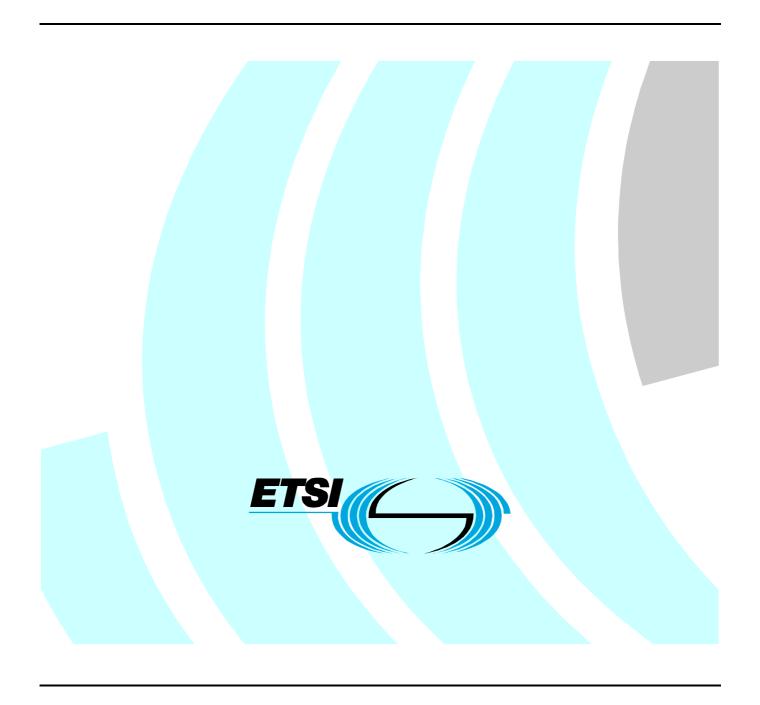# ETSI TS 102 385-2 V1.1.1 (2005-02)

Technical Specification

Broadband Radio Access Networks (BRAN);
HiperMAN;
Conformance testing for the Data Link Control Layer (DLC);
Part 2: Test Suite Structure and
Test Purposes (TSS&TP) specification

ETSI

Reference

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Foreword

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

The present document is part 2 of a multi-part deliverable covering Conformance testing for the Data Link Control Layer (DLC), as identified below:

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

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

Part 3:   Abstract Test Suite (ATS).

1 Scope

The present document contains the Test Suite Structure (TSS) and Test Purposes (TP) to test the BRAN HiperMAN Data Link Control (DLC) layer.

The objective of this test specification is to provide a basis for conformance tests for HiperMAN equipment giving a high probability of air interface inter-operability between different manufacturers' HiperMAN equipment.

The ISO standard for the methodology of conformance testing (ISO/IEC 9646-1 [4] and ISO/IEC 9646-2 [5]) as well as the ETSI rules for conformance testing (ETS 300 406 [3]) are used as a basis for the test methodology.

2 References

The following documents contain provisions which, through reference in this text, constitute provisions of the present document.

- References are either specific (identified by date of publication and/or edition number or version number) or non-specific.

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

- For a non-specific reference, the latest version applies.

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

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

[2]   IEEE P802.16 (2004): "Standard for Telecommunications and Information Exchange Between Systems - LAN/MAN Specific Requirements - Air Interface for Fixed Broadband Wireless Access Systems".

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

[4]   ISO/IEC 9646-1: "Information technology - Open Systems Interconnection - Conformance testing methodology and framework - Part 1: General concepts".

NOTE: See also ITU-T Recommendation X.290.

[5]   ISO/IEC 9646-2: "Information technology - Open Systems Interconnection - Conformance testing methodology and framework - Part 2: Abstract Test Suite specification".

NOTE: See also ITU-T Recommendation X.291.

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

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

3   Definitions and abbreviations

3.1   Definitions

For the purposes of the present document, the terms and definitions given in ISO/IEC 9646-7 [7], TS 102 178 [1] and IEEE P802.16 [2] apply.

3.2   Abbreviations

For the purposes of the present document, the abbreviations given in ISO/IEC 9646-1 [4], ISO/IEC 9646-6 [6], ISO/IEC 9646-7 [7], TS 102 178 [1] and IEEE P802.16 [2] and the following apply:

AAS	Adaptive Antenna System
BO	Inopportune Behaviour
BS	Base Station
BV	Valid Behaviour
CID	Connection IDentifier
CINR	Carrier to Noise and interference Ratio
CP	Cyclic Prefix
CS	Convergence Sublayer
DLC	Data Link Control
FDD	Frequency Division Duplexing
IE	Information Element
MS	Mini-Slot
OFDM	Orthogonal Frequency Division Multiplexing
PDU	Protocol Data Unit
PDU	Protocol Data Unit
PHY	PHYsical
PMP	Point-to-MultiPoint
QAM	Quadrature Amplitude Modulation
QoS	Quality of Service
REQ	REQuest
RNG	RaNGing
RSP	ReSPonse
RTG	Receive/transmit Transition Gap
RX	Receive
SS	Subscriber Station
TDD	Time Division Duplexing
TP	Test Purposes
TSS	Test Suite Structure
TTG	Transmit/receive Transition Gap
TX	Transmit

4   Test Suite Structure (TSS)

4.1   Structure

Figure 1 shows the DLC Test Suite Structure (TSS) including its subgroups defined for the conformance testing.

Group	Service	Function	Sub-Function
DLC Convergence Sublayer	Packet CS	PDU Classification	Receive
			Transmit
DLC MAC Sublayer	MAC PDU Construction		
	PMP & Mesh Common Behaviour	Adaptive Antenna Support	
		Additional Privacy Features	Authentication
			Cryptography
			SS Reauthorization
			TEK Update
			TEK Exchange
		ARQ	Reset
			Receive
			Transmit
		Bandwidth Allocation	Bandwidth Requests
			Polling
		Contention Resolution	
		CRC Use	
		Encryption	Dynamic Service Addition
			SS Reauthorization
			TEK Update
			TEK Exchange
		Fragmentation	
		PHY Layer Support	
		Packing	
		Privacy Key Management	
		Reports	
		Reset	
		Uplink Scheduling	
	PMP Behaviour	Network Entry and Initialization	Obtain Transfer Parameters
			Initial Ranging
			Negotiate Basic Capabilities
			Certification
			Authorization & Key Exchange
			Node Registration
			Establish IP Connectivity
			Establish Time of Day
			Transfer Operational Parameters
		Dynamic Services	Addition (see note)
			Change (see note)
			Release (see note)
		Channel Descriptors	
		Clock Comparison	
		DL Burst Profile Management	
		Multicast	
		Service Flow	
	Mesh Mode Behaviour	Encryption	TEK Update

NOTE: Additional sub-categories: SS-Initiated and BS-Initiated.

Figure 1: TSS for HiperMAN DLC

The test suite is structured as a tree with the root defined as DLC-BS, DLC-SS, or DLC-NB representing the protocol groups "DLC for BS", "DLC for SS", or "DLC for Neighbour Node (Mesh only)".

4.2 Test groups

The test groups are organized in five levels. The first level creates two protocol groups for the Convergence and MAC sublayers. The second level separates the protocol services in functional modules. The third level in each branch service functions. The fourth level is the set of sub-functions of the service functions, if required. The fifth level is used to indicate the initiator (BS or SS) or the direction of communication (DL or UL).

4.2.1 Protocol groups

The protocol groups identify the DLC services shown in TS 102 178 [1] and IEEE P802.16 [2]. There are two groups.

4.2.1.1 DLC Convergence Sublayer

The service specific convergence sublayer (CS) resides on top of the MAC sublayer and utilizes, via the MAC SAP, the services provided by the MAC sublayer. The CS performs the following functions:

- Accepting higher-layer PDUs.

