equal to the Source Address of the received HO-HMPDU and the MSN field equal to the value of the MSN field in the received HO-HMPDU.

MAC_FWD_26   subclauses 6.5.5.1, 6.5.4.1, 6.5.6.1   valid   PICS: R1

Ensure that the IUT (a forwarder), after receiving an HO-HMPDU containing an {NA, NS} pair with NA equal to the MSAP address of the IUT and NS equal to N_MultiRelay, and where there exists an entry in the local neighbour information base with N_{Nbour} equal to the source address of the HO-HMPDU and N_{Status} equal to N_Sym or N_MultiRelay and an entry in the local source multipoint relay information base with S_{SMR} equal to the source address of the HO-HMPDU and with S_{seq} equal to a known value equal to the value of MSN in the HO-HMPDU:

- transmits, one or more HO-HMPDUs, with at least one containing a {NA, NS} pair with NA equal to the Source Address of the received HO-HMPDU and NS equal to N_Sym or N_MultiRelay, and transmits, one or more TC-HMPDUs, with at least one containing an {MSN, SMA} pair with the SMA field equal to the Source Address of the received HO-HMPDU and the MSN field equal to the value of the MSN field in the received HO-HMPDU.

MAC_FWD_27   subclauses 6.5.5.1, 6.5.4.1, 6.5.6.1   valid   PICS: R1

Ensure that the IUT (a forwarder), after receiving an HO-HMPDU containing an {NA, NS} pair with NA equal to the MSAP address of the IUT and NS equal to N_MultiRelay, and where there exists an entry in the local neighbour information base with N_{Nbour} equal to the source address of the HO-HMPDU and N_{Status} equal to N_Sym or N_MultiRelay and an entry in the local source multipoint relay information base with S_{SMR} equal to the source address of the HO-HMPDU and with S_{seq} equal to a known value which is preceded by the value of MSN in the HO-HMPDU:

- transmits, one or more HO-HMPDUs, with at least one containing a {NA, NS} pair with NA equal to the Source Address of the received HO-HMPDU and NS equal to N_Sym or N_MultiRelay, and transmits, one or more TC-HMPDUs, with at least one containing an {MSN, SMA} pair with the SMA field equal to the Source Address of the received HO-HMPDU and the MSN field equal to the value of S_{seq}.

MAC_FWD_28   subclauses 6.5.4.1, 6.5.6.1   valid   PICS: R1

Ensure that the IUT (a forwarder), after a period of t_{HO} following receipt of an HO-HMPDU containing an {NA, NS} pair with NA equal to the MSAP address of the IUT and NS equal to N_MultiRelay, and where there exists no entry in the local source multipoint relay information base with S_{SMR} equal to the source address of the HO-HMPDU:

- transmits one or more TC-HMPDUs, with none containing an {MSN, SMA} pair with the SMA field equal to the Source Address of the received HO-HMPDU.

MAC_FWD_29   **subclauses 6.5.4.1, 6.5.6.1**   **valid**   **PICS: R1**

Ensure that the IUT (a forwarder), after receiving two HO-HMPDUs each containing an {NA, NS} pair with NA equal to the MSAP address of the IUT and NS equal to N_MultiRelay and where the value of MSN in the first HO-HMPDU preceded that in the second HO-HMPDU:

- transmits, periodically TC-HMPDUs, with those TC-HMPDUs transmitted within a period of t_{HO} following the receipt of the second HO-HMPDU each containing an {MSN, SMA} pair with SMA equal to the Source Address of the received HO-HMPDU and those transmitted subsequently not containing any such {MSN, SMA} pair.

     NOTE 2:   The time between the two HO-HMPDUs should be in the range of 50 % to 90 % of t_{HO}. There should not be any other entries in the local source multipoint relay information base to ensure that the IUT does not send more than one TC-HMPDU for each Source multipoint relay information declaration. At least one TC-HMPDU received between the second HO-HMPDU and t_{HO} after the first HO-HMPDU, one between t_{HO} after the first and t_{HO} after the second HO-HMPDU and one after t_{HO} after the second HO-HMPDU should be taken into account to determine the verdict of the test case derived from this TP.

MAC_FWD_30   **subclauses 6.5.4.1, 6.5.6.1**   **valid**   **PICS: R1**

Ensure that the IUT (a forwarder), after receiving two HO-HMPDUs each containing an {NA, NS} pair with NA equal to the MSAP address of the IUT and NS equal to N_MultiRelay and where the value of MSN in the first HO-HMPDU is equal to that in the second HO-HMPDU:

- transmits, periodically TC-HMPDUs, with those TC-HMPDUs transmitted within a period of t_{HO} following the receipt of the second HO-HMPDU each containing an {MSN, SMA} pair with SMA equal to the Source Address of the received HO-HMPDU and those transmitted subsequently not containing any such {MSN, SMA} pair.

     NOTE 3:   The time between the two HO-HMPDUs should be in the range of 50 % to 90 % of t_{HO}. There should not be any other entries in the local source multipoint relay information base to ensure that the IUT does not send more than one TC-HMPDU for each Source multipoint relay information declaration. At least one TC-HMPDU received between the second HO-HMPDU and t_{HO} after the first HO-HMPDU, one between t_{HO} after the first and t_{HO} after the second HO-HMPDU and one after t_{HO} after the second HO-HMPDU should be taken into account to determine the verdict of the test case derived from this TP.

MAC_FWD_31   **subclauses 6.5.4.1, 6.5.5.1**   **valid**   **PICS: R1**

Ensure that the IUT, after receiving two HO-HMPDUs each containing an {NA, NS} pair with NA equal to the MSAP address of the IUT and NS equal to N_MultiRelay and where the value of MSN in the second HO-HMPDU precedes that in the first HO-HMPDU:

- transmits, periodically TC-HMPDUs, with those TC-HMPDUs transmitted within a period of t_{HO} following the receipt of the first HO-HMPDU each containing an {MSN, SMA} pair with SMA equal to the Source Address of the received HO-HMPDU and those transmitted subsequently not containing any such {MSN, SMA} pair.

     NOTE 4:   The time between the two HO-HMPDUs should be in the range of 50 % to 90 % of t_{HO}. There should not be any other entries in the local source multipoint relay information base to ensure that the IUT does not send more than one TC-HMPDU for each Source multipoint relay information declaration. At least one TC-HMPDU received between the second HO-HMPDU and t_{HO} after the first HO-HMPDU, one between t_{HO} after the first and t_{HO} after the second HO-HMPDU and one after t_{HO} after the second HO-HMPDU should be taken into account to determine the verdict of the test case derived from this TP.

MAC_FWD_32   **subclauses 6.5.4.1, 6.5.5.1**   **valid**   **PICS: R1**

Ensure that the IUT, after receiving two HO-HMPDUs the first containing an {NA, NS} pair with NA equal to the MSAP address of the IUT and NS equal to N_MultiRelay and the second containing no {NA, NS} pairs:

-       transmits, periodically TC-HMPDUs, with those TC-HMPDUs transmitted within a period of t_{HO} following the receipt of the first HO-HMPDU each containing an {MSN, SMA} pair with SMA equal to the Source Address of the received HO-HMPDU and those transmitted subsequently not containing any such {MSN, SMA} pair.

    NOTE 5:   The time between the two HO-HMPDUs should be in the range of 50 % to 90 % of t_{HO}. There should not be any other entries in the local source multipoint relay information base to ensure that the IUT does not send more than one TC-HMPDU for each Source multipoint relay information declaration. At least one TC-HMPDU received between the second HO-HMPDU and t_{HO} after the first HO-HMPDU, one between t_{HO} after the first and t_{HO} after the second HO-HMPDU and one after t_{HO} after the second HO-HMPDU should be taken into account to determine the verdict of the test case derived from this TP.

MAC_FWD_33   **subclause 6.5.8.1**   **valid**   **PICS: R1**

Ensure that the IUT, after having received an HO-HMPDU from source address **A** containing an {NA, NS} pair with NA equal to the MSAP address of the IUT and NS equal to N_MultiRelay, on receiving a TC-HMPDU from source address **A** and OA equal to **A**:

-       transmits a TC-HMPDU with the same values of PSN, OA and all {MSN, SMA} pairs as in the received TC-HMPDU.

MAC_FWD_34   **subclause 6.5.8.1**   **valid**   **PICS: R1**

Ensure that the IUT, after having received an HO-HMPDU from source address **A** containing an {NA, NS} pair with NA equal to the MSAP address of the IUT and NS equal to N_MultiRelay, on receiving a TC-HMPDU from source address **A** and OA equal to **A**:

-       transmits a TC-HMPDU with a holding time equal to the residual lifetime of the received TC-HMPDU and a transmission condition where C_{hid} is set to the HIPERLAN identifier of the IUTs HIPERLAN and C_{next} is set to All_Neighbours.

MAC_FWD_35   **subclause 6.5.8.1**   **valid**   **PICS: R1**

Ensure that the IUT, after having received an HO-HMPDU from source address **A** containing an {NA, NS} pair with NA equal to the MSAP address of the IUT and NS equal to N_MultiRelay, on receiving a TC-HMPDU from source address **A** and OA equal to **A**:

-       transmits a TC-HMPDU with the transmission condition where C_{Pri} is set p_{TC} and C_{Dist} is set to n_{MHD}.

    NOTE 6:   This TP is untestable.

MAC_FWD_36   **subclause 6.5.8.1**   **valid**   **PICS: R1**

Ensure that the IUT, after having received an HO-HMPDU from source address **A** containing an {NA, NS} pair with NA equal to the MSAP address of the IUT and NS equal to N_MultiRelay, on receiving a TC-HMPDU from source address **A** and OA equal to **B**:

-       transmits a TC-HMPDU with the same values of PSN, OA and all {MSN,SMA} pairs as in the received TC-HMPDU.

MAC_FWD_37   **subclause 6.5.8.1**   **valid**   **PICS: R1**

Ensure that the IUT, after having received an HO-HMPDU from source address **A** containing an {NA, NS} pair with NA equal to the MSAP address of the IUT and NS equal to N_MultiRelay, on receiving a TC-HMPDU from source address **B** and OA equal to **A**:

- does not transmit a TC-HMPDU with the same values of PSN and OA.

MAC_FWD_38   **subclause 6.5.8.1**   **valid**   **PICS: R1**

Ensure that the IUT, after having received an HO-HMPDU from source address **A** containing an {NA, NS} pair with NA equal to the MSAP address of the IUT and NS equal to N_MultiRelay, on receiving a TC-HMPDU from source address **B** and OA equal to **B**:

- does not transmit a TC-HMPDU with the same values of PSN and OA.

MAC_FWD_39   **subclause 6.5.8.1**   **valid**   **PICS: R1**

Ensure that the IUT, after having received an HO-HMPDU from source address **A** containing an {NA, NS} pair with NA equal to the MSAP address of the IUT and NS equal to N_Sym, on receiving a TC-HMPDU from source address **A** and OA equal to **A**:

- does not transmit a TC-HMPDU with the same values of PSN and OA.

MAC_FWD_40   **subclause 6.5.8.1**   **valid**   **PICS: R1**

Ensure that the IUT, after having received an HO-HMPDU from source address **A** containing an {NA, NS} pair with NA equal to the MSAP address of the IUT and NS equal to N_MultiRelay, on receiving a TC-HMPDU from source address **A** with OA equal to **A** and RL equal to 0:

- does not transmit a TC-HMPDU with the same values of PSN and OA.

6.1.2.1.2   **Non forwarder**

MAC_NFD_1   **subclause 6.5.4.1**   **valid**   **PICS: R2**

Ensure that the IUT (a non-forwarder), periodically:

- transmits to the reserved HCSAP address All_Neighbours at least one HO-HMPDU containing zero or more {NA, NS} pairs, and with the RTI field encoded as R-NonForwarder.

MAC_NFD_2   **subclauses 6.5.4.1, 6.5.5.1**   **valid**   **PICS: R2**

Ensure that the IUT (a non-forwarder), after receiving an HO-HMPDU not containing an {NA, NS} pair with NA equal to the MSAP address of the IUT, and where there exists no entry in the local neighbour information base with N_{Nbour} equal to the source address of the HO-HMPDU:

- transmits, one or more HO-HMPDUs, with at least one containing an {NA, NS} pair with NA equal to the Source Address of the received HO-HMPDU and NS equal to N_Asym.

MAC_NFD_3   **subclauses 6.5.4.1, 6.5.5.1**   **valid**   **PICS: R2**

Ensure that the IUT (a non-forwarder), after receiving an HO-HMPDU containing an {NA, NS} pair with NA equal to the MSAP address of the IUT and NS equal to N_Asym, and where there exists no entry in the local neighbour information base with N_{Nbour} equal to the source address of the HO-HMPDU:

- transmits, one or more HO-HMPDUs, with at least one containing an {NA, NS} pair with NA equal to the Source Address of the received HO-HMPDU and NS equal to N_Sym or N_MultiRelay.

MAC_NFD_4   **subclauses 6.5.4.1, 6.5.5.1**   **valid**   **PICS: R2**

Ensure that the IUT (a non-forwarder), after receiving an HO-HMPDU containing an {NA, NS} pair with NA equal to the MSAP address of the IUT and NS equal to N_Sym, and where there exists no entry in the local neighbour information base with N_{Nbour} equal to the source address of the HO-HMPDU:

- transmits, one or more HO-HMPDUs, with at least one containing an {NA, NS} pair with NA equal to the Source Address of the received HO-HMPDU and NS equal to N_Sym or N_MultiRelay.

MAC_NFD_5   **subclauses 6.5.4.1, 6.5.5.1**   **invalid**   **PICS: R2**

Ensure that the IUT (a non-forwarder), after receiving an HO-HMPDU containing an {NA, NS} pair with NA equal to the MSAP address of the IUT and NS equal to N_MultiRelay, and where there exists no entry in the local neighbour information base with N_{Nbour} equal to the source address of the HO-HMPDU:

- transmits, one or more HO-HMPDUs, with at least one containing an {NA, NS} pair with NA equal to the Source Address of the received HO-HMPDU and NS equal to N_Sym or N_MultiRelay.

MAC_NFD_6   **subclauses 6.5.4.1, 6.5.5.1**   **valid**   **PICS: R2**

Ensure that the IUT (a non-forwarder), after receiving an HO-HMPDU not containing an {NA, NS} pair with NA equal to the MSAP address of the IUT, and where there exists an entry in the local neighbour information base with N_{Nbour} equal to the source address of the HO-HMPDU and N_{Status} equal to N_Asym:

- transmits, one or more HO-HMPDUs, with at least one containing an {NA, NS} pair with NA equal to the Source Address of the received HO-HMPDU and NS equal to N_Asym.

MAC_NFD_7   **subclauses 6.5.4.1, 6.5.5.1**   **valid**   **PICS: R2**

Ensure that the IUT (a non-forwarder), after receiving an HO-HMPDU containing an {NA, NS} pair with NA equal to the MSAP address of the IUT and NS equal to N_Asym, and where there exists an entry in the local neighbour information base with N_{Nbour} equal to the source address of the HO-HMPDU and N_{Status} equal to N_Asym:

- transmits, one or more HO-HMPDUs, with at least one containing an {NA, NS} pair with NA equal to the Source Address of the received HO-HMPDU and NS equal to N_Sym or N_MultiRelay.

MAC_NFD_8   **subclauses 6.5.4.1, 6.5.5.1**   **valid**   **PICS: R2**

Ensure that the IUT (a non-forwarder), after receiving an HO-HMPDU containing an {NA, NS} pair with NA equal to the MSAP address of the IUT and NS equal to N_Sym, and where there exists an entry in the local neighbour information base with N_{Nbour} equal to the source address of the HO-HMPDU and N_{Status} equal to N_Asym:

- transmits, one or more HO-HMPDUs, with at least one containing an {NA, NS} pair with NA equal to the Source Address of the received HO-HMPDU and NS equal to N_Sym or N_MultiRelay.