- Classifying higher-layer PDUs.

- Processing (if necessary) classified higher-layer PDUs.

- Delivering PDUs to the appropriate MAC SAP.

4.2.1.2 DLC MAC Sublayer

The MAC sublayer provides the core MAC functionality of system access, bandwidth allocation, connection establishment, and connection maintenance. It receives data from the various convergence sublayers classified to particular MAC connections. QoS is applied to the transmission and scheduling of data over the PHY. The MAC sublayer also performs authentication, secure key exchange, and encryption management.

4.2.2 Main test types

The main test types are the valid behaviour group, the invalid behaviour group and the inopportune behaviour group.

4.2.2.1 Valid Behaviour (BV) tests

This test group shall verify that the IUT reacts in conformity with the base specifications after receipt or exchange of valid Protocol Data Units (PDUs). Valid PDUs means that the exchange of messages and the content of the exchanged messages are considered as valid.

4.2.2.2 Timer (TI) tests

This test group shall verify that the IUT reacts in conformity with the TS after expiry of a defined timer.

4.2.2.3 Inopportune Behaviour (BO) tests

This test group shall verify that the IUT reacts in conformity with the TS after receipt of an unexpected but syntactically correct PDU.

5   Test Purposes (TP)

5.1   Introduction

There are a total of 882 test purposes.

5.1.1   TP definition conventions

The TPs are defined by the rules shown in table 1.

Table 1: TP definition rules

TP Definition Item	Item Description
TP Id	The TP Id is a unique identifier formed according to the TP naming conventions defined in clause 5.1.2.
Reference	A pointer to the base specification requirement from which the TP is derived (specification reference, clause, and paragraph).
Condition	The IUT's state to which the TP is applied.
Stimulus	The events that provoke the expected behaviour given the initial condition.
Expected behaviour	Definition of the events that are expected from the IUT pursuant to the base specification.

5.1.2   TP naming conventions

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

Table 2: TP naming convention

Identifier:	TP/<st>/<pg>/<sg>/<fm>/<sm>/<ini>/<x>-<nnn>		
	<st> = side type	BS	Base Station
		SS	Subscriber Station
		NB	Neighbor (for Mesh Mode)
	<pg> = protocol group	CS	DLC Convergence Sublayer
		MS	DLC MAC Sublayer
	<sg> = service group	PS	Packet CS
		CO	MAC PDU Construction
		MP	Both PMP and Mesh Mode MAC Management
		PMP	PMP Mode MAC Management
		MM	Mesh Mode MAC Management
	<fm> = functional module	CL	PDU Classification
		AA	Adaptive Antenna Support
		AP	Additional Privacy Features
		ARQ	ARQ
		BA	Bandwidth Allocation
		CR	Contention Resolution
		CRC	CRC Use
		EN	Encryption
		FR	Fragmentation
		PHY	PHY Layer Support
		PK	Packing
		PO	Polling
		PKM	Privacy Key Management
		RE	Reset
		US	Uplink Scheduling
		NE	Network Entry and Initialization
		DS	Dynamic Services
		CD	Channel Descriptors
		CLK	Clock Comparison
		PM	DL Burst Profile Management

Identifier:	TP/<st>/<pg>/<sg>/<fm>/<sm>/<ini>/<x>-<nnn>			
			DR	Deregistration
			MC	Multicast
			SF	Service Flow
			RR	Reports
	<sm> = sub-functional module		RX	Receive
			TX	Transmit
			ATH	Authentication
			CRY	Cryptography
			SSR	SS Reauthorization
			TKU	TEK Update
			TKX	TEK Exchange
			RE	Reset
			BR	Bandwidth Requests
			PO	Polling
			TXP	Obtain Transfer Parameters
			IR	Initial Ranging
			BC	Negotiate Basic Capabilities
			CRT	Certification
			AK	Authorization and Key Exchange
			NR	Node Registration
			IP	Establish IP Connectivity
			DY	Establish Time of Day
			TOP	Transfer Operation Parameters
			AD	Addition (Dynamic Services)
			CH	Change
			RL	Release
			PR	Periodic Ranging
	ini = initiator of procedure		BS-INI	Procedure is initiated by BS
			SS-INI	Procedure is initiated by SS
			DL	Downlink
			UL	Uplink
	x = type of testing		CA	Capability Tests
			BO	Inopportune Behaviour Tests
			TI	Timer Tests
	<nnn> = sequential number		(000...)	

EXAMPLE: TP/SS/MS/PMP/DS/AD/SS-INI/BV-010 is the tenth purpose for the valid behaviour testing of the
SS-initiated Dynamic Service addition procedure of the PMP service group of MAC sublayer
implemented at the SS side.

5.1.3   Sources of TP definitions

All TPs are specified according to IEEE P802.16 [2] and supplemented by TS 102 178 [1]. In the event of conflict
between these three references, the requirements of IEEE P802.16 [2] were used. Unless otherwise noted, all references
shown in the TPs are from to IEEE P802.16 [2].

The scope of the current document was refined during its development and is now fixed at the subset of IEEE P802.16 [2] that specifically concerns the current HiperMAN concept. The following presents the included and excluded functions:

- Included functionality:

  - PMP-only;

  - OFDM PHY-only;

  - Adaptive antenna support (PMP-specific);

  - All privacy features;

  - ARQ;

  - CRC;

  - Fragmentation;

  - Multicast;

  - Bandwidth allocation (PMP-specific);

  - Channel description (PMP-specific);

  - Clock comparison (PMP-specific);

  - Contention resolution (PMP-specific);

  - DL burst profile management (PMP-specific);

  - Dynamic services (PMP-specific);

  - Network entry and initialization (PMP-specific);

  - Packing;

  - PHY layer support (PMP-specific);

  - Packet CS;

  - Polling (PMP-specific);

  - Reports;

  - Service Flow (PMP-specific);

  - Uplink scheduling (PMP-specific).

- Excluded functionality:

  - Mesh mode;

  - License-exempt operation;

  - ATM CS;

  - PHS.

5.2   Test purposes for BS (BS)

5.2.1   DLC Convergence Sublayer (CS)

5.2.1.1   Packet CS (PS)

5.2.1.1.1   PDU Classification (CL)

5.2.1.1.1.1   Receive (RX)

TP ID	BS/CS/PS/CL/RX/BV-000
Reference	Clause 5.25.2.2
Selection criteria	
Initial condition	The IUT receives connection data. The TE transmits data on the connection.
Test purpose	Check that the IUT: Provides the upper layer PDU via the CS SAP corresponding to the classifier associated with the CID.
Note	Requires a PCO on the CS SAP.

TP ID	BS/CS/PS/CL/RX/BV-001
Reference	Clause 11.13.19.3.3
Selection criteria	
Initial condition	TE is initialized and a dynamic service is established with data flow. The TE transmits a DSC-REQ with an invalid Change Action for the classifier.
Test purpose	Check that the IUT: Transmits a DSC-RSP with a Classifier error parameter set indicating an invalid Change Action.

TP ID	BS/CS/PS/CL/RX/BV-002
Reference	Clause 11.13.19.3.3
Selection criteria	
Initial condition	TE is initialized and a dynamic service is established with data flow. The TE transmits a DSC-REQ with an invalid IP Protocol value for the classifier.
Test purpose	Check that the IUT: Transmits a DSC-RSP with a Classifier error parameter set indicating an invalid IP Protocol value.