MAC_NFD_9   **subclauses 6.5.4.1, 6.5.5.1**   **invalid**   **PICS: R2**

Ensure that the IUT (a non-forwarder), after receiving an HO-HMPDU containing an {NA, NS} pair with NA equal to the MSAP address of the IUT and NS equal to N_MultiRelay, and where there exists an entry in the local neighbour information base with N_{Nbour} equal to the source address of the HO-HMPDU and N_{Status} equal to N_Asym:

- transmits, one or more HO-HMPDUs, with at least one containing an {NA, NS} pair with NA equal to the Source Address of the received HO-HMPDU and NS equal to N_Sym or N_MultiRelay.

MAC_NFD_10   subclauses 6.5.4.1, 6.5.5.1   **valid**   **PICS: R2**

Ensure that the IUT (a non-forwarder), after receiving an HO-HMPDU not containing an {NA, NS} pair with NA equal to the MSAP address of the IUT, and where there exists an entry in the local neighbour information base with N_{Nbour} equal to the source address of the HO-HMPDU and N_{Status} equal to N_Sym or N_MultiRelay:

-     transmits, one or more HO-HMPDUs, with at least one containing an {NA, NS} pair with NA equal to the Source Address of the received HO-HMPDU and NS equal to N_Sym or N_MultiRelay.

MAC_NFD_11   subclauses 6.5.4.1 , 6.5.5.1   **valid**   **PICS: R2**

Ensure that the IUT (a non-forwarder), after receiving an HO-HMPDU containing an {NA, NS} pair with NA equal to the MSAP address of the IUT and NS equal to N_Asym, and where there exists an entry in the local neighbour information base with N_{Nbour} equal to the source address of the HO-HMPDU and N_{Status} equal to N_Sym or N_MultiRelay:

-     transmits, one or more HO-HMPDUs, with at least one containing an {NA, NS} pair with NA equal to the Source Address of the received HO-HMPDU and NS equal to N_Sym or N_MultiRelay.

MAC_NFD_12   subclauses 6.5.4.1, 6.5.5.1   **valid**   **PICS: R2**

Ensure that the IUT (a non-forwarder), after receiving an HO-HMPDU containing an {NA, NS} pair with NA equal to the MSAP address of the IUT and NS equal to N_Sym, and where there exists an entry in the local neighbour information base with N_{Nbour} equal to the source address of the HO-HMPDU and N_{Status} equal to N_Sym or N_MultiRelay:

-     transmits, one or more HO-HMPDUs, with at least one containing an {NA, NS} pair with NA equal to the Source Address of the received HO-HMPDU and NS equal to N_Sym or N_MultiRelay.

MAC_NFD_13   subclauses 6.5.4.1, 6.5.5.1   **invalid**   **PICS: R2**

Ensure that the IUT (a non-forwarder), after receiving an HO-HMPDU containing an {NA, NS} pair with NA equal to the MSAP address of the IUT and NS equal to N_MultiRelay, and where there exists an entry in the local neighbour information base with N_{Nbour} equal to the source address of the HO-HMPDU and N_{Status} equal to N_Sym or N_MultiRelay:

-     transmits, one or more HO-HMPDUs, with at least one containing an {NA, NS} pair with NA equal to the Source Address of the received HO-HMPDU and NS equal to N_Sym or N_MultiRelay.

6.1.2.1.3   Forwarder and non-forwarder

MAC_FNF_1   subclause 6.5.4.1   **valid**   **mandatory**

Ensure that the IUT, periodically:

-     transmits an HO_HMPDU with the transmission condition where C_{hid} is set to the HIPERLAN identifier of the IUTs HIPERLAN and C_{next} is set to All_Neighbours.

MAC_FNF_2   subclause 6.5.4.1   **valid**   **mandatory**

Ensure that the IUT, periodically:

-     transmits an HO_HMPDU with a holding time of I_{HO} and the transmission condition where C_{Pri} is set to p_{HO} and C_{Dist} is set to 1.

     NOTE 1:   This TP is untestable.

MAC_FNF_3 subclauses 6.5.4.1 valid mandatory

Ensure that the IUT, having not received any HO-HMPDUs for a period exceeding t_{HO}:

- periodically transmits a single HO-HMPDU not containing any {NA, NS} pairs.

MAC_FNF_4 subclauses 6.5.4.1, 6.5.5.1 valid mandatory

Ensure that the IUT, after a period of t_{HO} following receipt of an HO-HMPDU containing an {NA, NS} pair with NA equal to the MSAP address of the IUT and NS equal to N_Sym:

- transmits, one or more HO-HMPDUs, with none containing an {NA, NS} pair with NA equal to the Source Address of the received HO-HMPDU.

MAC_FNF_5 subclauses 6.5.4.1, 6.5.5.1 valid mandatory

Ensure that the IUT, after receiving two HO-HMPDUs each containing an {NA, NS} pair with NA equal to the MSAP address of the IUT and NS equal to N_Sym:

- transmits, periodically HO-HMPDUs, with those HO-HMPDUs transmitted within a period of t_{HO} following the receipt of the second HO-HMPDU each containing an {NA, NS} pair with NA equal to the Source Address of the received HO-HMPDU and those transmitted subsequently not containing any such {NA, NS} pair.

    NOTE 2: The time between the two HO-HMPDUs should be in the range of 50 % to 90 % of t_{HO}. There should not be any other entries in the local neighbour information base to ensure that the IUT does not send more than one HO-HMPDU for each Neighbour information declaration. At least one TC-HMPDU received between the second HO-HMPDU and t_{HO} after the first HO-HMPDU, one between t_{HO} after the first and t_{HO} after the second HO-HMPDU and one after t_{HO} after the second HO-HMPDU should be taken into account to determine the verdict of the test case derived from this TP.

MAC_FNF_6 subclauses 6.5.4.1, 6.5.5.1 valid mandatory

Ensure that the IUT, after receiving two HO-HMPDUs each containing an {NA, NS} pair the first with NA equal to the MSAP address of the IUT and NS equal to N_Sym, and the second with no {NA, NS} pairs:

- transmits, periodically HO-HMPDUs, with those HO-HMPDUs transmitted within a period of t_{HO} following the receipt of the first HO-HMPDU each containing an {NA, NS} pair with NA equal to the Source Address of the received HO-HMPDU and those transmitted subsequently not containing any such {NA, NS} pair.

    NOTE 3: The time between the two HO-HMPDUs should be in the range of 50 % to 90 % of t_{HO}. There should not be any other entries in the local neighbour information base to ensure that the IUT does not send more than one HO-HMPDU for each Neighbour information declaration. At least one TC-HMPDU received between the second HO-HMPDU and t_{HO} after the first HO-HMPDU, one between t_{HO} after the first and t_{HO} after the second HO-HMPDU and one after t_{HO} after the second HO-HMPDU should be taken into account to determine the verdict of the test case derived from this TP.

6.1.2.2 TPs for multipoint relay determination

MAC_MRD_1 subclauses 6.5.3.1, 6.5.4.1, 6.5.5.1 valid mandatory

Ensure that the IUT, after having received an HO-HMPDU from source address **A** with RTI set to R_Forwarder containing two {NA, NS} pairs, one with NA equal to the MSAP address of the IUT and the other with NA equal to address **B**, both with NS equal to N_Sym:

- transmits, one or more HO-HMPDUs, with at least one containing an {NA, NS} pair with NA equal to **A** and NS equal to N_MultiRelay.

MAC_MRD_2   **subclauses 6.5.3.1, 6.5.4.1, 6.5.5.1**   **valid**   **mandatory**

Ensure that the IUT, after having received an HO-HMPDU from source address **A** with RTI set to R_Forwarder containing two {NA, NS} pairs, one with NA equal to the MSAP address of the IUT and the other with NA equal to address **B**, both with NS equal to N_Sym, and an HO-HMPDU from source address **C** with RTI set to R_Forwarder containing two {NA, NS} pairs, one with NA equal to the MSAP address of the IUT and the other with NA equal to address **D** both with NS equal to N_Sym:

-      transmits, one or more HO-HMPDUs, with at least one containing an {NA, NS} pair with NA equal to **A** and NS equal to N_MultiRelay and with at least one containing an {NA, NS} pair with NA equal to **C** and NS equal to N_MultiRelay.

MAC_MRD_3   **subclauses 6.5.3.1, 6.5.4.1, 6.5.5.1**   **valid**   **mandatory**

Ensure that the IUT, after having received an HO-HMPDU from source address **A** with RTI set to R_Forwarder containing two {NA, NS} pairs, one with NA equal to the MSAP address of the IUT and the other with NA equal to address **B**, both with NS equal to N_Sym and an HO-HMPDU from source address **C** with RTI set to R_Forwarder containing two {NA, NS} pairs, one with NA equal to the MSAP address of the IUT and the other with NA equal to address **B** both with NS equal to N_Sym:

-      transmits, one or more HO-HMPDUs, with at least one containing an {NA, NS} pair with NA equal to **A** or **C** and NS equal to N_MultiRelay.

MAC_MRD_4   **subclauses 6.5.3.1, 6.5.4.1, 6.5.5.1**   **valid**   **mandatory**

Ensure that the IUT, after having received an HO-HMPDU from source address **A** with RTI set to R_Forwarder containing two {NA, NS} pairs, one with NA equal to the MSAP address of the IUT and the other with NA equal to address **B**, both with NS equal to N_Sym, and an HO-HMPDU from source address **C** with RTI set to R_NonForwarder containing two {NA, NS} pairs, one with NA equal to the MSAP address of the IUT and the other with NA equal to address **D** both with NS equal to N_Sym:

-      transmits, one or more HO-HMPDUs, with at least one containing an {NA, NS} pair with NA equal to **A** and NS equal to N_MultiRelay and with at least one containing an {NA, NS} pair with NA equal to **C** and NS equal to N_Sym.

MAC_MRD_5   **subclauses 6.5.3.1, 6.5.4.1, 6.5.5.1**   **valid**   **mandatory**

Ensure that the IUT, after having received an HO-HMPDU from source address **A** with RTI set to R_Forwarder containing two {NA, NS} pairs, one with NA equal to the MSAP address of the IUT and the other with NA equal to address **B**, both with NS equal to N_Sym, and an HO-HMPDU from source address **C** with RTI set to R_NonForwarder containing an {NA, NS} pair, with NA equal to address **D** and with NS equal to N_Sym:

-      transmits, one or more HO-HMPDUs, with at least one containing an {NA, NS} pair with NA equal to **A** and NS equal to N_MultiRelay and with at least one containing an {NA, NS} pair with NA equal to **C** and NS equal to N_Asym.

MAC_MRD_6   **subclauses 6.5.3.1, 6.5.4.1, 6.5.5.1**   **valid**   **mandatory**

Ensure that the IUT, after having received an HO-HMPDU from source address **A** with RTI set to R_Forwarder containing an {NA, NS} pair with NA equal to the MSAP address of the IUT and NS equal to N_Sym:

-      transmits, one or more HO-HMPDUs, with at least one containing an {NA, NS} pair with NA equal to **A** and NS equal to N_MultiRelay.

MAC_MRD_7   **subclauses 6.5.3.1, 6.5.4.1, 6.5.5.1**   **valid**   **mandatory**

Ensure that the IUT, on selecting a multipoint relay set different from the previous one:

-      increments its multipoint set sequence number, and transmits an HO-HMPDU with the MSN field set to the new value of the multipoint relay set sequence number.

6.1.2.3 TPs for aliasing

MAC_ALI_1 subclauses 6.5.1.1 **valid** **mandatory**

Ensure that the IUT, in order to transmit a DT-HMPDU, where DA does not correspond to A_{ori} of an alias entry in the local alias information base:

- transmits the DT-HMPDU with ADA set to FF FF FF FF FF FF.

MAC_ALI_2 subclauses 6.5.1.1, 6.5.9.1 **valid** **mandatory**

Ensure that the IUT after having received a DT-HMPDU from source HCSAP address **A** with SA equal to **B** and ASA equal to **C**, in order to transmit a DT-HMPDU with DA equal to **B:**

- transmits the DT-HMPDU with ADA set to **C**.

MAC_ALI_3 subclauses 6.5.1.1, 6.5.9.1 **valid** **mandatory**

Ensure that the IUT after having received a DT-HMPDU with SA equal to **A** and ASA equal to **B** followed by a DT-HMPDU with SA equal to **A** and ASA equal to FF FF FF FF FF FF, in order to transmit a DT-HMPDU with DA equal to **A:**

- transmits the DT-HMPDU with ADA set to FF FF FF FF FF FF.

MAC_ALI_4 subclauses 6.5.1.1, 6.5.9.1 **valid** **mandatory**

Ensure that the IUT after having received a DT-HMPDU with SA equal to **A** and ASA equal to **B** followed by a DT-HMPDU with SA equal to **A** and ASA equal to **C**, in order to transmit a DT-HMPDU with DA equal to **A:**

- transmits the DT-HMPDU with ADA set to **C**.

MAC_ALI_5 subclauses 6.5.1.1, 6.5.9.1 **valid** **mandatory**

Ensure that the IUT after a time greater than t_A following receipt of a DT-HMPDU with SA equal to **A** and ASA equal to **B**, in order to transmit a DT-HMPDU with DA equal to **A:**

- transmits the DT-HMPDU with ADA set to FF FF FF FF FF FF.

6.1.2.4 TPs for forwarding

MAC_FOR_1 subclause 6.4.6 **valid** **PICS: R1**

Ensure that the IUT (a forwarder), on receiving a DT-HMPDU with the destination address an MSAP address not identifying the IUT:

- transmits a DT-HMPDU with all fields except RL and ADA as in the received PDU.

MAC_FOR_2 subclause 6.4.6 **valid** **PICS: R1**

Ensure that the IUT (a forwarder), after receiving an HO-HMPDU from HCSAP address **A,** containing an {NA, NS} pair with NA equal to the MSAP address of the IUT and NS equal to N_MultiRelay, on receiving from the HCSAP address **A** a DT-HMPDU with SA equal to **A** and DA equal to a group-MSAP address:

- transmits a DT-HMPDU with all fields except RL and ADA as in the received PDU.

MAC_FOR_3 subclause 6.4.6 **valid** **PICS: R1**

Ensure that the IUT (a forwarder), after receiving an HO-HMPDU from HCSAP address **A,** containing an {NA, NS} pair with NA equal to the MSAP address of the IUT and NS equal to N_MultiRelay, on receiving

from the HCSAP address **A** a DT-HMPDU with SA not equal to **A** and DA equal to a group-MSAP address:

- transmits a DT-HMPDU with all fields except RL and ADA as in the received PDU.

MAC_FOR_4   **subclause 6.4.6**   **valid**   **PICS: R1**

Ensure that the IUT (a forwarder), after receiving an HO-HMPDU from HCSAP address **A,** containing an {NA, NS} pair with NA equal to the MSAP address of the IUT and NS equal to N_MultiRelay, on receiving from the HCSAP address **B** a DT-HMPDU with SA equal to **A** and DA equal to a group-MSAP address:

- does not forward the DT-HMPDU.

MAC_FOR_5   **subclause 6.4.6**   **valid**   **PICS: R1**

Ensure that the IUT (a forwarder), after receiving an HO-HMPDU from HCSAP address **A,** containing an {NA, NS} pair with NA equal to the MSAP address of the IUT and NS equal to N_Sym, on receiving from the HCSAP address **A** a DT-HMPDU SA equal to **A** and DA equal to a group-MSAP address:

- does not forward the DT-HMPDU.