5.2.1.1.1.2   Transmit (TX)

TP ID	BS/CS/PS/CL/TX/BV-000
Reference	Clause 5.2.2
Selection criteria	PIC_action_on_unmatched_classifier
Initial condition	The IUT is the transmitter of connection data. Data has been successfully transmitted on this connection. The TE provides an upper layer PDU to the IUT's CS SAP that does not have a classifier in which all parameters match the packet.
Test purpose	Check that the IUT: Either delivers the PDU to a default CID, or Discards the packet.
Note	Requires an UT over the CS and an implicit send/external operation that sends the upper layer PDU to the CS SAP. The action vendor-specific; thus, it is a PICS item.

TP ID	BS/CS/PS/CL/TX/BV-001
Reference	Clause 5.2.2
Selection criteria	
Initial condition	The IUT is the transmitter of connection data.
Test purpose	Check that the IUT: Delivers the PDU to the corresponding connection (CID). The TE provides an upper layer PDU to the IUT's CS SAP that has only one classifier in which all parameters match the packet.
Note	Requires an UT over the CS and an implicit send/external operation that sends the upper layer PDU to the CS SAP.

TP ID	BS/CS/PS/CL/TX/BV-002
Reference	Clause 5.2.2
Selection criteria	
Initial condition	The IUT has several connections, each of which has an identical classifier assigned to them except for the classifier priority field. The TE provides a data PDU to the CS via the CS SAP using the classifier.
Test purpose	Check that the IUT: Transmits the PDU on the MAC CID having the highest priority.
Note	One testing approach: Setup: Provoke the IUT to establish three connections with each connection having a different measurable QoS associated with each CID. (This is possible if the connections can be provisioned. If not, they must be established by DSA-REQ if possible.) During the connection establishment, assign identical classifiers to each connection except for the priority which shall be 0, 127, and 255. The classifier with priority = 0 is assigned to the connection with the lowest QoS, that having the priority = 255 is assigned to the highest QoS. The TE then provides a data PDU to the CS via a CS SAP. Check that the IUT: Transmits the PDU on the CID with the highest priority.

TP ID	BS/CS/PS/CL/TX/BV-003
Reference	Clause 5.2.2
Selection criteria	
Initial condition	The IUT has several connections, each of which has identical classifier assigned to them except for the classifier priority field. The IUT is transmitting data on the MAC CID having the highest priority for the classifier. The service flow for that MAC CID is then deleted.
Test purpose	Check that the IUT: Transmits the data on the MAC CID having the next highest priority for the same classifier.
Note	One testing approach: Setup: Provoke the IUT to establish three connections with each connection having a different measurable QoS associated with each CID. (This is possible if the connections can be provisioned. If not, they must be established by DSA-REQ if possible.) During the connection establishment, assign identical classifiers to each connection except for the priority which shall be 0, 127, and 255. The classifier with priority = 0 is assigned to the connection with the lowest QoS, that having the priority = 255 is assigned to the highest QoS. The IUT then transmits data on the CID with the next highest priority. The service flow is then deleted.

TP ID	BS/CS/PS/CL/TX/BV-004
Reference	Clause 11.13.19.3.2
Selection criteria	PIC_action_on_unmatched_classifier
Initial condition	The TE is providing data PDUs to IUT's CS SAP that does not match any classifier. The IUT either transmits the data on a default MAC CID or discards the data (implementation-specific declared in PICS). The IUT is then provoked to add a classifier matching the data using a DSC transaction.
Test purpose	Check that the IUT: Transmits the data on the MAC CID corresponding to the added classifier.

TP ID	BS/CS/PS/CL/TX/BV-005
Reference	Clause 11.13.19.3.2
Selection criteria	PIC_action_on_unmatched_classifier
Initial condition	The IUT is transmitting data on two MAC CIDs. The classifiers associated with each CID are not identical and have different priorities. The IUT is then provoked to replace the classifier using a DSC transaction. The classifier is replaced with a classifier identical to the other classifier but having a lower priority.
Test purpose	Check that the IUT: Transmits the data that was on two MAC CIDs on the MAC CID with the classifier having the highest priority.

TP ID	BS/CS/PS/CL/TX/BV-006
Reference	Clause 11.13.19.3.2
Selection criteria	PIC_action_on_unmatched_classifier
Initial condition	The IUT is transmitting data on a MAC CID corresponding to the classifier established during connection setup. The IUT is then provoked to delete the classifier using a DSC transaction. There is no classifier that matches the data being transmitted.
Test purpose	Check that the IUT: Either transmits the data on a default MAC CID or discards the data (implementation-specific declared in PICS).

TP ID	BS/CS/PS/CL/TX/BV-007
Reference	Clauses 5.2.6.2, 11.13.19.2, 11.13.19.3.4.2
Selection criteria	
Initial condition	IUT is initialized and a dynamic service is established with IP data flow with a classifier only containing IP type of service. The IUT is provoked to add a classifier for a connection having a higher QoS than that being used by the IP data flow with a classifier containing only IP type of service.
Test purpose	Check that the IUT: Transmits the data on the connection having the higher QoS.

TP ID	BS/CS/PS/CL/TX/BV-008
Reference	Clauses 5.2.6.2, 11.13.19.2, 11.13.19.3.4.3
Selection criteria	
Initial condition	IUT is initialized and a dynamic service is established with IP data flow with a classifier only containing the IP protocol field. The IUT is provoked to add a classifier for a connection having a higher QoS than that being used by the IP data flow with a classifier containing only IP protocol field.
Test purpose	Check that the IUT: Transmits the data on the connection having the higher QoS.

TP ID	BS/CS/PS/CL/TX/BV-009
Reference	Clauses 5.2.6.2, 11.13.19.2, 11.13.19.3.4.4
Selection criteria	
Initial condition	IUT is initialized and a dynamic service is established with IP data flow with a classifier only containing the IP source address. The IUT is provoked to add a classifier for a connection having a higher QoS than that being used by the IP data flow with a classifier containing only IP source address.
Test purpose	Check that the IUT: Transmits the data on the connection having the higher QoS.

TP ID	BS/CS/PS/CL/TX/BV-010
Reference	Clauses 5.2.6.2, 11.13.19.2, 11.13.19.3.4.5
Selection criteria	
Initial condition	IUT is initialized and a dynamic service is established with IP data flow with a classifier only containing the IP destination address. The IUT is provoked to add a classifier for a connection having a higher QoS than that being used by the IP data flow with a classifier containing only IP destination address.
Test purpose	Check that the IUT: Transmits the data on the connection having the higher QoS.

TP ID	BS/CS/PS/CL/TX/BV-011
Reference	Clauses 5.2.6.2, 11.13.19.2, 11.13.19.3.4.6
Selection criteria	
Initial condition	IUT is initialized and a dynamic service is established with IP data flow with a classifier only containing the IP source port. The IUT is provoked to add a classifier for a connection having a higher QoS than that being used by the IP data flow with a classifier containing only IP source port.
Test purpose	Check that the IUT: Transmits the data on the connection having the higher QoS.

TP ID	BS/CS/PS/CL/TX/BV-012
Reference	Clauses 5.2.6.2, 11.13.19.2, 11.13.19.3.4.7
Selection criteria	
Initial condition	IUT is initialized and a dynamic service is established with IP data flow with a classifier only containing the IP destination port. The IUT is provoked to add a classifier for a connection having a higher QoS than that being used by the IP data flow with a classifier containing only IP destination port.
Test purpose	Check that the IUT: Transmits the data on the connection having the higher QoS.

TP ID	BS/CS/PS/CL/TX/BV-013
Reference	Clauses 5.2.6.2, 11.13.19.2, 11.13.19.3.4.2-7
Selection criteria	
Initial condition	IUT is initialized and a dynamic service is established with IP data flow with all the IP classifier fields: type of service, protocol, source address, destination address, source port, and destination port. The IUT is provoked to add a classifier matching all the IP classifier fields for a connection having a higher QoS than that being used by the IP data flow with all the IP classifier fields.
Test purpose	Check that the IUT: Transmits the data on the connection having the higher QoS.