6.1.2.5   TPs for routing

MAC_ROU_1   **subclauses 6.5.1.1, 6.5.2.1**   **valid**   **mandatory**

Ensure that the IUT, after having received HO-HMPDUs and TC-HMPDUs as follows:

- HO-HMPDU from **A**, RTI = R_Forwarder, {NA, NS} = {IUT, N_Sym};
- TC-HMPDU from **A**; OA = **A**, {MSN,SMA} = {};

in order to send a DT-HMPDU where DA is equal to **A** and ADA is equal to FF FF FF FF FF FF:

- sends the DT-HMPDU to the HCSAP address of **A**.

MAC_ROU_2   **subclauses 6.5.1.1, 6.5.2.1**   **valid**   **mandatory**

Ensure that the IUT, after having received an HO-HMPDU as follows:

- HO-HMPDU: from **A**, RTI = R_NonForwarder, {NA, NS} = {IUT, N_Sym};

in order to send a DT-HMPDU where DA is equal to **A** and ADA is equal to FF FF FF FF FF FF:

- sends the DT-HMPDU to the HCSAP address of **A**.

MAC_ROU_3   **subclauses 6.5.1.1, 6.5.2.1**   **valid**   **mandatory**

Ensure that the IUT, after having received HO-HMPDUs and TC-HMPDUs as follows:

- HO-HMPDU from **A**, RTI = R_Forwarder, {NA, NS} = {IUT, N_Sym}, {**B**, N_Sym};
- HO-HMPDU from **B**, RTI = R_Forwarder {NA, NS} = {IUT, N_Sym}, {**A**, N_Sym};
- TC-HMPDU from **A**, OA = **A**,   {MSN,SMA} = {};
- TC-HMPDU from **B**, OA = **B**,   {MSN,SMA} = {};

in order to send a DT-HMPDU where DA is equal to **A** and ADA is equal to FF FF FF FF FF FF:

- sends the DT-HMPDU to the HCSAP address of **A**.

     NOTE 1:   This TP should only be selected for implementations with sufficient memory to store the necessary information base entries.

MAC_ROU_4   **subclauses 6.5.1.1, 6.5.2.1**   **valid**   **PICS: SC4.7**

Ensure that the IUT, after having received HO-HMPDUs and TC-HMPDUs as follows:

- HO-HMPDU from **A**, RTI = R_Forwarder, {NA, NS} = {IUT, N_Sym}, {**B**, N_Multi}, {**C**, N_Sym};
- HO-HMPDU from **B**, RTI = R_Forwarder, {NA, NS} = {IUT, N_Sym}, {**A**, N_Sym};
- TC-HMPDU from **A**, OA = **A**, {MSN,SMA} = {1,**B**}, {1,**C**};
- TC-HMPDU from **B**, OA = **B**, {MSN, SMA} = {1,A};
- TC-HMPDU from **A**, OA = **B**, {MSN, SMA} = {1,A};

in order to send a DT-HMPDU where DA is equal to **C** and ADA is equal to FF FF FF FF FF FF:

- sends the DT-HMPDU to the HCSAP address of **A**.

   NOTE 2:   This TP should only be selected for implementations with sufficient memory to store the necessary information base entries.

MAC_ROU_5   **subclauses 6.5.1.1, 6.5.2.1**   **valid**   **PICS: SC4.7**

Ensure that the IUT, after having received HO-HMPDUs and TC-HMPDUs as follows:

- HO-HMPDU from **A**, RTI = R_Forwarder, {NA, NS} = {IUT, N_Sym}, {**B**, N_Multi}, {**C**, N_Sym};
- HO-HMPDU from **B**, RTI = R_Forwarder {NA, NS} = {IUT, N_Sym}, {**A**, N_Sym}, {**D**, N_Multi};
- TC-HMPDU from **A**, OA = **A**,   {MSN,SMA} = {1,**B**}, {1,**C**};
- TC-HMPDU from **B**, OA = **B**,   {MSN, SMA} = {1,**A**}, {1,**D**};
- TC-HMPDU from **B**, OA = **D**,   {MSN, SMA} = {1,B};

in order to send a DT-HMPDU where DA is equal to **C** and ADA is equal to FF FF FF FF FF FF:

- sends the DT-HMPDU to the HCSAP address of **A**.

   NOTE 3:   This TP should only be selected for implementations with sufficient memory to store the necessary information base entries.

MAC_ROU_6   **subclauses 6.5.1.1, 6.5.2.1**   **valid**   **PICS: SC4.7**

Ensure that the IUT, after having received HO-HMPDUs and TC-HMPDUs as follows:

- HO-HMPDU from **A**,   RTI = R_Forwarder, {NA, NS} = {IUT, N_Sym}, {**B**, N_Sym}, {**C**, N_Multi};
- HO-HMPDU from **B**,   RTI = R_Forwarder {NA, NS} = {IUT, N_Sym}, {**A**, N_Sym}, {**D**, N_Multi};
- TC-HMPDU from **A**,   OA = **A**, {MSN,SMA} = {1,**C**};
- TC-HMPDU from **B**,   OA = **B**, {MSN, SMA} = {};
- TC-HMPDU from **A**,   OA = **C**, {MSN, SMA} = {1,A}, {1,D}, {1,E};
- TC-HMPDU from **B**,   OA = **D**, {MSN, SMA} = {1,B }, {1,C}, {1,F};
- TC-HMPDU from **A**,   OA = **E**, {MSN, SMA} = {};
- TC-HMPDU from **B**,   OA = **F**, {MSN, SMA} = {};

in order to send a DT-HMPDU where DA is equal to **E** and ADA is equal to FF FF FF FF FF FF:

- sends the DT-HMPDU to the HCSAP address of **A**.

   NOTE 4:   This TP should only be selected for implementations with sufficient memory to store the necessary information base entries.

MAC_ROU_7   **subclauses 6.5.1.1, 6.5.2.1**   **valid**   **PICS SC4.7**

Ensure that the IUT, after having received HO-HMPDUs and TC-HMPDUs as follows:

- HO-HMPDU from **A**, RTI = R_Forwarder, {NA, NS} = {IUT, N_Sym}, {**B**, N_Sym};
- HO-HMPDU from **B**, RTI = R_Forwarder {NA, NS} = {IUT, N_Sym}, {**A**, N_Sym};
- TC-HMPDU from **A**, OA = **A**, {MSN,SMA} = {};

- TC-HMPDU from **B**, OA = **B**, {MSN,SMA} = {};

in order to send a DT-HMPDU where DA is equal to **A** and ADA is equal to **B:**

- sends the DT-HMPDU to the HCSAP address of **B**.

   NOTE 5:   This TP should only be selected for implementations with sufficient memory to store the necessary information base entries.

MAC_ROU_8   **subclause 6.5.1.1**   **valid**   **PICS: R1**

Ensure that the IUT (a forwarder), after having received HO-HMPDUs and TC-HMPDUs as follows:

- HO-HMPDU from **A**, RTI = R_Forwarder, {NA, NS} = {IUT, N_Sym};
- TC-HMPDU from **A**, OA = **A**, {MSN,SMA} = {};

in order to send a DT-HMPDU where DA is equal to **B** and ADA is equal to FF FF FF FF FF FF:

- sends the DT-HMPDU to the HCSAP address All_Neighbours.

MAC_ROU_9   **subclause 6.5.1.1**   **valid**   **PICS: R2**

Ensure that the IUT (a non-forwarder), after having received HO-HMPDUs and TC-HMPDUs as follows:

- HO-HMPDU from **A**, RTI = R_Forwarder, {NA, NS} = {IUT, N_Sym};
- TC-HMPDU from **A**, OA = **A**, {MSN,SMA} = {};

in order to send a DT-HMPDU where DA is equal to **B** and ADA is equal to FF FF FF FF FF FF:

- sends the DT-HMPDU to the HCSAP address of **A**.

MAC_ROU_10   **subclause 6.5.1.1**   **valid**   **mandatory**

Ensure that the IUT, after having received HO-HMPDUs and TC-HMPDUs as follows:

- HO-HMPDU from **A**, RTI = R_NonForwarder, {NA, NS} = {IUT, N_Sym};

in order to send a DT-HMPDU where DA is equal to **B** and ADA is equal to FF FF FF FF FF FF:

- sends the DT-HMPDU to the HCSAP address All_Neighbours.

MAC_ROU_11   **subclause 6.5.1.1**   **valid**   **mandatory**

Ensure that the IUT, after having received HO-HMPDUs and TC-HMPDUs as follows:

- HO-HMPDU from **A**,   RTI = R_NonForwarder, {NA, NS} = {IUT, N_Sym};

in order to send a DT-HMPDU where DA is equal to **A** and ADA is equal to **B**:

- sends the DT-HMPDU to the HCSAP address All_Neighbours.

MAC_ROU_12   **subclause 6.5.1.1**   **valid**   **mandatory**

Ensure that the IUT, in order to send a DT-HMPDU where DA is a group MSAP address:

- sends the DT-HMPDU to the HCSAP address All_Neighbours.

6.1.3   TPs for power conservation function

6.1.3.1   TPs for individual-attention pattern declaration

Selection: IUT supports p-saver role, PICS: R 3.

MAC_IPD_1   subclause 6.3.1   **valid**

Ensure that the IUT, in order to declare its individual-attention pattern:

- generates a HC-UNITDATA request primitive containing an IP-HMPDU with:

    - HIPERLAN identifier parameter set to the HIPERLAN identifier of the local HM-entitys HIPERLAN;
    - destination address parameter set to All_Neighbours.

MAC_IPD_2   subclause 6.3.1   **valid**

Ensure that the IUT, having generated an IP-HMPDU, and not wishing to terminate its p-saver operation, in order to re-declare its individual-attention pattern:

- generates a HC-UNITDATA request primitive containing an IP-HMPDU with:

    - HIPERLAN identifier parameter set to the HIPERLAN identifier of the local HM-entitys HIPERLAN;
    - destination address parameter set to All_Neighbours.

MAC_IPD_3   subclause 6.3.1   **valid**

Ensure that the IUT, having generated an IP-HMPDU, on receipt of an LR-HMPDU during the declared individual-attention practice interval:

- generates a HC-UNITDATA request primitive containing an LC-HMPDU, with HIPERLAN name and HIPERLAN identifier of the local HM-entitys HIPERLAN, with:

    - HIPERLAN identifier parameter set to Any_HIPERLAN;
    - destination address parameter set to All_Neighbours.

6.1.3.2   TPs for individual-attention pattern recording

Selection: IUT supports p-supporter role, PICS: R 4.

MAC_IPR_1   subclauses 6.3.3, 6.6.2.1   **valid**

Ensure that the IUT, having received for the first time an IP-HMPDU for a particular HM-entity and there is sufficient memory space to record this new individual-attention pattern entry, to transmit a DT-HMPDU to that HM-entity before expiry of time t_{IP}:

- transmits a DT-HMPDU during the HM-entitys declared individual-attention practice interval.

MAC_IPR_2   subclauses 6.3.3, 6.6.2.1   **valid**

Ensure that the IUT, having received an IP-HMPDU for a particular HM-entity and no other IP-HMPDU before expiry of the individual-attention pattern holding time t_{IP}, to transmit a DT-HMPDU to that entity (after expiry of the individual-attention pattern holding time):

- transmits a DT-HMPDU independent of the HM-entitys previously declared individual-attention practice interval.

MAC_IPR_3   subclause 6.3.3   **valid**

Ensure that the IUT, having received, before expiry of the individual-attention pattern holding time, an updating IP-HMPDU for a particular HM-entity, containing changes since the previously received IP-HMPDU, to transmit a DT-HMPDU to that entity:

- transmits a DT-HMPDU during the HM-entitys updated declared individual-attention practice interval.

MAC_IPR_4   subclauses 6.3, 6.3.3   **valid**

Ensure that the IUT, on receipt of an IP-HMPDU for a particular HM-entity, containing a pattern offset value of zero:

-       accepts the IP-HMPDU.

MAC_IPR_5   subclauses 6.3, 6.3.3   **valid**

Ensure that the IUT, on receipt of an IP-HMPDU for a particular HM-entity, containing a pattern offset value of 10 000:

-       accepts the IP-HMPDU.

MAC_IPR_6   subclauses 6.3, 6.3.3   **valid**

Ensure that the IUT, on receipt of an IP-HMPDU for a particular HM-entity, containing a pattern period value of 500:

-       accepts the IP-HMPDU.

MAC_IPR_7   subclauses 6.3, 6.3.3   **valid**

Ensure that the IUT, on receipt of an IP-HMPDU for a particular HM-entity, containing a pattern period value of 10 000:

-       accepts the IP-HMPDU.

MAC_IPR_8   subclauses 6.3, 6.3.3   **valid**

Ensure that the IUT, on receipt of an IP-HMPDU for a particular HM-entity, containing a practice interval value of 500:

-       accepts the IP-HMPDU.

MAC_IPR_9   subclauses 6.3, 6.3.3   **valid**

Ensure that the IUT, on receipt of an IP-HMPDU for a particular HM-entity, containing a practice interval value of 10 000:

-       accepts the IP-HMPDU.

MAC_IPR_10   subclauses 6.3, 6.3.3   **invalid**

Ensure that the IUT, on receipt of an IP-HMPDU for a particular HM-entity, containing a pattern period value less than that of the pattern offset:

-       ignores the IP-HMPDU.

MAC_IPR_11   subclauses 6.3, 6.3.3   **invalid**

Ensure that the IUT, on receipt of an IP-HMPDU for a particular HM-entity, containing a pattern period value less than that of the practice interval:

-       ignores the IP-HMPDU.

MAC_IPR_12   subclauses 6.3, 6.3.3   **invalid**

Ensure that the IUT, on receipt of an IP-HMPDU for a particular HM-entity, containing a pattern period value < 500:

-       ignores the IP-HMPDU.

MAC_IPR_13   subclauses 6.3, 6.3.3   **invalid**

Ensure that the IUT, on receipt of an IP-HMPDU for a particular HM-entity, containing a practice interval value < 500:

-    ignores the IP-HMPDU.

MAC_IPR_14   subclauses 6.3, 6.3.3   **invalid**

Ensure that the IUT, on receipt of an IP-HMPDU for a particular HM-entity, containing a practice interval value > 10 000 (and where pattern period value = practice interval value):

-    ignores the IP-HMPDU.

MAC_IPR_15   subclauses 6.3, 6.3.3   **invalid**

Ensure that the IUT, on receipt of an IP-HMPDU for a particular HM-entity, containing a pattern offset value > 10 000 (and where pattern period value = pattern offset value):

-    ignores the IP-HMPDU.

MAC_IPR_16   subclauses 6.3, 6.3.3   **invalid**

Ensure that the IUT, on receipt of an IP-HMPDU for a particular HM-entity, containing a pattern period value > 10 000:

-    ignores the IP-HMPDU.

6.1.3.3   TPs for group-attendance pattern declaration

Selection: IUT supports p-supporter role, PICS: R 4.

MAC_GPD_1   subclause 6.3.2   **valid**

Ensure that the IUT, in order to declare its group-attendance pattern:

-    generates a HC-UNITDATA request primitive containing a GP-HMPDU with:

-    HIPERLAN identifier parameter set to the HIPERLAN identifier of the local HM-entitys HIPERLAN;
-    destination address parameter set to All_Neighbours.

MAC_GPD_2   subclause 6.3.2   **valid**

Ensure that the IUT, having transmitted a GP-HMPDU, and not wishing to terminate its p-supporter operation, in order to re-declare its group-attendance pattern:

-    generates a HC-UNITDATA request primitive containing a GP-HMPDU with:

-    HIPERLAN identifier parameter set to the HIPERLAN identifier of the local HM-entitys HIPERLAN;
-    destination address parameter set to All_Neighbours.

    NOTE: See also MAC_TRA_22.

6.1.3.4   TPs for group-attendance pattern recording

Selection: IUT supports p-saver role, PICS: R 3.

MAC_GPR_1   subclause 6.3.4   valid

Ensure that the IUT, having received for the first time a GP-HMPDU for a particular HM-entity and there is sufficient memory space to record this new group-attendance pattern entry, on receipt, from that HM-entity before expiry of time t_{GP}, of a HC-UNITDATA indication containing a DT-HMPDU with destination address parameter set to All_Neighbours, during the HM-entitys declared group-attendance practice interval:

-       issues a HM-UNITDATA indication primitive with the MSDU corresponding to the data contained in the UD field of the received DT-HMPDU.

6.1.4   TPs for user data transfer function

6.1.4.1   TPs for sanity check computation

MAC_SAN_1   subclause 6.4.1   valid   **PICS: SC 3.2 AND SC 3.5**

Ensure that the IUT, configured for operation in a HIPERLAN whose HID is in the range 2^{31} to $(2^{32} - 1)$ (i.e. this HIPERLAN may encrypt data), on receipt of an encrypted DT-HMPDU (for this IUT) with an incorrect sanity check:

-       does not issue a corresponding HM-UNITDATA indication.

MAC_SAN_2   subclauses 6.4.1, 6.7.3.12   valid   **PICS: SC 3.5**

Ensure that the IUT, configured for operation in a HIPERLAN whose HID is in the range 1 to $(2^{31} - 1)$ (i.e. this HIPERLAN never encrypts data), on receipt of an unencrypted DT-HMPDU (for this IUT) with a non-zero sanity check value:

-       does not issue a corresponding HM-UNITDATA indication containing a MSDU with corresponding user data.

6.1.4.2   TPs for user data encryption-decryption

MAC_EDN_1   subclause 6.4.2   valid   **PICS: SC 3.2 AND SC 3.4**

Ensure that the IUT, configured for operation in a HIPERLAN whose HID is in the range 2^{31} to $(2^{32} - 1)$ (i.e. this HIPERLAN may encrypt data), on receipt of a HM-UNITDATA request with a destination address parameter identifying user(s) other than the local HMS-user, which is accepted and selected for transfer and the KID is not No_Key:

-       generates an encrypted DT-HMPDU with data in UD correctly encrypted, according to the associated KID and initialization vector, and with correct SC value.

MAC_EDN_2   subclause 6.4.2   valid   **PICS: SC 3.2 AND SC 3.5**

Ensure that the IUT, configured for operation in a HIPERLAN whose HID is in the range 2^{31} to $(2^{32} - 1)$ (i.e. this HIPERLAN may encrypt data), on receipt of an encrypted DT-HMPDU (for this IUT):

-       issues a corresponding HM-UNITDATA indication containing a MSDU with correctly decrypted user data.

MAC_EDN_3   subclause 6.4.4   valid   **PICS: SC 3.2 AND SC 3.4**

Ensure that the IUT, configured for operation in a HIPERLAN whose HID is in the range 2^{31} to $(2^{32} - 1)$ (i.e. this HIPERLAN may encrypt data), on receipt of a HM-UNITDATA request with a destination address parameter identifying user(s) other than the local HMS-user, which is accepted and selected for transfer and the KID is No_Key:

-       generates an unencrypted DT-HMPDU.

MAC_EDN_4   **subclause 6.4.4**   **valid**   **PICS: SC 3.4**

Ensure that the IUT, configured for operation in a HIPERLAN whose HID is in the range 1 to (2^{31} - 1) (i.e. this HIPERLAN never encrypts data), on receipt of a HM-UNITDATA request with a destination address parameter identifying user(s) other than the local HMS-user, which is accepted and selected for transfer:

-        generates an unencrypted DT-HMPDU.

MAC_EDN_5   **subclause 6.4.5**   **valid**   **PICS: SC 3.5**

Ensure that the IUT, configured for operation in a HIPERLAN whose HID is in the range 1 to (2^{31} - 1) (i.e. this HIPERLAN never encrypts data), on receipt of an unencrypted DT-HMPDU (for this IUT):

-        issues a corresponding HM-UNITDATA indication containing a MSDU with corresponding user data.

MAC_EDN_6   **subclauses 6.1.2, 6.6.4.1, 6.7.3.9**   **invalid**   **PICS: SC 3.5**
Ensure that the IUT, configured for operation in a HIPERLAN whose HID is in the range 1 to (2^{31} - 1) (i.e. this HIPERLAN never encrypts data), on receipt of an encrypted DT-HMPDU (for this IUT):

-        does not issue a corresponding HM-UNITDATA indication.

6.1.4.3   TPs for HMQoS failure reporting

MAC_QOS_1   **subclause 6.4.3**   **valid**   **PICS: SC 3.4**

Ensure that the IUT, on receipt of a HM-UNITDATA request where, the request is accepted, the corresponding DT-HMPDU generated, and, starting from the receipt of the HM-UNITDATA request, the channel is busy for X ms where X ≥ MSDU lifetime:

-        issues a HM-QOSFAILURE indication primitive.

        NOTE: This TP is untestable. See also MAC_EXP_**1**.6.1.4.4   **TPs for user data acceptance**

MAC_UDA_1   **subclause 6.4.4**   **valid**   **PICS: SC 3.4**

Ensure that the IUT, on receipt of a HM-UNITDATA request where the destination address parameter is the MSAP address of the local HMS-user:

-        does not generate a corresponding DT-HMPDU.

MAC_UDA_2   **subclause 6.4.4**   **valid**   **PICS: SC 3.4**

Ensure that the IUT, on receipt of a HM-UNITDATA request where the destination address parameter is a group-MSAP-address which (inclusively) identifies the local MSAP-address, and this request is accepted:

-        generates a corresponding DT-HMPDU.

6.1.4.5   TPs for user data delivery

MAC_UDD_1   **subclause 6.4.5**   **valid**   **PICS: SC 3.5**

Ensure that the IUT, on receipt of a DT-HMPDU (for the IUT) (decrypted if necessary):

-        issues a HM-UNITDATA indication primitive with the MSDU corresponding to the data contained in the UD field of the received DT-HMPDU.

6.1.5 TPs for HMPDU transfer function

6.1.5.1 TPs for expired HMPDU removal

MAC_EXP_1   **subclause 6.6.1**   **valid**   **PICS: SC 3.4**

Ensure that the IUT, on receipt of a HM-UNITDATA request where, the request is accepted, the corresponding DT-HMPDU generated, and, starting from the receipt of the HM-UNITDATA request, the channel is busy for X ms where $X \geq$ MSDU lifetime:

- does not transmit a corresponding DT-HMPDU.

MAC_EXP_2   **subclause 6.6.1**   **valid**   **PICS: R 1**

Ensure that the IUT, on receipt of a DT-HMPDU where this DT-HMPDU meets the criteria for forwarding, and, starting from the receipt of the DT-HMPDU, the channel is busy for X ms where $X \geq$ value contained in RL of the received DT-HMPDU:

- does not transmit a corresponding DT-HMPDU.

MAC_EXP_3   **subclause 6.6.1**   **valid**   **PICS: SC 1.1**

Ensure that the IUT, on receipt of a HM-LOOKUP request where, the corresponding LR-HMPDU is generated, and, starting from the receipt of the HM-LOOKUP request, the channel is busy for X ms where $X \geq$ HMPDU lifetime l_{LR}:

- does not transmit a corresponding LR-HMPDU.

6.1.5.2 TPs for HMPDU selection

MAC_SEL_1 to 4 subclause 6.6.2   **valid**

Ensure that the IUT, at a point in time when the channel is busy, where there are two HMPDUs awaiting transmission, where the first has User priority = 0, number of hops to destination = 1, residual HMPDU lifetime = **a** ms + X ms and the second has user priority = 1, number of hops to destination = 1, residual HMPDU lifetime = **b** ms + X ms and a HC-SYNC or HC-FREE indication is received X ms after this point in time:

- selects for transfer the first HMPDU. See table 4 for values of **a** and **b**.

Table 4

TP	Residual HMPDU lifetime for User priority - 0 'a'	Residual HMPDU lifetime for User priority - 1 'b'
MAC_SEL_1	9	5
MAC_SEL_2	19	11
MAC_SEL_3	39	21
MAC_SEL_4	79	41

MAC_SEL_5 to 8 subclause 6.6.2   **valid**

Ensure that the IUT, at a point in time when the channel is busy, where there are two HMPDUs awaiting transmission, where the first has user priority = 1, number of hops to destination = 1, residual HMPDU lifetime = **a** ms + X ms and the second has user priority = 0, number of hops to destination = 1, residual HMPDU lifetime = **b** ms + X ms and a HC-SYNC or HC-FREE indication is received X ms after this point in time:

- selects for transfer the first HMPDU. See table 5 for values of **a** and **b**.

Table 5

TP	Residual HMPDU lifetime for User priority - 0 'a'	Residual HMPDU lifetime for User priority - 1 'b'
MAC_SEL_5	9	11
MAC_SEL_6	19	21
MAC_SEL_7	39	41
MAC_SEL_8	79	81

MAC_SEL_9   **subclause 6.6.2**   **valid**

Ensure that the IUT, at a point in time when the channel is busy, where there are two HMPDUs awaiting transmission, where the first has user priority = 1, number of hops to destination = 1, residual HMPDU lifetime = 100 ms + X ms and the second has user priority = 1, number of hops to destination = 1, residual HMPDU lifetime = 100 ms + X ms and a HC-SYNC or HC-FREE indication is received X ms after this point in time:

- selects for transfer any HMPDU.

6.1.5.3   **TPs for HMPDU transmission**

MAC_TRA_1   **subclause 6.6.3**   **valid**   **PICS: MC 6**

Ensure that the IUT, having received a HC-FREE indication primitive and not having received a subsequent HC-STATUS indication primitive, on receipt of two HM-UNITDATA requests and these requests are accepted:

- transmits immediately a DT-HMPDU corresponding to the first HM-UNITDATA request and a subsequent DT-HMPDU corresponding to the second HM-UNITDATA request at the next channel access cycle.

MAC_TRA_2   **subclause 6.6.3**   **valid**   **PICS: MC 6**

Ensure that the IUT, on transmission of two locally generated DT-HMPDUs in sequence with no intervening locally generated TC-HMPDUs:

- transmits the second DT-HMPDU containing a value of sequence number in PSN which is one more than that contained in the PSN of the first DT-HMPDU (unless the first was 65 536, in which case the second will be 0).

MAC_TRA_3   **subclause 6.6.3**   **valid**   **PICS: R 1**

Ensure that the IUT, on transmission of two locally generated TC-HMPDUs in sequence with no intervening locally generated DT-HMPDUs:

- transmits the second TC-HMPDU containing a value of sequence number in PSN which is one more than that contained in the PSN of the first TC-HMPDU.

MAC_TRA_4   **subclause 6.6.3**   **valid**   **PICS: MC 6**

Ensure that the IUT, on receipt of a HM-UNITDATA request, with MSDU lifetime = A ms, and this results in a DT-HMPDU selected for transmission:

- transmits a corresponding DT-HMPDU with value of RL = (A - < elapsed time since the receipt of the HM-UNITDATA request>) ±5 % or ±2 ms whichever is the greater.

MAC_TRA_5   subclause 6.6.3   valid   PICS: R 1

Ensure that the IUT, on receipt of a DT-HMPDU with RL = A ms, and it is determined that this DT-HMPDU is to be forwarded, and is successfully selected for transmission:

- transmits a corresponding DT-HMPDU with value of RL = (A - <elapsed time since the receipt of the DT-HMPDU>) $\pm$ 5 % or $\pm$ 2 ms whichever is the greater.

MAC_TRA_6   subclause 6.6.3   valid   PICS: R 3

Ensure that the IUT, on generation of an IP-HMPDU and this is selected for transmission Xms later:

- transmits a corresponding IP-HMPDU with value of PO = X $\pm$5 % or $\pm$2 ms whichever is the greater.

     NOTE 1:   This TP is untestable. As the IP-HMPDU is internally generated, it is impossible to know exactly when the HMPDU was generated.

MAC_TRA_7   subclause 6.6.3   valid   PICS: R 4

Ensure that the IUT, on generation of an GP-HMPDU and this is selected for transmission Xms later:

- transmits a corresponding GP-HMPDU with value of PO = X $\pm$ 5 % or $\pm$ 2 ms whichever is the greater.

     NOTE 2:   This TP is untestable. As the GP-HMPDU is internally generated, it is impossible to know exactly when the HMPDU was generated.

MAC_TRA_8   subclause 6.6.3   valid

Ensure that the IUT, on transmission of a DT-HMPDU:

- transmits a DT-HMPDU containing a value of LI equal to the number of octets in the DT-HMPDU.

MAC_TRA_9   subclause 6.6.3   valid   PICS: MC 6

Ensure that the IUT, on transmission of an LR-HMPDU:

- transmits an LR-HMPDU containing a value of LI equal to the number of octets in the LR-HMPDU.

MAC_TRA_10   subclause 6.6.3   valid

Ensure that the IUT, on transmission of an LC-HMPDU:

- transmits an LC-HMPDU containing a value of LI equal to the number of octets in the LC-HMPDU.

MAC_TRA_11   subclause 6.6.3   valid   PICS: R 3

Ensure that the IUT, on transmission of a IP-HMPDU:

- transmits an IP-HMPDU containing a value of LI equal to the number of octets in the IP-HMPDU.

MAC_TRA_12   subclause 6.6.3   valid   PICS: R 4

Ensure that the IUT, on transmission of a GP-HMPDU:

- transmits an GP-HMPDU containing a value of LI equal to the number of octets in the GP-HMPDU.

MAC_TRA_13   subclause 6.6.3   valid   PICS: R 1

Ensure that the IUT, on transmission of a TC-HMPDU:

- transmits an TC-HMPDU containing a value of LI equal to the number of octets in the TC-HMPDU.

MAC_TRA_14   **subclause 6.6.3**   **valid**

Ensure that the IUT, on transmission of a HO-HMPDU:

- transmits an HO-HMPDU containing a value of LI equal to the number of octets in the HO-HMPDU.

MAC_TRA_15   **subclause 6.6.3**   **valid**

Ensure that the IUT, at a point in time when the channel is busy, where there is one HMPDU awaiting transmission, with user priority = 0, number of hops to destination = 1, residual HMPDU lifetime = 5 ms + X ms and a HC-SYNC or HC-FREE indication is received X ms after this point in time:

- issues a HC-UNITDATA request primitive with the channel access priority parameter value 0.

MAC_TRA_16   **subclause 6.6.3**   **valid**

Ensure that the IUT, at a point in time when the channel is busy, where there is one HMPDU awaiting transmission, with user priority = 0, number of hops to destination = 1, residual HMPDU lifetime = 15 ms + X ms and a HC-SYNC or HC-FREE indication is received X ms after this point in time:

- issues a HC-UNITDATA request primitive with the channel access priority parameter value 1.

MAC_TRA_17   **subclause 6.6.3**   **valid**

Ensure that the IUT, at a point in time when the channel is busy, where there is one HMPDU awaiting transmission, with user priority = 0, number of hops to destination = 1, residual HMPDU lifetime = 30 ms + X ms and a HC-SYNC or HC-FREE indication is received X ms after this point in time:

- issues a HC-UNITDATA request primitive with the channel access priority parameter value 2.

MAC_TRA_18   **subclause 6.6.3**   **valid**

Ensure that the IUT, at a point in time when the channel is busy, where there is one HMPDU awaiting transmission, with user priority = 0, number of hops to destination = 1, residual HMPDU lifetime = 60 ms + X ms and a HC-SYNC or HC-FREE indication is received X ms after this point in time:

- issues a HC-UNITDATA request primitive with the channel access priority parameter value 3.

MAC_TRA_19   **subclause 6.6.3**   **valid**

Ensure that the IUT, at a point in time when the channel is busy, where there is one HMPDU awaiting transmission, with user priority = 0, number of hops to destination = 1, residual HMPDU lifetime = 100 ms + X ms and a HC-SYNC or HC-FREE indication is received X ms after this point in time:

- issues a HC-UNITDATA request primitive with the channel access priority parameter value 4.