TP ID	BS/CS/PS/CL/TX/BV-014
Reference	Clauses 5.2.4.2, 11.13.19.2, 11.13.19.3.4.8
Selection criteria	
Initial condition	IUT is initialized and a dynamic service is established with Ethernet data flow with a classifier only containing the Ethernet MAC destination address field. The IUT is provoked to add a classifier for a connection having a higher QoS than that being used by the Ethernet data flow with a classifier containing only the Ethernet MAC destination address field.
Test purpose	Check that the IUT: Transmits the data on the connection having the higher QoS.

TP ID	BS/CS/PS/CL/TX/BV-015
Reference	Clauses 5.2.4.2, 11.13.19.2, 11.13.19.3.4.9
Selection criteria	
Initial condition	IUT is initialized and a dynamic service is established with Ethernet data flow with a classifier only containing the Ethernet MAC source address field. The IUT is provoked to add a classifier for a connection having a higher QoS than that being used by the Ethernet data flow with a classifier containing only the Ethernet MAC source address field.
Test purpose	Check that the IUT: Transmits the data on the connection having the higher QoS.

TP ID	BS/CS/PS/CL/TX/BV-016
Reference	Clauses 5.2.4.2, 11.13.19.2, 11.13.19.3.4.10
Selection criteria	
Initial condition	IUT is initialized and a dynamic service is established with Ethernet data flow with a classifier only containing the Ethertype SAP field. The IUT is provoked to add a classifier for a connection having a higher QoS than that being used by the Ethernet data flow with a classifier containing only the Ethertype SAP field.
Test purpose	Check that the IUT: Transmits the data on the connection having the higher QoS.

TP ID	BS/CS/PS/CL/TX/BV-017
Reference	Clauses 5.2.4.2, 11.13.19.2, 11.13.19.3.4.8-10
Selection criteria	
Initial condition	IUT is initialized and a dynamic service is established with Ethernet data flow with all the Ethernet classifier fields: Ethernet source MAC address, Ethernet destination MAC address, and Ethertype SAP. The IUT is provoked to add a classifier matching all the Ethernet classifier fields for a connection having a higher QoS than that being used by the Ethernet data flow with all the Ethernet classifier fields.
Test purpose	Check that the IUT: Transmits the data on the connection having the higher QoS.

TP ID	BS/CS/PS/CL/TX/BV-018
Reference	Clauses 5.2.4.2, 11.13.19.2, 11.13.19.3.4.2
Selection criteria	
Initial condition	IUT is initialized and a dynamic service is established with Ethernet over IP data flow with a classifier only containing IP type of service. The IUT is provoked to add a classifier for a connection having a higher QoS than that being used by the Ethernet over IP data flow with a classifier containing only IP type of service.
Test purpose	Check that the IUT: Transmits the data on the connection having the higher QoS.

TP ID	BS/CS/PS/CL/TX/BV-019
Reference	Clauses 5.2.4.2, 11.13.19.2, 11.13.19.3.4.3
Selection criteria	
Initial condition	IUT is initialized and a dynamic service is established with Ethernet over IP data flow with a classifier only containing the IP protocol field. The IUT is provoked to add a classifier for a connection having a higher QoS than that being used by the Ethernet over IP data flow with a classifier containing only IP protocol field.
Test purpose	Check that the IUT: Transmits the data on the connection having the higher QoS.

TP ID	BS/CS/PS/CL/TX/BV-020
Reference	Clauses 5.2.4.2, 11.13.19.2, 11.13.19.3.4.4
Selection criteria	
Initial condition	IUT is initialized and a dynamic service is established with Ethernet over IP data flow with a classifier only containing the IP source address. The IUT is provoked to add a classifier for a connection having a higher QoS than that being used by the Ethernet over IP data flow with a classifier containing only IP source address.
Test purpose	Check that the IUT: Transmits the data on the connection having the higher QoS.

TP ID	BS/CS/PS/CL/TX/BV-021
Reference	Clauses 5.2.4.2, 11.13.19.2, 11.13.19.3.4.5
Selection criteria	
Initial condition	IUT is initialized and a dynamic service is established with Ethernet over IP data flow with a classifier only containing the IP destination address. The IUT is provoked to add a classifier for a connection having a higher QoS than that being used by the Ethernet over IP data flow with a classifier containing only IP destination address.
Test purpose	Check that the IUT: Transmits the data on the connection having the higher QoS.

TP ID	BS/CS/PS/CL/TX/BV-022
Reference	Clauses 5.2.4.2, 11.13.19.2, 11.13.19.3.4.6
Selection criteria	
Initial condition	IUT is initialized and a dynamic service is established with Ethernet over IP data flow with a classifier only containing the IP source port. The IUT is provoked to add a classifier for a connection having a higher QoS than that being used by the Ethernet over IP data flow with a classifier containing only IP source port.
Test purpose	Check that the IUT: Transmits the data on the connection having the higher QoS.

TP ID	BS/CS/PS/CL/TX/BV-023
Reference	Clauses 5.2.4.2, 11.13.19.2, 11.13.19.3.4.7
Selection criteria	
Initial condition	IUT is initialized and a dynamic service is established with Ethernet over IP data flow with a classifier only containing the IP destination port. The IUT is provoked to add a classifier for a connection having a higher QoS than that being used by the Ethernet over IP data flow with a classifier containing only IP destination port.
Test purpose	Check that the IUT: Transmits the data on the connection having the higher QoS.

TP ID	BS/CS/PS/CL/TX/BV-024
Reference	Clauses 5.2.4.2, 11.13.19.2, 11.13.19.3.4.2-7
Selection criteria	
Initial condition	IUT is initialized and a dynamic service is established with Ethernet over IP data flow with all the IP classifier fields: type of service, protocol, source address, destination address, source port, and destination port. The IUT is provoked to add a classifier matching all the IP classifier fields for a connection having a higher QoS than that being used by the Ethernet over IP data flow with all the IP classifier fields.
Test purpose	Check that the IUT: Transmits the data on the connection having the higher QoS.

TP ID	BS/CS/PS/CL/TX/BV-025
Reference	Clauses 5.2.4.2, 11.13.19.2, 11.13.19.3.4.8
Selection criteria	
Initial condition	IUT is initialized and a dynamic service is established with Ethernet over IP data flow with a classifier only containing the Ethernet MAC destination address field. The IUT is provoked to add a classifier for a connection having a higher QoS than that being used by the Ethernet over IP data flow with a classifier containing only the Ethernet MAC destination address field.
Test purpose	Check that the IUT: Transmits the data on the connection having the higher QoS.

TP ID	BS/CS/PS/CL/TX/BV-026
Reference	Clauses 5.2.4.2, 11.13.19.2, 11.13.19.3.4.9
Selection criteria	
Initial condition	IUT is initialized and a dynamic service is established with Ethernet over IP data flow with a classifier only containing the Ethernet MAC source address field. The IUT is provoked to add a classifier for a connection having a higher QoS than that being used by the Ethernet over IP data flow with a classifier containing only the Ethernet MAC source address field.
Test purpose	Check that the IUT: Transmits the data on the connection having the higher QoS.

TP ID	BS/CS/PS/CL/TX/BV-027
Reference	Clauses 5.2.4.2, 11.13.19.2, 11.13.19.3.4.10
Selection criteria	
Initial condition	IUT is initialized and a dynamic service is established with Ethernet over IP data flow with a classifier only containing the Ethertype SAP field. The IUT is provoked to add a classifier for a connection having a higher QoS than that being used by the Ethernet over IP data flow with a classifier containing only the Ethertype SAP field.
Test purpose	Check that the IUT: Transmits the data on the connection having the higher QoS.