MAC_TRA_20   **subclause 6.6.3**   **valid**

Ensure that the IUT, having transmitted a HMPDU, on receipt of a HC-STATUS indication primitive indicating "transfer unsuccessful", and the residual HMPDU lifetime does not expire prior to the next channel access cycle, and the HMPDU is selected for transfer:

- transmits the HMPDU.

MAC_TRA_21   **subclause 6.6.3**   **valid**

Ensure that the IUT, having transmitted a HMPDU, on receipt of a HC-STATUS indication primitive indicating "transfer successful":

- discards the HMPDU and does not re-transmit it.

MAC_TRA_22   subclauses 6.6.3, 6.6.2   valid   PICS: R 4

Ensure that the IUT, having transmitted a HMPDU (C_{Dest} = All_Neighbours) outside the group-attendance interval, and having received a HC-STATUS indication primitive indicating "transfer successful", and the residual HMPDU lifetime does not expire prior to the next channel access cycle during the IUTs group-attendance interval, and the HMPDU is selected for transfer:

-       re-transmits the HMPDU (C_{Dest} = All_Neighbours).

6.1.5.4   TPs for HMPDU reception

>   NOTE: See also subclause 6.1.6 (TPs for structure and encoding of HMPDUs) where TPs for
>   receipt of invalid codings are specified.

MAC_REC_1   subclause 6.6.4   valid

Ensure that the IUT, on receipt of a HC-UNITDATA indication primitive whose HIPERLAN identifier parameter is not Any_HIPERLAN and is not the HIPERLAN identifier of the local HM-entitys HIPERLAN:

-       discards the associated HMPDU and does not issue a HM-UNITDATA indication or forward the
        HMPDU.

MAC_REC_2   subclause 6.6.4   valid

Ensure that the IUT, on receipt of a HC-UNITDATA indication primitive whose destination address parameter does not identify the local HM-entity (exclusively or inclusively):

-       discards the associated HMPDU and does not issue a HM-UNITDATA indication or forward the
        HMPDU.

MAC_REC_3   subclause 6.6.4   valid

Ensure that the IUT, on receipt of a DT-HMPDU with values of SA and PSN corresponding respectively to D_{Src} and D_{Seq} of a duplicate detection entry in the local duplicate detection information base:

-       discards the DT-HMPDU and does not issue a HM-UNITDATA indication or forward the
        DT-HMPDU.

MAC_REC_4   subclause 6.6.4   valid   PICS: SC 4.7

Ensure that the IUT, on receipt of a TC-HMPDU with values of OA and PSN corresponding respectively to D_{Src} and D_{Seq} of a duplicate detection entry in the local duplicate detection information base:

-       discards and does not process the TC-HMPDU.

MAC_REC_5   subclauses 6.6.4, 6.6.5   valid

Ensure that the IUT, on receipt of a DT-HMPDU with values of SA and PSN NOT corresponding respectively to any entry of D_{Src} and D_{Seq} in the local duplicate detection information base:

-       updates the local duplicate detection information base with a new duplicate detection entry for a
        holding time of the value of RL with D_{Src} set to SA and D_{Seq} set to PSN, where RL, SA and PSN
        are obtained from the received DT-HMPDU and, processes the received DT-HMPDU.

MAC_REC_6   subclauses 6.6.4, 6.6.5   valid   PICS: SC 4.7

Ensure that the IUT, on receipt of a TC-HMPDU with values of OA and PSN NOT corresponding respectively to any entry of D_{Src} and D_{Seq} in the local duplicate detection information base:

-       updates the local duplicate detection information base with a new duplicate detection entry for a
        holding time of the value of RL with D_{Src} set to OA and D_{Seq} set to PSN, where RL, OA and PSN
        are obtained from the received TC-HMPDU and, processes the received TC-HMPDU.

MAC_REC_7   **subclause 6.6.4**   **valid**

Ensure that the IUT, on receipt of a DT-HMPDU with values of SA and PSN NOT corresponding respectively to any entry of D_{Src} and D_{Seq} in the local duplicate detection information base and there currently is not sufficient space to record a new duplicate detection entry:

- removes the duplicate detection entry with the shortest residual holding time and then updates the local duplicate detection information base for a holding time of the value of RL with D_{Src} set to SA and D_{Seq} set to PSN, where RL, SA and PSN are obtained from the received DT-HMPDU.

6.1.5.5   **TPs for expired duplicate detection entry removal**

MAC_REM_1   **subclause 6.6.5**   **valid**

Ensure that the IUT, on receipt of a DT-HMPDU with values of SA and PSN corresponding respectively to D_{Src} and D_{Seq} of an expired duplicate detection entry (previously contained in the local duplicate detection information base):

- updates the local duplicate detection information base for a holding time of the value of RL with D_{Src} set to SA and D_{Seq} set to PSN, where RL, SA and PSN are obtained from the received DT-HMPDU.

MAC_REM_2   **subclause 6.6.5**   **valid**   **PICS: SC 4.7**

Ensure that the IUT, on receipt of a TC-HMPDU with values of OA and PSN corresponding respectively to D_{Src} and D_{Seq} of an expired duplicate detection entry (previously contained in the local duplicate detection information base):

- updates the local duplicate detection information base for a holding time of the value of RL with D_{Src} set to OA and D_{Seq} set to PSN, where RL, OA and PSN are obtained from the received TC-HMPDU.

6.1.6   **TPs for structure and encoding of HMPDUs**

MAC_VAR_1   **subclauses 6.7.2.2, 6.6.4.1**   **invalid**

Ensure that the IUT, on receipt of a HMPDU, coded as a DT-HMPDU, but the TI contains value 0:

- discards the HMPDU.

MAC_VAR_2   **subclause 6.7.2.2**   **invalid**

Ensure that the IUT, on receipt of a HMPDU, coded as a DT-HMPDU, but the TI contains value > 7:

- discards the HMPDU.

Table 6: Minimum and maximum values for LI

HMPDU	Minimum LI value	Maximum LI value
DT-HMPDU	40	2 423
LR-HMPDU	3	3
LC-HMPDU	71	71
IP-HMPDU	9	9
GP-HMPDU	9	9
TC-HMPDU	13	2 421
HO-HMPDU	6	2 421

MAC_VAR_3   subclause 6.7.3   invalid

Ensure that the IUT, on receipt of a DT-HMPDU with an LI value < minimum (see table 6):

-        discards the DT-HMPDU.

MAC_VAR_4   subclause 6.7.4   invalid

Ensure that the IUT, on receipt of an LR-HMPDU with an LI value < minimum (see table 6):

-        discards the LR-HMPDU.

MAC_VAR_5   subclause 6.7.4   invalid

Ensure that the IUT, on receipt of an LC-HMPDU with an LI value < minimum (see table 6):

-        discards the LC-HMPDU.

MAC_VAR_6   subclause 6.7.5   invalid   **PICS: R 4**

Ensure that the IUT, on receipt of a IP-HMPDU with an LI value < minimum (see table 6):

-        discards the IP-HMPDU.

MAC_VAR_7   subclause 6.7.5   invalid   **PICS: R 3**

Ensure that the IUT, on receipt of a GP-HMPDU with an LI value < minimum (see table 6):

-        discards the GP-HMPDU.

        NOTE 1:   This TP is untestable.

MAC_VAR_8   subclause 6.7.6   invalid   **PICS: SC 4.7**

Ensure that the IUT, on receipt of a TC-HMPDU with an LI value < minimum (see table 6):

-        discards the TC-HMPDU.

MAC_VAR_9   subclause 6.7.7   invalid

Ensure that the IUT, on receipt of a HO-HMPDU with an LI value < minimum (see table 6):

-        discards the HO-HMPDU.

MAC_VAR_10   subclause 6.7.3   invalid

Ensure that the IUT, on receipt of a DT-HMPDU with an LI value > maximum (see table 6):

-        discards the DT-HMPDU.

MAC_VAR_11   subclause 6.7.4   invalid

Ensure that the IUT, on receipt of an LR-HMPDU with an LI value > maximum (see table 6):

-        discards the LR-HMPDU.

MAC_VAR_12   subclause 6.7.4   invalid

Ensure that the IUT, on receipt of an LC-HMPDU with an LI value > maximum (see table 6):

-        discards the LC-HMPDU.

MAC_VAR_13   **subclause 6.7.5**   **invalid**   **PICS: R 4**

Ensure that the IUT, on receipt of a IP-HMPDU with an LI value > maximum (see table 6):

-      discards the IP-HMPDU.

MAC_VAR_14   **subclause 6.7.5**   **invalid**   **PICS: R 3**

Ensure that the IUT, on receipt of a GP-HMPDU with an LI value > maximum (see table 6):

-      discards the GP-HMPDU.

      NOTE 2:   This TP is untestable.

MAC_VAR_15   **subclause 6.7.6**   **invalid**   **PICS: SC 4.7**

Ensure that the IUT, on receipt of a TC-HMPDU with an LI value > maximum (see table 6):

-      discards the TC-HMPDU.

MAC_VAR_16   **subclause 6.7.7**   **invalid**

Ensure that the IUT, on receipt of a HO-HMPDU with an LI value > maximum (see table 6):

-      discards the HO-HMPDU.

MAC_VAR_17   **subclause 6.7.3**   **invalid**

Ensure that the IUT, on receipt of a DT-HMPDU with an LI value $\geq$ minimum and $\leq$ maximum but which is not correct for this instance of the DT-HMPDU:

-      discards the DT-HMPDU.

MAC_VAR_18   **subclause 6.7.6**   **invalid**   **PICS: SC 4.7**

Ensure that the IUT, on receipt of a TC-HMPDU with an LI value $\geq$ minimum and $\leq$ maximum but which is not correct for this instance of the TC-HMPDU:

-      discards the TC-HMPDU.

MAC_VAR_19   **subclause 6.7.7**   **invalid**

Ensure that the IUT, on receipt of a HO-HMPDU with an LI value $\geq$ minimum and $\leq$ maximum but which is not correct for this instance of the HO-HMPDU:

-      discards the HO-HMPDU.

MAC_VAR_20   **subclause 6.7.3**   **invalid**

Ensure that the IUT, on receipt of a DT-HMPDU with RL value > 16 000:

-      discards the DT-HMPDU.

MAC_VAR_21   **subclause 6.7.6**   **invalid**   **PICS: SC 4.7**

Ensure that the IUT, on receipt of a TC-HMPDU with RL value > 16 000:

-      discards the TC-HMPDU.

MAC_VAR_22   **subclause 6.7.3**   **invalid**

Ensure that the IUT, on receipt of a DT-HMPDU with MSDU lifetime value > 16 000:

- discards the DT-HMPDU.

MAC_VAR_23   **subclause 6.7.3**   **invalid**

Ensure that the IUT, on receipt of a DT-HMPDU with no UD field and LI = 39:

- discards the DT-HMPDU.

MAC_VAR_24   **subclause 6.7.7**   **invalid**

Ensure that the IUT, on receipt of a HO-HMPDU with RTI value 0:

- discards the HO-HMPDU.

MAC_VAR_25   **subclause 6.7.7**   **invalid**

Ensure that the IUT, on receipt of a HO-HMPDU with RTI value 127:

- discards the HO-HMPDU.

MAC_VAR_26   **subclauses 6.7.4, 6.2.2**   **invalid**

Ensure that the IUT, on receipt of an LR-HMPDU, conveyed in a DT-HCPDU with destination HCSAP address not equal to All_Neighbours:

- discards the HMPDU/HCPDU.

MAC_VAR_27   **subclauses 6.7.4, 6.2.2**   **invalid**

Ensure that the IUT, on receipt of an LR-HMPDU, conveyed in a DT-HCPDU with HIPERLAN identifier equal to the HIPERLAN identifier of the local HM-entity (i.e. not equal to Any_HIPERLAN):

- discards the HMPDU/HCPDU.

MAC_VAR_28   **subclauses 6.7.3, 6.1.6**   **valid**   **PICS: SC 3.5**

Ensure that the IUT, on receipt of two DT-HMPDUs (for this IUT) where the second PSN value is one less than the first:

- accepts both DT-HMPDUs.

MAC_VAR_29   **subclauses 6.7.3, 6.1.6**   **valid**   **PICS: SC 3.5**

Ensure that the IUT, on receipt of two DT-HMPDUs (for this IUT) where the first PSN value = 1 and the second PSN value = 33 000:

- accepts both DT-HMPDUs.

MAC_VAR_30   **subclause 6.7.3**   **valid**   **PICS: SC 3.5**

Ensure that the IUT, on receipt of a DT-HMPDU (for the IUT) with identical SA and DA values:

- accepts the DT-HMPDU.

6.2   TPs for CAC protocol

     NOTE 1:   Where a TP uses the expression "for this IUT", this means that a PDU received by the IUT contains a destination address and HIPERLAN Identifier appropriate for the IUT.

NOTE 2: Where the IUT transmits a HCPDU on receipt of a HC-UNITDATA request it is assumed that, where the transfer is synchronized, the IUT contends successfully for channel access (this should be possible to control in test environment).

NOTE 3: All PDUs are valid (i.e. syntactically valid and with correct checksums) unless otherwise stated.

6.2.1 TPs for Elimination-Yield Non pre-emptive Priority Multiple Access (EY-NPMA)

In the TPs in this subclause (i.e. PRI, ELE, YIE, TRP, CHA and OPS groups) references to DT-HCPDUs sent by the IUT shall be taken to refer to CP-HCPDUs sent by the IUT if the IUT is an HEU and the test purpose is applicable to HEUs.

6.2.1.1 TPs for prioritization phase

CAC_PRI_1   **subclause 8.2.1**   **valid**   **PICS: MC7.2**

Ensure that the IUT, in order to transmit a DT-HCPDU at priority level 0 when it receives no signal after the end of the previous channel access cycle:

- transmits a channel access burst with the start of the burst immediately following the channel synchronization interval.

CAC_PRI_2   **subclause 8.2.1**   **valid**   **PICS: MC7.2 and R5**

Ensure that the IUT, in order to transmit a DT-HCPDU at priority level 1 when it receives no signal after the end of the previous channel access cycle:

- transmits a channel access burst with the start of the burst with one prioritization slot following the channel synchronization interval.

CAC_PRI_3   **subclause 8.2.1**   **valid**   **PICS: MC7.2 and R5**

Ensure that the IUT, in order to transmit a DT-HCPDU at priority level 2 when it receives no signal after the end of the previous channel access cycle:

- transmits a channel access burst with the start of the burst with two prioritization slots following the channel synchronization interval.

CAC_PRI_4   **subclause 8.2.1**   **valid**   **PICS: MC7.2 and R5**

Ensure that the IUT, in order to transmit a DT-HCPDU at priority level 3 when it receives no signal after the end of the previous channel access cycle:

- transmits a channel access burst with the start of the burst with three prioritization slots following the channel synchronization interval.

CAC_PRI_5   **subclause 8.2.1**   **valid**   **PICS: MC7.2 and R5**

Ensure that the IUT, in order to transmit a DT-HCPDU at priority level 4 when it receives no signal after the end of the previous channel access cycle:

- transmits a channel access burst with the start of the burst with four prioritization slots following the channel synchronization interval.

CAC_PRI_6 to15   subclauses 8.2.1, 8.2.5.1   valid   PICS: MC7.2 and R5

Ensure that the IUT, when requested by the MAC to transmit a DT-HCPDU at priority level **a** and having received a burst of length i_{PA} (168) high rate bit lengths commencing ics+ **b** i_{PS} high rate bit lengths after the end of the previous channel access cycle:

- does not make any further transmission in this channel access cycle. See table 7 for values of **a** and **b**.