TP ID	BS/CS/PS/CL/TX/BV-028
Reference	Clauses 5.2.4.2, 11.13.19.2, 11.13.19.3.4.8-10
Selection criteria	
Initial condition	IUT is initialized and a dynamic service is established with Ethernet over IP data flow with all the Ethernet classifier fields: Ethernet source MAC address, Ethernet destination MAC address, and Ethertype SAP. The IUT is provoked to add a classifier matching all the Ethernet classifier fields for a connection having a higher QoS than that being used by the Ethernet over IP data flow with all the Ethernet classifier fields.
Test purpose	Check that the IUT: Transmits the data on the connection having the higher QoS.

TP ID	BS/CS/PS/CL/TX/BV-029
Reference	Clauses 5.2.4.2, 11.13.19.2, 11.13.19.3.4.2-7
Selection criteria	
Initial condition	IUT is initialized and a dynamic service is established with Ethernet over IP data flow with all the IP and Ethernet classifier fields: type of service, protocol, source address, destination address, source port, destination port, Ethernet source MAC address, Ethernet destination MAC address, and Ethertype SAP. The IUT is provoked to add a classifier matching all the IP and Ethernet classifier fields for a connection having a higher QoS than that being used by the Ethernet over IP data flow with all the IP and Ethernet classifier fields.
Test purpose	Check that the IUT: Transmits the data on the connection having the higher QoS.

5.2.2   DLC MAC Sublayer (MS)

5.2.2.1   MAC PDU Construction (CO)

TP ID	BS/MS/CO/BV-000
Reference	Clause 6.3.3.7
Selection criteria	
Initial condition	Allocated space within a data burst cannot be used.
Test purpose	Check that the IUT: Initializes the unused space to a known state; i.e. by setting each unused byte to the stuff byte value 0xFF.

TP ID	BS/MS/CO/BV-001
Reference	Clause 6.3.3.7, table 343
Selection criteria	
Initial condition	Allocated space within a data burst cannot be used and its size at least the size of a MAC header.
Test purpose	Check that the IUT: Initializes the unused space to a known state; i.e. by setting each unused byte to the stuff byte value 0xFF; or formats the unused space as a MAC PDU. In this case, the MAC CID field is the value of the Padding CID, the CI, EC, HT, and Type fields are set to zero, the length field is set to the number of unused bytes including the MAC header size for creating the padding MAC PDU, and the HCS is calculated in the usual way.

TP ID	BS/MS/CO/BV-002
Reference	Clause 6.3.2.1.1, table 5
Selection criteria	
Initial condition	
Test purpose	Check that the IUT: Calculates the HCS value for the first five bytes of the cell header and inserts the results into the HCS field. The HCS is the remainder of the division (Modulo 2) by the generator polynomial $g(D) = D^8 + D^2 + D + 1$ multiplied by the content of the header excluding the HCS field.

TP ID	BS/MS/CO/BV-003
Reference	Clause 6.3.2.2
Selection criteria	
Initial condition	Fragmentation and Grant Management subheaders are in the same PDU.
Test purpose	Check that the IUT: Constructs the MAC PDU with the Grant Management subheader first followed by the Fragmentation subheader.

TP ID	BS/MS/CO/BV-004
Reference	Clause 6.3.2.2
Selection criteria	
Initial condition	The Mesh and other subheaders are in the same PDU.
Test purpose	Check that the IUT: Constructs the MAC PDU with Mesh subheader always first in subheader order.

TP ID	BS/MS/CO/BV-005
Reference	Clause 6.3.2.2
Selection criteria	
Initial condition	The ARQ_ACK Allocation subheader and other per-PDU subheaders are in the same PDU.
Test purpose	Check that the IUT: Constructs the MAC PDU with ARQ_ACK Allocation subheader as the last per-PDU subheader.

TP ID	BS/MS/CO/BV-006
Reference	Clause 6.3.2.2
Selection criteria	
Initial condition	
Test purpose	Check that the IUT: Does not construct MAC PDUs with Packing and Fragmentation subheaders in the same MAC PDU.

TP ID	BS/MS/CO/BV-007
Reference	Clause 6.3.2.2
Selection criteria	
Initial condition	Per-PDU subheaders and per-SDU subheaders are in the same MAC PDU
Test purpose	Check that the IUT: Constructs the PDU with the per-PDU subheaders always before the first per-SDU subheader.

TP ID	BS/MS/CO/BV-008
Reference	Clause 6.3.2.2.4
Selection criteria	
Initial condition	ARQ is enabled. Packing is in use.
Test purpose	Check that the IUT: Transports the ARQ Feedback Payload as the first packed payload.

TP ID	BS/MS/CO/BV-009
Reference	Clause 6.3.2.3
Selection criteria	
Initial condition	
Test purpose	Check that the IUT: Never fragments nor packs MAC Management messages on the Basic, Broadcast, and Initial Ranging Management connections.

TP ID	BS/MS/CO/BV-010
Reference	Clause 6.3.2.3
Selection criteria	
Initial condition	The TE has transmitted a MAC management message having a "reserved" Type value.
Test purpose	Check that the IUT: Silently discards the message.

TP ID	BS/MS/CO/BV-011
Reference	Clause 6.3.2.3
Selection criteria	
Initial condition	The TE has transmitted a MAC management message not containing all required parameters.
Test purpose	Check that the IUT: Silently discards the message.

TP ID	BS/MS/CO/BV-012
Reference	Clause 6.3.2.3
Selection criteria	
Initial condition	The TE has transmitted a MAC management message containing erroneously encoded parameters.
Test purpose	Check that the IUT: Silently discards the message.

5.2.2.2   Common Message Behaviour for both PMP and Mesh (MP)

5.2.2.2.1   Adaptive Antenna Support - AAS (AA)

TP ID	BS/MS/MP/AA/BV-000
Reference	Clause 6.3.7.6.4
Selection criteria	PIC_AAS
Initial condition	IUT is ranging.
Test purpose	Check that the IUT: Tunes the adaptive array during the ranging process.

TP ID	BS/MS/MP/AA/BV-001
Reference	Clause 6.3.7.6.5
Selection criteria	PIC_AAS AND PIC_FDD
Initial condition	The IUT is operational. The TE is in AAS mode and has accomplished network entry.
Test purpose	Check that the IUT: To determine channel state, transmits the AAS-FBACK-REQ message and an uplink allocation for TE to respond.

TP ID	BS/MS/MP/AA/BV-002
Reference	Clause 6.3.7.6.5
Selection criteria	PIC_AAS AND PIC_BS_implement_AAS_in_TDD (see clause 6.3.2.3.39)
Initial condition	The IUT is operational. The TE is in AAS mode and has accomplished network entry.
Test purpose	Check that the IUT: To determine channel state, transmits the AAS-FBACK-REQ message and an uplink allocation for TE to respond.

TP ID	BS/MS/MP/AA/BV-003
Reference	Clause 10.4, table 343
Selection criteria	PIC_AAS
Initial condition	IUT begins initial ranging for TE
Test purpose	Check that the IUT: Uses the AAS initial ranging CID (0xFEFF) to allocate an Initial Ranging period for the TE.

5.2.2.2.2 Additional Privacy Features (AP)

5.2.2.2.2.1 Authentication (ATH)

5.2.2.2.2.1.1 Uplink (UL)

TP ID	BS/MS/MP/AP/ATH/UL/BV-000
Reference	Clauses 7.4.1.3, 7.5.4.3
Selection criteria	
Initial condition	The IUT is operational. One AK is active for the IUT. For receiving the following messages: DSx-REQ, DSx-RSP, DSx-ACK, REG-REQ, and TFTP-CPLT.
Test purpose	Check that the IUT: Uses the active AK associated with the AK Sequence number given in the received tuple to calculate the HMAC-Digest and to authenticate the messages.

TP ID	BS/MS/MP/AP/ATH/UL/BV-001
Reference	Clauses 7.4.1.3, 7.5.4.3
Selection criteria	
Initial condition	The IUT is operational. Two AKs are active for the IUT. For receiving the following messages: DSx-REQ, DSx-RSP, DSx-ACK, REG-REQ, and TFTP-CPLT with the older AK Sequence Number in the tuple.
Test purpose	Check that the IUT: Uses the active AK associated with the AK Sequence number given in the received tuple to calculate the HMAC-Digest. If the message requires a BS reply, check that the reply message has an HMAC Tuple with an HMAC-Digest and KEK calculated with HMAC_KEY_D using the older AK and the older AK Sequence Number.

TP ID	BS/MS/MP/AP/ATH/UL/BV-002
Reference	Clauses 7.4.1.3, 7.5.4.3
Selection criteria	
Initial condition	The IUT is operational. Two AKs are active for the IUT. For receiving the following messages: DSx-REQ, DSx-RSP, DSx-ACK, REG-REQ, and TFTP-CPLT with the newer AK Sequence Number in the tuple.
Test purpose	Check that the IUT: Uses the active AK associated with the AK Sequence number given in the received tuple to calculate the HMAC-Digest. If the message requires a BS reply, check that the reply message has an HMAC Tuple with an HMAC-Digest and KEK calculated with HMAC_KEY_D using the newer AK and a new AK Sequence Number calculated as (old AK Sequence Number + 1) modulo 16 (a 4-bit AK sequence number).

TP ID	BS/MS/MP/AP/ATH/UL/BV-003
Reference	Clauses 7.4.1.3, 7.5.4.3
Selection criteria	
Initial condition	The IUT is operational. One AK is active for the IUT. The tester transmitted a valid Auth Request message in response to which the IUT transmitted a valid Auth Reply message with a new AK. On receiving the following messages: DSx-REQ, DSx-RSP, DSx-ACK, REG-REQ, and TFTP-CPLT with the newer AK Sequence Number in the tuple.
Test purpose	Check that the IUT: Treats the received message as an implicit acknowledgement of the new AK and verifies the HMAC-Digest of the HMAC Tuple in the message with the HMAC_KEY_U associated with the newest AK Key Sequence Number in the same tuple. If the message requires a BS reply, check that the reply message has an HMAC Tuple with an HMAC-Digest and KEK calculated with HMAC_KEY_D using the newer AK and a new AK Sequence Number calculated as (old AK Sequence Number + 1) modulo 16 (a 4-bit AK sequence number).

5.2.2.2.2.1.2   Downlink (DL)

TP ID	BS/MS/MP/AP/ATH/DL/BV-000
Reference	Clauses 7.4.1.3, 7.5.4.3
Selection criteria	
Initial condition	The IUT is operational. One AK is active for the IUT. For transmitting the following messages: DSx-REQ, DSx-RSP, DSx-ACK, REG-RSP, RES-CMD, and DREG-CMD
Test purpose	Check that the IUT: Uses the active AK to calculate the HMAC-Digest in the HMAC tuple and places the active AK Sequence Number into the tuple.

5.2.2.2.2.2   Cryptography (CRY)

5.2.2.2.2.2.1   Downlink (DL)

TP ID	BS/MS/MP/AP/CRY/DL/BV-000
Reference	Clauses 7.5 and 7.5.1.1, tables 373 and 378
Selection criteria	
Initial condition	The IUT is operational. During successful SS authorization and key exchange, the IUT has transmitted an SA-Descriptor subattribute with Cryptographic suite identifier equal to 0x01 for CBC-Mode, 56-bit DES for a given SA.
Test purpose	Check that the IUT: For the given SA, uses the CBC mode of the DES algorithm to encrypt the MAC DATA PDU payloads.

TP ID	BS/MS/MP/AP/CRY/DL/BV-001
Reference	Clauses 7.5 and 7.5.1.2, tables 373 and 378
Selection criteria	
Initial condition	The IUT is operational. During successful SS authorization and key exchange, the IUT has transmitted an SA-Descriptor subattribute with Cryptographic suite identifier equal to 0x02 for CCM-Mode, AES for a given SA.
Test purpose	Check that the IUT: For the given SA, uses the CCM mode of the AES algorithm to encrypt the MAC DATA PDU payloads.

TP ID	BS/MS/MP/AP/CRY/DL/BV-002
Reference	Tables 373 and 378
Selection criteria	
Initial condition	The IUT is operational. During successful SS authorization and key exchange, the IUT has transmitted an SA-Descriptor subattribute with Cryptographic suite identifier equal to 0x00 for a given SA.
Test purpose	Check that the IUT: For the given SA, does not encrypt the MAC DATA PDU payloads.

TP ID	**BS/MS/MP/AP/CRY/DL/BV-003**
Reference	Clauses 7.5, 7.5.1.1, 11.9.8, 11.9.9
Selection criteria	PMP_only
Initial condition	The IUT is operational. The IUT is encrypting downlink MAC DATA PDU payloads.
Test purpose	Check that the IUT: Uses a CBC calculated by XOR-ing the CBC-IV transmitted in the TEK parameters subattributes with the right-justified PHY synchronization field of the latest DL-MAP.

TP ID	**BS/MS/MP/AP/CRY/DL/BV-004**
Reference	Clauses 7.5, 7.5.1.1
Selection criteria	
Initial condition	The IUT is operational. The IUT is encrypting downlink MAC DATA PDU payloads. The final block of plaintext is of n bits where n is less than 64 bits.
Test purpose	Check that the IUT: DES encrypts the next-to-last cipher block text a second time using the ECB mode, XORs the most significant n bits of the result with the final n bits of the payload for the short final cipher block.

TP ID	**BS/MS/MP/AP/CRY/DL/BV-005**
Reference	Clauses 7.5, 7.5.1.1
Selection criteria	
Initial condition	The IUT is operational. The IUT is encrypting downlink MAC DATA PDU payloads. The entire plaintext is of n bits where n is less than 64 bits.
Test purpose	Check that the IUT: DES encrypts the IV, then XORs the most significant n bits of the cipher text with the n bits of the payload to generate the short cipher block.

TP ID	**BS/MS/MP/AP/CRY/DL/BV-006**
Reference	Clauses 7.5, 7.5.2.1
Selection criteria	
Initial condition	The IUT is Key Exchanging. During authorization, the tester has transmitted 0x01 in the TEK encryption algorithm identifiers of the Cryptographic-Suite-List of the Security-Capabilities in the Auth Request message. The IUT has now received a Key Request message.
Test purpose	Check that the IUT: Transmits a Key Reply message with the TEK in the TEK-parameters subattributes encrypted using two-key 3-DES in the EDE mode.

TP ID	**BS/MS/MP/AP/CRY/DL/BV-007**
Reference	Clauses 7.5, 7.5.2.2
Selection criteria	
Initial condition	The IUT is Key Exchanging. During authorization, the tester has transmitted 0x02 in the TEK encryption algorithm identifiers of the Cryptographic-Suite-List of the Security-Capabilities in the Auth Request message. The IUT has received a Key Request message.
Test purpose	Check that the IUT: Transmits a Key Reply message with the TEK in the TEK-parameters subattributes encrypted using the RSA method.