Table 7

	Priority of HCPDU to be sent by IUT	Priority of competing node (tester)	Time at which burst sent
TP	**a**	**b**	ics+ **b** i_{PS}
CAC_PRI_6	1	0	256
CAC_PRI_7	2	0	256
CAC_PRI_8	2	1	424
CAC_PRI_9	3	0	256
CAC_PRI_10	3	1	424
CAC_PRI_11	3	2	592
CAC_PRI_12	4	0	256
CAC_PRI_13	4	1	424
CAC_PRI_14	4	2	592
CAC_PRI_15	4	3	760

CAC_PRI_16   subclause 8.2.1   valid   PICS: MC7.2 CAC_PRI_17 to 20
**   subclause 8.2.1   valid   PICS: MC7.2 and R5**

Ensure that the IUT, when requested by the MAC to transmit a DT-HCPDU at priority level **a** and having received a burst of length i_{PA} (168)high rate bit lengths commencing ics+ **a** i_{PS} high rate bit lengths after the end of the previous channel access cycle and no subsequent signal:

- continues transmitting the DT-HCPDU. See table 8 for values of **a** and **b**.

Table 8

	Priority	Time at which burst sent
TP	**a**	ics+ **a** i_{PS}
CAC_PRI_16	0	256
CAC_PRI_17	1	424
CAC_PRI_18	2	592
CAC_PRI_19	3	760
CAC_PRI_20	4	928

6.2.1.2   TPs for elimination phase

CAC_ELE_1   subclause 8.2.2   valid   PICS: MC7.2

Ensure that the IUT, when transmitting a sequence of 100 000 DT-HCPDUs in the synchronized channel condition:

- used a distribution of number of elimination slots as in table 9.

Table 9: Distribution of elimination slots

Number of slots	Number of occurrences	
(elimination)	Minimum	Maximum
<0 (i.e. no burst)	0	0
0	46 860	53 140
1	23 210	26 810
2	11 460	13 560
3	5 630	6 880
4	2 750	3 510
5	1 330	1 810
6	630	940
7	290	500
8	130	270
9	50	150
10	10	80
11	0	50
12	0	50
> 12	0	0

CAC_ELE_2 to 14 subclause 8.2.2   **valid**   **PICS: MC7.2**

Ensure that the IUT, when attempting to transmit a DT-HCPDU in the synchronized channel condition using **n** elimination slots and on receiving a burst, starting during the IUTs priority assertion interval and finishing $i_{CS} + p.i_{PS} + i_{PA} + n.i_{ES}$ high bit rate periods from the end of the previous channel access cycle, where **p** is the priority being used by the IUT:

- continues to transmit the DT-HMPDU. See table 10 for the value of **n**.

CAC_ELE_15 to 26 subclause 8.2.2   **valid**   **PICS: MC7.2CAC_ELE_27**
                  subclause 8.2.2   **invalid**   **PICS: MC7.2**

Ensure that the IUT, when attempting to transmit a DT-HCPDU in the synchronized channel condition using **n** elimination slots and on receiving a burst, starting during the IUTs priority assertion interval and finishing $i_{CS} + p.i_{PS} + i_{PA} + (n + 1).i_{ES}$ high bit rate periods from the end of the previous channel access cycle, where **p** is the priority being used by the IUT:

- does not make any further transmission in this channel access cycle. See table 10 for the value of **n**.

Table 10

TP (IUT not eliminated)	TP (IUT eliminated)	Number of elimination slots used by IUT n
CAC_ELE_2	CAC_ELE_15	0
CAC_ELE_3	CAC_ELE_16	1
CAC_ELE_4	CAC_ELE_17	2
CAC_ELE_5	CAC_ELE_18	3
CAC_ELE_6	CAC_ELE_19	4
CAC_ELE_7	CAC_ELE_20	5
CAC_ELE_8	CAC_ELE_21	6
CAC_ELE_9	CAC_ELE_22	7
CAC_ELE_10	CAC_ELE_23	8
CAC_ELE_11	CAC_ELE_24	9
CAC_ELE_12	CAC_ELE_25	10
CAC_ELE_13	CAC_ELE_26	11
CAC_ELE_14	CAC_ELE_27	12

6.2.1.3 TPs for yield phase

CAC_YIE_1   subclause 8.2.3   valid   **PICS: MC7.2**

Ensure that the IUT, when transmitting a sequence of 100 000 DT-HCPDUs in the synchronized channel condition:

- uses a distribution of number of yield slots as in table 11.

Table 11: Distribution of yield slots

Number of slots (Yield)	Number of occurrences	
	Minimum	Maximum
0	9 120	10 890
1	9 120	10 890
2	9 120	10 890
3	9 120	10 890
4	9 120	10 890
5	9 120	10 890
6	9 120	10 890
7	9 120	10 890
8	9 120	10 890
9	9 120	10 890
> 9	0	0

CAC_YIE_2 to 10   subclause 8.2.3   valid   **PICS: MC7.2**

Ensure that the IUT, when attempting to transmit a sequence of 100 000 DT-HCPDUs, in the synchronized channel condition and on receiving an LBR-HBR HCPDU with the start of the LBR part $i_{CS} + p.i_{PS} + i_{PA} + e.i_{ES} + i_{ESV} + n.i_{YS}$ high bit rate periods from end of the previous channel access cycle, where **p** is the priority being used by the IUT and **e** is the number of elimination slots used by the IUT:

- continues to transmit the HCPDU between **a** and **b** times and does not commence transmitting an HCPDU after the tester has transmitted an HCPDU in the same channel access cycle. See table 12 for the values of **a** and **b**.

Table 12

TP	Number of yield slots (tester)	Number of times HCPDU transmitted by IUT	
		Minimum	Maximum
	n	a	b
CAC_YIE_2	0	9 120	10 890
CAC_YIE_3	1	18 240	21 780
CAC_YIE_4	2	27 360	32 670
CAC_YIE_5	3	36 480	43 560
CAC_YIE_6	4	45 600	56 490
CAC_YIE_7	5	54 720	67 380
CAC_YIE_8	6	63 840	78 270
CAC_YIE_9	7	72 960	89 160
CAC_YIE_10	8	82 080	100 000

CAC_YIE_11　　　**subclause 8.2.3**　　　　**valid**　　　**PICS: MC7.2**

Ensure that the IUT, when attempting to transmit a sequence of 100 000 DT-HCPDUs, in the synchronized channel condition and on receiving an LBR-HBR HCPDU with the start of the LBR part $i_{CS} + \mathbf{p}.i_{PS} + i_{PA} + \mathbf{e}.i_{ES} + i_{ESV} + \mathbf{9}.i_{YS}$ high bit rate periods from end of the previous channel access cycle, where **p** is the priority being used by the IUT and **e** is the number of elimination slots used by the IUT:

-　　continues to transmit the HCPDU 100 000 times.

CAC_YIE_12　　　**subclause 8.2.3**　　　　**invalid**　　　**PICS: MC7.2**

Ensure that the IUT, when attempting to transmit a sequence of 100 000 DT-HCPDUs, in the synchronized channel condition and on receiving an LBR-HBR HCPDU with the start of the LBR part $i_{CS} + \mathbf{p}.i_{PS} + i_{PA} + \mathbf{e}.i_{ES} + i_{ESV} + \mathbf{10}.i_{YS}$ high bit rate periods from end of the previous channel access cycle, where **p** is the priority being used by the IUT and **e** is the number of elimination slots used by the IUT:

-　　continues to transmit the HCPDU 100 000 times.

CAC_YIE_13　　　**subclause 8.2.3**　　　　**invalid**　　　**PICS: MC7.2**

Ensure that the IUT, when attempting to transmit a sequence of 100 DT-HCPDUs, in the synchronized channel condition and on receiving a burst of length i_{YS} starting $i_{CS} + \mathbf{p}.i_{PS} + i_{PA} + \mathbf{e}.i_{ES} + i_{ESV} + \mathbf{5}.i_{YS}$ high bit rate periods from the end of the previous channel access cycle, where **p** is the priority being used by the IUT and **e** is the number of elimination slots used by the IUT:

-　　does not transmit any HCPDUs commencing after the burst.

　　NOTE:　　If the IUT commences transmission of the DT-HCPDU before the start of the burst then it is not necessary for the burst to be transmitted by the tester.

6.2.1.4　　　**TPs for transmission phase**

CAC_TRP_1　　　**subclause 8.2.4**　　　**valid**　　　**PICS: R5**

Ensure that the IUT, on receiving a unicast DT-HCPDU with the HIPERLAN identifier field, the destination HCSAP-address field and the hashed destination HCSAP-address field encoded to match the configured address of the IUT:

-　　transmits an AK-HCPDU with its first bit 512 ±5 high rate bit-periods after the centre of the last bit of the DT-HCPDU.

6.2.1.5 **TPs for conditions for commencing channel access**

6.2.1.5.1 **TPs for channel access in channel free condition**

CAC_CHA_1   **subclause 8.2.5.1**   **valid**   **PICS R5**

Ensure that the IUT, following receipt of a multicast DT-HCPDU when the channel subsequently remains idle:

-     enters the channel free condition and indicates this by issuing a HC-FREE primitive.

CAC_CHA_2   **subclause 8.2.5.1**   **valid**   **PICS R5**

Ensure that the IUT, following transmission of a multicast DT-HCPDU when the channel subsequently remains idle:

-     enters the channel free condition and indicates this by issuing a HC-FREE primitive.

CAC_CHA_3   **subclause 8.2.5.1**   **valid**   **PICS R5**

Ensure that the IUT, following receipt of an AK-HCPDU when the channel subsequently remains idle:

-     enters the channel free condition and indicates this by issuing a HC-FREE primitive.

CAC_CHA_4   **subclause 8.2.5.1**   **valid**   **PICS R5**

Ensure that the IUT, following transmission of an AK-HCPDU when the channel subsequently remains idle:

-     enters the channel free condition and indicates this by issuing a HC-FREE primitive.

CAC_CHA_5   **subclause 8.2.5.1**   **valid**   **PICS R5**

Ensure that the IUT, following receipt of a unicast DT-HCPDU (not addressed to the IUT) when the channel subsequently remains idle:

-     enters the channel free condition and indicates this by issuing a HC-FREE primitive.

CAC_CHA_6   **subclause 8.2.5.1**   **valid**   **PICS: R5**

Ensure that the IUT, following transmission of an unacknowledged unicast DT-HCPDU when the channel subsequently remains idle:

-     enters the channel free condition and indicates this by issuing a HC-FREE primitive.

CAC_CHA_7   **subclause 8.2.5.1**   **valid**   **mandatory**

Ensure that the IUT, when requested to transmit a DT-HCPDU in the channel free condition:

-     immediately transmits the LBR part of the DT-HCPDU.

CAC_CHA_8   **subclause 8.2.5.1**   **valid**   **mandatory**

Ensure that the IUT, when transmitting a sequence of 100 000 DT-HCPDUs in the channel free condition:

-     uses a distribution of number of free extension slots as in table 13.

Table 13: Distribution of number of free extension slots

Number of slots	Number of occurrences	
	Minimum	Maximum
< 0	0	0
0	23 210	26 810
1	23 210	26 810
2	23 210	26 810
3	23 210	26 810
> 3	0	0

6.2.1.5.2   TPs for channel access in the synchronized channel condition

CAC_CHA_9   subclause 8.2.5.2   valid   PICS: MC7.2

Ensure that the IUT, on receipt of a mutlicast DT-HCPDU:

-          determines the end of the channel access cycle to be at the end of the LBR-HBR burst of the DT-HCPDU $\pm d_{EC}$.

    NOTE 1:   This may be determined by causing the IUT to send a DT-HMPDU in the next channel access cycle and determining that the start of the LBR-HBR burst of that DT-HCPDU is i_{CS} + **p**.i_{PS} + i_{PA} + **e**.i_{ES} + i_{ESV} + **y**.i_{YS} ± d_{EC} high rate bit periods following the end of the previous DT-HMPDU, where **p** is the priority and **e** the number of elimination slots used by the IUT (as determined from the position and duration of the channel access burst) and **y an** integer from 0 to 9 (the number of yield slots being used by the IUT).

CAC_CHA_10   subclause 8.2.5.2   valid   PICS: MC7.2

Ensure that the IUT, on transmission of a mutlicast DT-HCPDU:

-          determines the end of the channel access cycle to be at the end of the LBR-HBR burst of the DT-HCPDU $\pm d_{EC}$.

    NOTE 2:   This may be determined by causing the IUT to send a DT-HMPDU in the next channel access cycle and determining that the start of the LBR-HBR burst of that DT-HCPDU is i_{CS} + **p**.i_{PS} + i_{PA} + **e**.i_{ES} + i_{ESV} + **y**.i_{YS} ± d_{EC} high rate bit periods following the end of the previous DT-HMPDU, where **p** is the priority and **e** the number of elimination slots used by the IUT (as determined from the position and duration of the channel access burst) and **y an**y integer from 0 to 9 (the number of yield slots being used by the IUT).

CAC_CHA_11   subclause 8.2.5.2   valid   PICS: MC7.2

Ensure that the IUT, on receipt of an AK-HCPDU following receipt of a unicast DT-HCPDU not addressed to the IUT:

-          determines the end of the channel access cycle to be at the end of AK-HCPDU $\pm d_{EC}$.

    NOTE 3:   This may be determined by causing the IUT to send a DT-HCPDU in the next channel access cycle and determining that the start of the LBR-HBR burst of that DT-HCPDU is i_{CS} + **p**.i_{PS} + i_{PA} + **e**.i_{ES} + i_{ESV} + **y**.i_{YS} ± d_{EC} high rate bit periods following the end of the AK-HCPDU, where **p** is the priority and **e** the number of elimination slots used by the IUT (as determined from the position and duration of the channel access burst) and **y an** integer from 0 to 9 (the number of yield slots being used by the IUT).

CAC_CHA_12   subclause 8.2.5.2   valid   PICS: MC7.2

Ensure that the IUT, on receipt of an AK-HCPDU following transmission of a unicast DT-HCPDU by the IUT:

-          determines the end of the channel access cycle to be at the end of AK-HCPDU $\pm d_{EC}$.

NOTE 4: This may be determined by causing the IUT to send a DT-HCPDU in the next channel access cycle and determining that the start of the LBR-HBR burst of that DT-HCPDU is $i_{CS} + \mathbf{p}.i_{PS} + i_{PA} + \mathbf{e}.i_{ES} + i_{ESV} + \mathbf{y}.i_{YS} \pm d_{EC}$ high rate bit periods following the end the AK-HCPDU, where **p** is the priority and **e** the number of elimination slots used by the IUT (as determined from the position and duration of the channel access burst) and **y an** integer from 0 to 9 (the number of yield slots being used by the IUT).

CAC_CHA_13 **subclause 8.2.5.2** **valid** **PICS: MC7.2**

Ensure that the IUT, on transmission of an AK-HCPDU following receipt of a unicast DT-HCPDU addressed to the IUT:

- determines the end of the channel access cycle to be at the end of AK-HCPDU $\pm d_{EC}$.

NOTE 5: This may be determined by causing the IUT to send a DT-HCPDU in the next channel access cycle and determining that the start of the LBR-HBR burst of that DT-HCPDU is $i_{CS} + \mathbf{p}.i_{PS} + i_{PA} + \mathbf{e}.i_{ES} + i_{ESV} + \mathbf{y}.i_{YS} \pm d_{EC}$ high rate bit periods following the end the AK-HCPDU, where **p** is the priority and **e** the number of elimination slots used by the IUT (as determined from the position and duration of the channel access burst) and **y an** integer from 0 to 9 (the number of yield slots being used by the IUT).

CAC_CHA_14 **subclause 8.2.5.2** **valid** **PICS: MC7.2**

Ensure that the IUT, on receipt of a unicast DT-HCPDU not addressed to the IUT without receiving any AK-HCPDU:

- determines the end of the channel access cycle to be at $i_{AK} + 368 \pm d_{AK} \pm d_{EC}$ high rate bit periods after the end of the LBR-HBR burst of the DT-HCPDU.