TP ID	**BS/MS/MP/AP/CRY/DL/BV-008**
Reference	Clauses 7.5, 7.5.2.2
Selection criteria	
Initial condition	The IUT is Key Exchanging. During authorization, the tester has transmitted 0x03 in the TEK encryption algorithm identifiers of the Cryptographic-Suite-List of the Security-Capabilities in the Auth Request message. The IUT has received a Key Request message.
Test purpose	Check that the IUT: Transmits a Key Reply message with the TEK-128 in the TEK-parameters subattributes encrypted using the 128-bit AES in ECB mode method.

5.2.2.2.2.2   Uplink (UL)

TP ID	BS/MS/MP/AP/CRY/UL/BV-000
Reference	Clauses 7.5, 7.5.1.1, 11.9.8, 11.9.9
Selection criteria	PMP_only
Initial condition	The IUT is operational. The IUT is decrypting uplink MAC DATA PDU payloads.
Test purpose	Check that the IUT: Uses a CBC calculated by XOR-ing the CBC-IV transmitted in the TEK parameters subattributes with the PHY synchronization field of the DL-MAP in effect for the UL-MAP.

TP ID	BS/MS/MP/AP/CRY/UL/BV-001
Reference	Clauses 7.5, 7.5.1.1
Selection criteria	
Initial condition	The IUT is operational. The IUT is decrypting uplink MAC DATA PDU payloads. The final block of plaintext is of n bits where n is less than 64 bits.
Test purpose	Check that the IUT: DES decrypts the next-to-last cipher block text using the ECB mode, XORs the most significant n bits with the short final cipher block in order to recover the short final cleartext block.

TP ID	BS/MS/MP/AP/CRY/UL/BV-002
Reference	Clauses 7.5, 7.5.1.1
Selection criteria	
Initial condition	The IUT is operational. The IUT is decrypting uplink MAC DATA PDU payloads. The entire plaintext is of n bits where n is less than 64 bits.
Test purpose	Check that the IUT: Correctly decrypts the entire plaintext.

TP ID	BS/MS/MP/AP/CRY/UL/BV-003
Reference	Clauses 7.5.3, 7.5.4.3
Selection criteria	PMP only
Initial condition	The IUT is authenticating the Key Reply, Key Reject, TEK Invalid, and SA Add Attribute messages with HMAC-Digest.
Test purpose	Check that the IUT: Uses HMAC_KEY_D to calculate the HMAC-Digest over the entire MAC management message with the exception of the HMAC-Digest and HMAC Tuple attributes.

5.2.2.2.2.3   SS Reauthorization (SSR)

TP ID	BS/MS/MP/AP/SSR/BV-000
Reference	Clause 7.2.1
Selection criteria	
Initial condition	IUT is operational.
Test purpose	Check that the IUT: Simultaneously supports two active AK's during re-authorization.

TP ID	BS/MS/MP/AP/SSR/BV-001
Reference	Clause 7.4.1.2
Selection criteria	
Initial condition	The IUT is operational. The tester transmits an Auth Request when a single AK is active.
Test purpose	Check that the IUT: Transmits an Auth Reply with a second active AK that has a key sequence number one greater (modulo 16) than the existing AK's and that the active lifetime of this second AK is the remaining lifetime of the first AK plus the AK-Lifetime parameter and with a SA whose SAID is identical to the Basic CID in the Auth Request message.

TP ID	BS/MS/MP/AP/SSR/BV-002
Reference	Clause 7.4.1.2
Selection criteria	
Initial condition	The IUT is operational. The tester transmits an Auth Request when both AKs are active.
Test purpose	Check that the IUT: Transmits an Auth Reply with the new of the two active keys and with a SA whose SAID is identical to the Basic CID in the Auth Request message.

TP ID	BS/MS/MP/AP/SSR/BV-003
Reference	Clause 7.2.1, figure 131, table 131
Selection criteria	
Initial condition	IUT is operational. Static SAs are provisioned. The tester transmits a valid Auth Request message during the Authorization Grace period.
Test purpose	Check that the IUT: To reauthorize, transmits a valid Auth Reply with a SA whose SAID is identical to the Basic CID in the Auth Request message and a SA for each provisioned static SA.

TP ID	BS/MS/MP/AP/SSR/BV-004
Reference	Clause 7.4.1.1
Selection criteria	
Initial condition	The BS is operational. The tester fails to reauthorize before the expiration of the current AK.
Test purpose	Check that the IUT: Considers the tester unauthorized, holds no active AKs for the tester, and removes all TEKs associated with the tester's Primary SA.

TP ID	BS/MS/MP/AP/SSR/BV-005
Reference	Clause 7.2.1, figure 131, table 131, clause 11.9.10, table 371
Selection criteria	
Initial condition	IUT is operational. IUT is not authorized for basic unicast service. The tester transmits an Auth Info message and then an Auth Request message.
Test purpose	Check that the IUT: Transmits an Auth Reject message with the error code set either to No Information or Unauthorized SS.

TP ID	BS/MS/MP/AP/SSR/BV-006
Reference	Clause 7.2.1, figure 131, table 131, clause 11.9.10, table 371
Selection criteria	
Initial condition	IUT is operational. The tester transmits an Auth Info message and then an Auth Request message. The Auth Request message contains an SAID that is not the same as the Basic CID that the tester received previously.
Test purpose	Check that the IUT: Transmits an Auth Reject message with the error code set either to No Information or Unauthorized SAID.

TP ID	BS/MS/MP/AP/SSR/BV-007
Reference	Clause 7.2.1, figure 131, table 131, clause 11.9.10, table 371
Selection criteria	Permanent Authorization Failure transmitted in error-code.
Initial condition	IUT is operational. The tester transmits a valid Auth Info message and then an Auth Request message. The Auth Request contains an SS certificate from an unknown manufacturer.
Test purpose	Check that the IUT: Transmits an Auth Reject message with the error code set to Permanent Authorization Failure.
Parameter values	BS may transmit No Information in error-code. Cover with a configuration parameter.

TP ID	BS/MS/MP/AP/SSR/BV-008
Reference	Clause 7.2.1, figure 131, table 131, clause 11.9.10, table 371
Selection criteria	Permanent Authorization Failure transmitted in error-code.
Initial condition	IUT is operational. The tester transmits a valid Auth Info message and then an Auth Request message. The Auth Request contains an SS certificate with an invalid signature.
Test purpose	Check that the IUT: Transmits an Auth Reject message with the error code set to Permanent Authorization Failure.
Parameter values	BS may transmit No Information in error-code. Cover with a configuration parameter.

TP ID	BS/MS/MP/AP/SSR/BV-009
Reference	Clause 7.2.1, figure 131, table 131, clause 11.9.10, table 371
Selection criteria	Permanent Authorization Failure transmitted in error-code.
Initial condition	IUT is operational. The tester transmits a valid Auth Info message and then an Auth Request message. The Auth Request contains incorrect ASN.1 DER encoding.
Test purpose	Check that the IUT: Transmits an Auth Reject message with the error code set to Permanent Authorization Failure.
Parameter values	BS may transmit No Information in error-code. Cover with a configuration parameter.

TP ID	BS/MS/MP/AP/SSR/BV-010
Reference	Clause 7.2.1, figure 131, table 131, clause 11.9.10, table 371
Selection criteria	Permanent Authorization Failure transmitted in error-code.
Initial condition	IUT is operational. The tester transmits a valid Auth Info message and then an Auth Request message. The Auth Request contains an SS certificate on the "hot" list.
Test purpose	Check that the IUT: Transmits an Auth Reject message with the error code set to Permanent Authorization Failure.
Parameter values	BS may transmit No Information in error-code. Cover with a configuration parameter.