NOTE 6: This may be determined by causing the IUT to send a DT-HCPDU in the next channel access cycle and determining that the start of the LBR-HBR burst of that DT-HCPDU is $i_{AK} + 368 + i_{CS} + \mathbf{p}.i_{PS} + i_{PA} + \mathbf{e}.i_{ES} + i_{ESV} + \mathbf{y}.i_{YS} \pm d_{AK} \pm d_{EC}$ high rate bit periods following the end the previous DT-HCPDU, where **p** is the priority and **e** the number of elimination slots used by the IUT (as determined from the position and duration of the channel access burst) and **y an** integer from 0 to 9 (the number of yield slots being used by the IUT).

CAC_CHA_15 **subclause 8.2.5.2** **valid** **PICS: MC7.2**

Ensure that the IUT, on transmission of a unicast DT-HCPDU by the IUT without receiving any AK-HCPDU:

- determines the end of the channel access cycle to be at $i_{AK} + 368 \pm d_{AK} \pm d_{EC}$ high rate bit periods after the end of the LBR-HBR burst of the DT-HCPDU.

NOTE 7: This may be determined by causing the IUT to send a DT-HCPDU in the next channel access cycle and determining that the start of the LBR-HBR burst of that DT-HCPDU is $i_{AK} + 368 + i_{CS} + \mathbf{p}.i_{PS} + i_{PA} + \mathbf{e}.i_{ES} + i_{ESV} + \mathbf{y}.i_{YS} \pm d_{AK} \pm d_{EC}$ high rate bit periods following the end the previous DT-HCPDU, where **p** is the priority and **e** the number of elimination slots used by the IUT (as determined from the position and duration of the channel access burst) and **y an** integer from 0 to 9 (the number of yield slots being used by the IUT).

CAC_CHA_16 **subclause 8.2.5.2** **valid** **PICS: MC7.2**

Ensure that the IUT, on receipt of an AK-HCPDU without receipt of the preceding unicast DT-HCPDU:

- determines the end of the channel access cycle to be at the end of AK-HCPDU $\pm d_{EC}$.

NOTE 8: This may be determined by causing the IUT to send a DT-HCPDU in the next channel access cycle and determining that the start of the LBR-HBR burst of that DT-HCPDU is $i_{CS} + p.i_{PS} + i_{PA} + e.i_{ES} + i_{ESV} + y.i_{YS} \pm d_{EC}$ high rate bit periods following the end the AK-HCPDU, where **p** is the priority and **e** the number of elimination slots used by the IUT (as determined from the position and duration of the channel access burst) and **y an** integer from 0 to 9 (the number of yield slots being used by the IUT).

6.2.1.5.3 TPs for channel access in the hidden elimination condition

CAC_CHA_17 **subclause 8.2.5.3** **valid** **PICS: MC7.2**

Ensure that the IUT, on attempting to transmit a DT-HMPDU in the synchronized channel condition and losing the right of transmission in the contention phase without detecting data transmission:

- enters the hidden elimination condition and suspends the next channel access attempt.

NOTE 1: This can be verified by causing the IUT to have an HMPDU to be transmitted and ensuring that the IUT does not make any further transmission within 500 µs from the start of the channel access cycle when hidden elimination occurred.

CAC_CHA_18 **subclause 8.2.5.3** **valid** **PICS: MC7.2 AND R5**

Ensure that the IUT, after having attempted to transmit a DT-HCPDU in the synchronized channel condition and lost the right of transmission in the contention phase without detecting data transmission, and having transmitted a further unicast DT-HCPDU without receipt of an AK-HCPDU:

- remains in the hidden elimination condition and suspends the next channel access attempts.

NOTE 2: This can be verified by causing the IUT to have an HMPDU to be transmitted and ensuring that the IUT does not make any further transmission within 500 µs from the end of the transmitted DT-HMPDU.

CAC_CHA_19 **subclause 8.2.5.3** **valid** **PICS: MC7.2 AND R5**

Ensure that the IUT, after having attempted to transmit a DT-HCPDU in the synchronized channel condition and lost the right of transmission in the contention phase without detecting data transmission, and having transmitted a further unicast DT-HCPDU and received the corresponding AK-HCPDU:

- does not suspend the next channel access attempt.

NOTE 3: This can be verified by causing the IUT to have an HMPDU to be transmitted and ensuring that the IUT attempts to transmit a DT-HCPDU within 500 µs after the end of the transmitted DT-HCPDU.

CAC_CHA_20 **subclause 8.2.5.3** **valid** **PICS: MC7.2 AND R5**

Ensure that the IUT, after having attempted to transmit a DT-HCPDU in the synchronized channel condition and lost the right of transmission in the contention phase without detecting data transmission, and having transmitted a further multicast DT-HCPDU:

- does not suspend the next channel access attempt.

NOTE 4: This can be verified by causing the IUT to have an HMPDU to be transmitted and ensuring that the IUT attempts to transmit a DT-HCPDU within 500 µs after the end of the transmitted DT-HCPDU.

CAC_CHA_21   subclause 8.2.5.3   valid   PICS: MC7.2 AND R5

Ensure that the IUT, after having attempted to transmit a DT-HCPDU in the synchronized channel condition and lost the right of transmission in the contention phase without detecting data transmission, and having transmitted a further unicastDT-HCPDU more than 500ms after the , slot in which the right of transmission was lost and not having received the corresponding AK-HCPDU:

-       does not suspend the next channel access attempt.

     NOTE 5:   This can be verified by causing the IUT to have an HMPDU to be transmitted and ensuring that the IUT attempts to transmit a DT-HCPDU within 500 μs after the end of the transmitted DT-HCPDU.

CAC_CHA_22   subclause 8.2.5.3   valid   PICS: MC7.2

Ensure that the IUT when transmitting a sequence of 100 000 DT-HCPDUs in the synchronized channel condition and on each transmission attempt losing the contention with hidden elimination occurring:

-       uses a distribution of number of channel access suspension slots as in table 14.

Table 14

Number of slots	Number of occurrences	
	Minimum	Maximum
1	18 500	21 520
2	18 500	21 520
3	18 500	21 520
4	18 500	21 520
5	18 500	21 520
< 1 or > 5	0	0

6.2.1.6   TPs for EY-NPMA operating parameter settings

CAC_OPS_1   subclause 8.2.6   valid   PICS: MC7.2

Ensure that the IUT:

-       uses a value of i_{CS} of 256 high rate bit-periods.

     NOTE 1:   This is untestable because the exact value of this parameter is not observable due to the behaviour of the PHY.

CAC_OPS_2   subclause 8.2.6   valid   PICS: MC7.2

Ensure that the IUT:

-       uses a value of i_{PS} of 168 high rate bit-periods.

     NOTE 2:   This is untestable because the exact value of this parameter is not observable due to the behaviour of the PHY.

CAC_OPS_3   subclause 8.2.6   valid   PICS: MC7.2

Ensure that the IUT:

-       uses a value of i_{PA} of 168 high rate bit-periods.

     NOTE 3:   This is untestable because the exact value of this parameter is not observable due to the behaviour of the PHY.

CAC_OPS_4   **subclause 8.2.6**   **valid**   **PICS: MC7.2**

Ensure that the IUT:

-       uses a value of i_{ES} of 212 high rate bit-periods.

>   NOTE 4:   This is untestable because the exact value of this parameter is not observable due to
>   the behaviour of the PHY.

CAC_OPS_5   **subclause 8.2.6**   **valid**   **PICS: MC7.2**

Ensure that the IUT:

-       uses a value of i_{ESV} of 256 high rate bit-periods.

>   NOTE 5:   This is untestable because the exact value of this parameter is not observable due to
>   the behaviour of the PHY.

CAC_OPS_6   **subclause 8.2.6**   **valid**   **PICS: MC7.2**

Ensure that the IUT:

-       uses a value of i_{YS} of 168 high rate bit-periods.

>   NOTE 6:   This is untestable because the exact value of this parameter is not observable due to
>   the behaviour of the PHY.

CAC_OPS_7   **subclause 8.2.6**   **valid**   **PICS: MC7.2**

Ensure that the IUT:

-       uses a value of i_{MF} of 2 000 high rate bit-periods.

>   NOTE 7:   This is untestable because the exact value of this parameter is not observable due to
>   the behaviour of the PHY.

CAC_OPS_8   **subclause 8.2.6**   **valid**   **PICS: MC7.2**

Ensure that the IUT:

-       uses a value of i_{FS} of 200 high rate bit-periods.

>   NOTE 8:   This is untestable because the exact value of this parameter is not observable due to
>   the behaviour of the PHY.

CAC_OPS_9   **subclause 8.2.6**   **valid**   **PICS: MC7.2**

Ensure that the IUT:

-       uses a value of i_{SS} of 1ms.

>   NOTE 9:   This is untestable because no tolerance is specified.

There are no test purposes explicitly for m_{CP}, p_E, m_{ES}, m_{YS}, m_{FS}, i_{AK}, d_{AK} and d_{EC}. The values of these parameters are implicitly tested by other test purposes.

6.2.2   TPs for channel permission function

6.2.2.1   TPs for CP-HCPDU declaration

Selection: IUT supports HEU role, PICS: R 6.

CAC_CPD_1   **subclause 8.3.1**   **valid**

Ensure that the IUT, to inform neighbouring HC-entities that channel 3 may be used:

-     transmits a CP-HCPDU with C3 set to 1.

CAC_CPD_2   **subclause 8.3.1**   **valid**

Ensure that the IUT, to inform neighbouring HC-entities that channel 4 may be used:

-     transmits a CP-HCPDU with C4 set to 1.

CAC_CPD_3   **subclause 8.3.1**   **valid**

Ensure that the IUT, to inform neighbouring HC-entities that neither channel 3 nor channel 4 may be used:

-     transmits a CP-HCPDU with C3 set to 0 and C4 set to 0.

CAC_CPD_4   **subclause 8.3.1**   **valid**

Ensure that the IUT, to inform neighbouring HC-entities of the currently applied channel permission information:

-     transmits a CP-HCPDU.

6.2.2.2   TPs for CP-HCPDU recording

Selection: IUT supports normal HIPERLAN implementation role, PICS: R 5.

CAC_CPR_1   **subclause 8.3.2**   **valid**

Ensure that the IUT, configured for use of channel 3, having received a CP-HCPDU, indicating channel 3 is allowed to be used, on receipt of a unicast DT-HCPDU (for this IUT) on channel 3 within 60 seconds of the receipt of the CP-HCPDU:

-     transmits a corresponding AK-HCPDU (on channel 3).

CAC_CPR_2   **subclause 8.3.2**   **valid**

Ensure that the IUT, configured for use of channel 4, having received a CP-HCPDU, indicating channel 4 is allowed to be used, on receipt of a unicast DT-HCPDU (for this IUT) on channel 4 within 60 seconds of the receipt of the CP-HCPDU:

-     transmits a corresponding AK-HCPDU (on channel 4).

CAC_CPR_3   **subclause 8.3.2**   **inopportune**

Ensure that the IUT, configured for use of channel 3, having received a CP-HCPDU, indicating channel 3 is NOT allowed to be used, on receipt of a unicast DT-HCPDU (for this IUT) on channel 3:

-     does not transmit a corresponding AK-HCPDU.

CAC_CPR_4   **subclause 8.3.2**   **inopportune**

Ensure that the IUT, configured for use of channel 3, having received, more than 60 seconds previously, the most recent CP-HCPDU (on channel 3), indicating channel 3 is allowed to be used, on receipt of a unicast DT-HCPDU (for this IUT) on channel 3:

-     does not transmit a corresponding AK-HCPDU.

CAC_CPR_5   **subclause 8.5.1, 8.3.2**   **valid/invalid   PICS: NOT SC 8.6**

Ensure that the IUT, configured for use of channel 3, having received a CP-HCPDU containing an LBR-part checksum error, indicating channel 3 is allowed to be used, on receipt of a unicast DT-HCPDU (for this IUT) on channel 3:

-        transmits a corresponding AK-HCPDU (on channel 3).

CAC_CPR_6   **subclause 8.3.2**   **invalid**

Ensure that the IUT, configured for use of channel 3, on receipt of a CP-HCPDU, indicating channel 3 is allowed to be used but containing a HBR-part checksum error:

-        ignores the CP-HCPDU.

6.2.3   TPs for user data transfer function

Selection: IUT supports normal HIPERLAN implementation role, PICS: R 5.

CAC_UDT_1   **subclause 8.4.3**   **valid**

Ensure that the IUT, in the channel free condition, to indicate that the previous free transfer invitation is cancelled and that the HC-entity is no longer ready to process any HCSDU transfer request:

-        issues a HC-STATUS indication, indicating "transfer unsuccessful" and subsequently does not transmit any HCPDUs.

CAC_UDT_2   **subclause 8.4.4**   **valid**

Ensure that the IUT, having previously been in the channel free condition and having issued a HC-STATUS indication, indicating "transfer unsuccessful" and not having issued a HC-SYNC indication, on receipt of a HC-UNITDATA request:

-        issues a HC-STATUS indication, indicating "transfer unsuccessful".

        NOTE 1:   This TP is untestable.

CAC_UDT_3   **subclauses 8.4.1, 8.4.5, 8.5.4   valid**

Ensure that the IUT, having transmitted a unicast DT-HCPDU, on receipt of an AK-HCPDU containing an acknowledgement identifier which is the least significant 8-bit value of the HBR-part checksum specified in the checksum field (CS) of the previously transmitted DT-HCPDU:

-        issues a HC-STATUS indication, indicating "transfer successful" and, if the synchronized transfer invitation procedure is supported, issues a HC-SYNC indication.

CAC_UDT_4   **subclauses 8.4.1, 8.4.5, 8.5.4   valid**

Ensure that the IUT, having sent a unicast DT-HCPDU, on expiry of acknowledgement time (subclause 9.1.5 ETS 300 652-1[1]) without receiving a corresponding AK-HCPDU:

-        issues a HC-STATUS indication, indicating "transfer unsuccessful" and, if the synchronized transfer invitation procedure is supported, issues a HC-SYNC indication.

CAC_UDT_5   **subclauses 8.5.4, 8.4.6**   **invalid**

Ensure that the IUT, having sent a unicast DT-HCPDU, on receipt of an AK-HCPDU containing an acknowledgement identifier which is NOT the least significant 8-bit value of the HBR-part checksum specified in the checksum field (CS) of the previously transmitted DT-HCPDU:

-        issues a HC-STATUS indication, indicating "transfer unsuccessful" and, if the synchronized transfer invitation procedure is supported, issues a HC-SYNC indication.

CAC_UDT_6   **subclauses 8.4.5, 8.5.4**   **valid**

Ensure that the IUT, at the end of transmission of a multicast DT-HCPDU:

-        issues a HC-STATUS indication, indicating "transfer successful".

CAC_UDT_7   **subclause 8.4.5**   **valid**

Ensure that the IUT, on receipt of a HC-UNITDATA request where the destination address parameter identifies the local HCS-user (exclusively):

-        does not generate a DT-HCPDU and issues a HC-STATUS indication, indicating "transfer successful".

   NOTE 2:   This TP is untestable.

CAC_UDT_8   **subclause 8.4.5**   **valid**

Ensure that the IUT, on receipt of a HC-UNITDATA request where the destination address parameter identifies a non-local HCS-user (exclusively):

-        generates a corresponding DT-HCPDU.

CAC_UDT_9   **subclause 8.4.5**   **valid**

Ensure that the IUT, on receipt of a HC-UNITDATA request where the destination address parameter identifies a non-local HCS-user (inclusively):

-        generates a corresponding DT-HCPDU.

CAC_UDT_10   **subclause 8.4.6**   **valid**

Ensure that the IUT, on receipt of a DT-HCPDU where the DA identifies the local HCS-user:

-        issues a corresponding HC-UNITDATA indication.

6.2.4   TPs for HCPDU transfer function

6.2.4.1   TPs for LBR-part checksum computation

CAC_LBR_1   subclauses 8.5.1, 8.5.3   valid   PICS: R5

Ensure that the IUT, in the channel free condition or in the synchronized channel condition, on receipt of a HC-UNITDATA request:

-        transmits a DT-HCPDU, including correct HDACS and BLIRCS.

CAC_LBR_2   subclauses 8.5.1, 8.5.3   valid   PICS: R 6

Ensure that the IUT, on transmission of a CP-HCPDU:

-        transmits a CP-HCPDU, including correct HDACS and BLIRCS.

CAC_LBR_3   subclauses 8.5.1, 8.5.3   valid   PICS: R5

Ensure that the IUT, on receipt of a unicast DT-HCPDU (for the IUT):

-        transmits an AK-HCPDU, including correct AIDCS.

6.2.4.2 TPs for HBR-part checksum computation

CAC_HBR_1   **subclause 8.5.2**   **valid**   **PICS: R5**

Ensure that the IUT, in the channel free condition or in the synchronized channel condition, on receipt of a HC-UNITDATA request:

- transmits a DT-HCPDU, including correct HBR-part CS.

CAC_HBR_2   **subclause 8.5.2**   **valid**   **PICS: R 6**

Ensure that the IUT, on transmission of a CP-HCPDU:

- transmits a CP-HCPDU, including correct HBR-part CS.

6.2.4.3 TPs for hashed address computation

CAC_HDA_1   **subclause 8.5.3**   **valid**

Ensure that the IUT, in the channel free condition or in the synchronized channel condition, on receipt of a HC-UNITDATA request, where the destination address is a group HCSAP-address:

- transmits a DT-HCPDU, including a HDA whose high order bit is encoded as 1 and whose low order 8 bits are encoded as the 8-bit unsigned binary number obtained from XORing all the individual octets of the 4-octet HID and the 6-octet DA.

CAC_HDA_2   **subclause 8.5.3**   **valid**

Ensure that the IUT, in the channel free condition or in the synchronized channel condition, on receipt of a HC-UNITDATA request, where the destination address is an individual HCSAP-address:

- transmits a DT-HCPDU, including a HDA whose high order bit is encoded as 0 and whose low order 8 bits are encoded as the 8-bit unsigned binary number obtained from XORing all the individual octets of the 4-octet HID and the 6-octet DA.

CAC_HDA_3   **subclause 8.5.3**   **valid**   **PICS: R6**

Ensure that the IUT, on transmission of a CP-HCPDU:

- transmits a CP-HCPDU, including a HDA whose high order bit is encoded as 1 and whose low order 8 bits are encoded as the 8-bit unsigned binary number obtained from XORing all the individual octets of the 4-octet HID and the 6-octet DA.

6.2.4.4 TPs for LBR-HBR HCPDU transmission

CAC_TRA_1   **subclause 8.5.4**   **valid**   **PICS R 5**

Ensure that the IUT, in the channel free condition or in the synchronized channel condition, on receipt of a HC-UNITDATA request where the destination address parameter identifies a non-local HCS-user:

- transmits a corresponding DT-HCPDU with correct values of HDA, HDACS, BLIR, BLIRCS, CS.

CAC_TRA_2   **subclause 8.5.4**   **valid**   **PICS: R 6**

Ensure that the IUT, on transmission of a CP-HCPDU:

- transmits the CP-HCPDU with correct values of HDA, HDACS, BLIR, BLIRCS, CS.

CAC_TRA_3   subclause 8.5.4   valid   PICS R 5

Ensure that the IUT, having transmitted a unicast DT-HCPDU, on receipt of a corresponding AK-HCPDU:

-       issues a HC-STATUS indication indicating "transfer successful".

    NOTE 1:   The test case corresponding to this IUT is identical to that for CAC_UDT_3 and appears in the ATS under that reference.

CAC_TRA_4   subclause 8.5.4   valid   PICS R 5

Ensure that the IUT, on transmission of a multicast DT-HCPDU:

-       issues a HC-STATUS indication indicating "transfer successful".

    NOTE 2:   The test case corresponding to this IUT is identical to that for CAC_UDT_6 and appears in the ATS under that reference.

CAC_TRA_5   subclause 8.5.4   valid   PICS R 5

Ensure that the IUT, having sent a unicast DT-HCPDU, on receipt of a corresponding AK-HCPDU containing an erroneous AId-CS:

-       issues a HC-STATUS indication indicating "transfer unsuccessful".

CAC_TRA_6   subclause 8.5.4   inopportune   PICS R 5

Ensure that the IUT, having transmitted a multicast DT-HCPDU, on receipt of an AK-HCPDU consistent with the previously transmitted DT-HCPDU:

-       issues a HC-STATUS indication indicating "transfer successful".

6.2.4.5   TPs for HCPDU reception

Selection: IUT supports normal HIPERLAN implementation role, PICS: R 5.

CAC_REC_1   subclause 8.5.5   invalid   PICS: NOT SC 8.6

Ensure that the IUT, on receipt of a unicast DT-HCPDU (HID and DA for the IUT) containing an HDA not matching the IUT and an erroneous HDACS:

-       transmits a corresponding AK-HCPDU.

CAC_REC_2   subclause 8.5.5   invalid   PICS: NOT SC 8.6

Ensure that the IUT, on receipt of a unicast DT-HCPDU (for the IUT) containing an erroneous HDACS:

-       transmits a corresponding AK-HCPDU.

CAC_REC_3   subclause 8.5.5   invalid   PICS: SC 8.6

Ensure that the IUT, on receipt of a unicast DT-HCPDU (for the IUT) containing an erroneous BLIR-CS:

-       transmits a corresponding AK-HCPDU and issues a corresponding HC-UNITDATA indication; or

-       ignores the DT-HCPDU.

CAC_REC_4   subclause 8.5.5   invalid   PICS: NOT SC 8.6

Ensure that the IUT, on receipt of a unicast DT-HCPDU (for the IUT) containing an erroneous BLIR-CS:

-       transmits a corresponding AK-HCPDU.

CAC_REC_5   **subclause 8.5.5**   **valid**

Ensure that the IUT, on receipt of a unicast DT-HCPDU whose LBR-part contains a HDA (NOT for the IUT):

-      ignores the DT-HCPDU.

CAC_REC_6   **subclause 8.5.5**   **valid**

Ensure that the IUT, on receipt of a unicast DT-HCPDU whose LBR-part contains a HDA (for the IUT) and whose HBR-part contains a DA (for the IUT) and a HID (NOT for the IUT):

-      ignores the DT-HCPDU.

CAC_REC_7   **subclause 8.5.5**   **valid**

Ensure that the IUT, on receipt of a unicast DT-HCPDU whose LBR-part contains a HDA (for the IUT) and whose HBR-part contains a DA (NOT for the IUT) and a HID (for the IUT):

-      ignores the DT-HCPDU.

CAC_REC_8   **subclause 8.5.5**   **valid**

Ensure that the IUT, on receipt of a unicast DT-HCPDU (for the IUT):

-      transmits a corresponding AK-HCPDU and issues a corresponding HC-UNITDATA indication.

CAC_REC_9   **subclause 8.5.5**   **valid**

Ensure that the IUT, on receipt of a multicast DT-HCPDU (for the IUT):

-      issues a corresponding HC-UNITDATA indication and does not transmit a corresponding AK-HCPDU.

CAC_REC_10   **subclause 8.5.5**   **valid**

Ensure that the IUT, on receipt of a unicast DT-HCPDU (for the IUT):

-      transmits a corresponding AK-HCPDU.

6.2.5   TPs for structure and encoding of HCPDUs

CAC_VAR_1   **subclauses 8.5.5, 8.6**   **invalid**   **PICS: R 5**

Ensure that the IUT, on receipt of a unicast DT-HCPDU (for the IUT) with an incorrect BLIR and a correct BLI:

-      transmits a corresponding AK-HCPDU.

CAC_VAR_2   **subclauses 8.5.5, 8.6**   **invalid**   **PICS: R 5**

Ensure that the IUT, on receipt of a unicast DT-HCPDU whose LBR-part contains a HDA (NOT for the IUT) and whose HBR-part contains a DA (for the IUT) and a HID (for the IUT):

-      does not transmit a corresponding AK-HCPDU.

CAC_VAR_3   subclauses 8.5.5, 8.6   invalid   PICS: R 5

Ensure that the IUT, on receipt of a unicast DT-HCPDU (for the IUT) whose LBR-part contains bit 9 set to 0:

- transmits a corresponding AK-HCPDU and issues a corresponding HC-UNITDATA indication.

CAC_VAR_4   subclauses 8.5.5, 8.6   invalid   PICS: R 5

Ensure that the IUT, on receipt of an LBR HCPDU (AK-HCPDU) with bit 9 set to 0:

- processes the HCPDU (issues a HC-STATUS indication indicating "transfer successful").

CAC_VAR_5   subclauses 8.5.5, 8.6   invalid   PICS: R 5

Ensure that the IUT, on receipt of a unicast DT-HCPDU (for the IUT) with HI bit set to 0:

- does not transmit a corresponding AK-HCPDU.

CAC_VAR_6   subclauses 8.5.5, 8.6   invalid   PICS: R 5

Ensure that the IUT, on receipt of an LBR HCPDU (AK-HCPDU) with HI bit set to 1:

- ignores the HCPDU.

CAC_VAR_7   subclauses 8.5.5, 8.6   invalid   PICS: R 5

Ensure that the IUT, on receipt of a DT-HCPDU (for the IUT) with BLI value set to 48 and with valid number of blocks (1 to 47):

- does not transmit a corresponding AK-HCPDU.

CAC_VAR_8   subclauses 8.5.5, 8.6   invalid   PICS: R 5

Ensure that the IUT, on receipt of a DT-HCPDU (for the IUT) with BLI value set to 0 and with valid number of blocks (1 to 47):

- does not transmit a corresponding AK-HCPDU.

CAC_VAR_9   subclauses 8.5.5, 8.6   invalid   PICS: R 5

Ensure that the IUT, on receipt of a DT-HCPDU (for the IUT) with PLI value set to 52 and with valid size of PAD field (0 to 51 octets):

- does not transmit a corresponding AK-HCPDU.

CAC_VAR_10   subclauses 8.5.5, 8.6   valid   PICS: R 5

Ensure that the IUT, on receipt of a DT-HCPDU (for the IUT) with a valid PAD field containing at least one non-zero octet:

- transmits a corresponding AK-HCPDU.

CAC_VAR_11   subclauses 8.5.5, 8.6   valid   PICS: R 5

Ensure that the IUT, on receipt of a DT-HCPDU (for the IUT) with SA set to the (IUTs) local HCSAP-address:

- transmits a corresponding AK-HCPDU.

CAC_VAR_12   **subclauses 8.5.5, 8.6**   **invalid**   **PICS: R 5**

Ensure that the IUT, on receipt of a DT-HCPDU (for the IUT) with an incorrect CS value:

-       does not transmit a corresponding AK-HCPDU.

CAC_VAR_13   **subclauses 8.5.5, 8.6**   **invalid**   **PICS: R 5**

This TP is deleted.
CAC_VAR_14   **subclauses 8.5.5, 8.6**   **invalid**   **PICS: R 6**

Ensure that the IUT, on receipt of a CP-HCPDU with a BLI value of 2:

-       ignores the CP-HCPDU.

CAC_VAR_15   **subclauses 8.5.5, 8.6**   **invalid**   **PICS: R 6**

Ensure that the IUT, on receipt of a CP-HCPDU with a PLI value of 28 and with PAD of 29 octets:

-       ignores the CP-HCPDU.

CAC_VAR_16   **subclauses 8.5.5, 8.6**   **invalid**   **PICS: R 6**

Ensure that the IUT, on receipt of a CP-HCPDU with a HID containing the (IUTs) local HIPERLAN identity and not "Any_HIPERLAN":

-       ignores the CP-HCPDU.

CAC_VAR_17   **subclauses 8.5.5, 8.6**   **invalid**   **PICS: R 6**

Ensure that the IUT, on receipt of a CP-HCPDU with a DA containing the (IUTs) local HCSAP-address and not "All_Neighbours":

-       ignores the CP-HCPDU.

CAC_VAR_18   **subclauses 8.5.5, 8.6**   **invalid**   **PICS: R 6**

Ensure that the IUT, on receipt of a CP-HCPDU with a SA containing an individual HCSAP-address and not "FF FF FF FF FF FF":

-       ignores the CP-HCPDU.

CAC_VAR_19   **subclauses 8.5.5, 8.6**   **invalid**   **PICS: R 6**

Ensure that the IUT, on receipt of a CP-HCPDU with the reserved field containing a non-zero value:

-       ignores the CP-HCPDU.

CAC_VAR_20   **subclauses 8.5.5, 8.6**   **invalid**   **PICS: R 5**

Ensure that the IUT, on receipt of a unicast DT-HCPDU (for the IUT) with a BLI value less than the correct value:

-       does not transmit a corresponding AK-HCPDU.

CAC_VAR_21   **subclauses 8.5.5, 8.6**   **invalid**   **PICS: R 5**

Ensure that the IUT, on receipt of a unicast DT-HCPDU (for the IUT) with no UD field:

-       does not transmit a corresponding AK-HCPDU.

CAC_VAR_22   **subclauses 8.5.5, 8.6**   **valid**   **PICS: R 5**

Ensure that the IUT, on receipt of a unicast DT-HCPDU (for this IUT) with UD of maximum size (2 422 octets):

- transmits a corresponding AK-HCPDU and issues a corresponding HC-UNITDATA indication.

CAC_VAR_23   **subclauses 8.5.5, 8.6**   **invalid**   **PICS: R 5**

Ensure that the IUT, on receipt of a unicast DT-HCPDU (for the IUT) with a BLI value greater than 47 and a consistent UD field:

- does not transmit a corresponding AK-HCPDU.

CAC_VAR_24   **subclauses 8.6**   **valid**   **PICS: R 5**

Ensure that the IUT, in the channel free condition or in the synchronized channel condition, on receipt of a HC-UNITDATA request with a HCSDU of 2 369 octets:

- transmits a DT-HCPDU with PLI value of 1.

CAC_VAR_25   **subclause 8.6**   **valid**   **PICS: R 5**

Ensure that the IUT, in the channel free condition or in the synchronized channel condition, on receipt of a HC-UNITDATA request with a HCSDU of 2 370 octets:

- transmits a DT-HCPDU with PLI value of 0 and a BLI value of 46.

CAC_VAR_26   **subclause 8.6**   **valid**   **PICS: R 5**

Ensure that the IUT, in the channel free condition or in the synchronized channel condition, on receipt of a HC-UNITDATA request with a HCSDU of 2 371 octets:

- transmits a DT-HCPDU with PLI value of 51 and a BLI value of 47.

7 Compliance

An ATS which complies with this TSS&TP specification shall:

a)   consist of a set of test cases corresponding to the set or to a subset of the TPs specified in clause 6;

b)   use a TSS which is an appropriate subset of the whole of the TSS specified in clause 4;

c)   use the same naming conventions for the test groups and test cases;

d)   maintain the relationship specified in clause 6 between the test groups and TPs and the entries in the PICS proforma to be used for test case deselection;

e)   comply with ISO/IEC 9646-2 [4].

In the case of a) or b) above, a subset shall be used only where a particular Abstract Test Method (ATM) makes some TPs untestable. All testable TPs from clause 6 shall be included in a compliant ATS.

8 Requirements for a comprehensive testing service

As a minimum the remote test method, as specified in ISO/IEC 9646-2 [4], shall be used by any organization claiming to provide a comprehensive testing service for equipment claiming conformance to ETS 300 652 [1].

History

Document history			
February 1997	Public Enquiry	PE 9724:	1997-02-14 to 1997-06-13
February 1998	Vote	V 9817:	1998-02-24 to 1998-04-24