TP ID	BS/MS/MP/AP/SSR/BV-011
Reference	Clause 7.2.1, figure 131, table 131, clause 11.9.10, table 371
Selection criteria	Permanent Authorization Failure transmitted in error-code.
Initial condition	IUT is operational. The tester transmits a valid Auth Info message and then an Auth Request message. The Auth Request contains an SS certificate with inconsistencies between the certificate data and in accompanying PKM attribute data.
Test purpose	Check that the IUT: Transmits an Auth Reject message with the error code set to Permanent Authorization Failure.
Parameter values	BS may transmit No Information in error-code. Cover with a configuration parameter.

TP ID	BS/MS/MP/AP/SSR/BV-012
Reference	Clause 7.2.1, figure 131, table 131, clause 11.9.10, table 371
Selection criteria	Permanent Authorization Failure transmitted in error-code.
Initial condition	IUT is operational. The tester transmits a valid Auth Info message and then an Auth Request message. The Auth Request contains only incompatible Security Capabilities.
Test purpose	Check that the IUT: Transmits an Auth Reject message with the error code set to Permanent Authorization Failure.
Parameter values	BS may transmit No Information in error-code. Cover with a configuration parameter.

TP ID	BS/MS/MP/AP/SSR/BV-013
Reference	Clause 7.2.1, figure 131, table 131, clause 11.9.10, table 371
Selection criteria	
Initial condition	IUT is operational. SS is no longer authorized for basic unicast service. The tester transmits an Auth Request message.
Test purpose	Check that the IUT: Transmits an Auth Reject message with the error code set either to No Information or Unauthorized SS.

TP ID	BS/MS/MP/AP/SSR/BV-014
Reference	Clause 7.2.1, figure 131, table 131, clause 11.9.10, table 371
Selection criteria	
Initial condition	IUT is operational. The tester transmits an Auth Request message. The Auth Request message contains an SAID that is not the same as the Basic CID that the tester received previously.
Test purpose	Check that the IUT: Transmits an Auth Reject message with the error code set either to No Information or Unauthorized SAID.

TP ID	**BS/MS/MP/AP/SSR/BV-015**
Reference	Clauses 7.4.1.3, 7.5.4.3
Selection criteria	
Initial condition	The IUT is operational. One AK is active for the IUT. The tester transmitted a valid Auth Request message in response to which the IUT transmitted a valid Auth Reply message with a new AK. The tester then transmits a Key Request with the new AK's Sequence Number.
Test purpose	Check that the IUT: Treats the Key Request as an implicit acknowledgement of the new AK and verifies the HMAC-Digest in the Key Request with the HMAC_KEY_U associated with the newest AK Key Sequence Number. The IUT then transmits a valid Key Reply message with an HMAC-Digest and KEK calculated with HMAC_KEY_D using the newer AK and a new AK Sequence Number calculated as (old AK Sequence Number + 1) modulo 16 (a 4-bit AK sequence number).

5.2.2.2.2.4   TEK Update (TKU)

TP ID	**BS/MS/MP/AP/TKU/BV-000**
Reference	Clause 7.4.2.1
Selection criteria	
Initial condition	IUT is operational. Two keys are active.
Test purpose	Check that the IUT: Deactivates the older key once it has expired.

5.2.2.2.2.5   TEK Exchange (TKX)

TP ID	**BS/MS/MP/AP/TKX/BV-000**
Reference	Clauses 7.4.1.3, 7.5.4.3
Selection criteria	
Initial condition	Two AKs are active for the IUT. The tester transmits a Key Request with the oldest active AK Key Sequence Number.
Test purpose	Check that the IUT: IUT verifies the HMAC-Digest in the Key Request with the HMAC_KEY_U associated with the given AK Key Sequence Number and transmits a Key Reply message with HMAC-Digest using HMAC-KEY-D and KEK derived from the older AK.

TP ID	**BS/MS/MP/AP/TKX/BV-001**
Reference	Clauses 7.4.1.3, 7.5.4.3
Selection criteria	
Initial condition	Two AKs are active for the IUT. The tester transmits a Key Request with the newest active AK Key Sequence Number.
Test purpose	Check that the IUT: IUT verifies the HMAC-Digest in the Key Request with the HMAC_KEY_U associated with the given AK Key Sequence Number and transmits a Key Reply message with HMAC-Digest using HMAC-KEY-D and KEK derived from the newer AK with a new AK Sequence Number calculated as (old AK Sequence Number + 1) modulo 16 (a 4-bit AK sequence number).

TP ID	**BS/MS/MP/AP/TKX/BV-002**
Reference	Clauses 7.4.1.3, 7.5.4.3
Selection criteria	
Initial condition	One AK is active for the IUT. The tester has transmitted a valid Key Request.
Test purpose	Check that the IUT: Transmits a valid Key Reply message with an HMAC-Digest calculated with HMAC_KEY_D using the current AK and AK Key Sequence Number.

TP ID	**BS/MS/MP/AP/TKX/BV-003**
Reference	Clauses 7.4.1.3, 7.5.4.3
Selection criteria	
Initial condition	One AK is active for the IUT. The tester transmitted a valid Auth Request message in response to which the IUT transmitted a valid Auth Reply message with a new AK. The tester then transmits a Key Request with the older AK's Sequence Number.
Test purpose	Check that the IUT: Transmits a valid Key Reply message with an HMAC-Digest calculated with HMAC_KEY_D and KEK using the older AK and AK Key Sequence Number.

5.2.2.2.3   ARQ (ARQ)

TP ID	BS/MS/MP/ARQ/BV-000
Reference	Clause 11.13.18.1
Selection criteria	
Initial condition	IUT is operational. The TE transmits a DSA-REQ with the ARQ Enable TLV set to ARQ Not Requested (0) to establish a service flow. The IUT accepts the DSA transaction.
Test purpose	Check that the IUT: Does not implement ARQ for the service flow.

TP ID	BS/MS/MP/ARQ/BV-001
Reference	Clause 11.13.18.1
Selection criteria	
Initial condition	IUT is operational. The IUT transmits a DSA-REQ with the ARQ Enable TLV set to ARQ Requested (1) to establish a service flow. The TE transmits a DSA-RSP with the ARQ Enable TLV set to ARQ Not Accepted (0). The IUT accepts the DSA transaction
Test purpose	Check that the IUT: Does not implement ARQ for the service flow.

TP ID	BS/MS/MP/ARQ/BV-002
Reference	Clause 6.3.3.4.2
Selection criteria	
Initial condition	ARQ and packing enabled on the connection. TE transmits Packing subheaders in a MAC PDU. A BSN in the packing subheader indicates that fragments are missing.
Test purpose	Check that the IUT: Uses the BSN to identify and transmit lost fragments.

TP ID	BS/MS/MP/ARQ/BV-003
Reference	Clause 6.3.3.4.3
Selection criteria	
Initial condition	ARQ enabled on the connection. The TE transmits a fragmented and packed ARQ Feedback Payload.
Test purpose	Check that the IUT: Ignores the FSN/BSN and processes the ARQ Feedback Payload.

TP ID	BS/MS/MP/ARQ/BV-004
Reference	Clause 6.3.3.4.3
Selection criteria	
Initial condition	ARQ not enabled on the connection. The TE transmits a fragmented and packed ARQ Feedback Payload on the connection.
Test purpose	Check that the IUT: Ignores the FSN/BSN and processes the ARQ Feedback Payload.

TP ID	BS/MS/MP/ARQ/BV-005
Reference	Clause 6.3.3.4.3
Selection criteria	
Initial condition	
Test purpose	Check that the IUT: When transmitting the ARQ Feedback Payload, places only one ARQ Feedback Payload within a single MAC PDU, places the ARQ Feedback Payload as the first packed payload, and sets the FC bits to 00.

TP ID	BS/MS/MP/ARQ/BV-006
Reference	Clause 6.3.4.5
Selection criteria	
Initial condition	ARQ is enabled for the connection
Test purpose	Check that the IUT: Uses CRC-32 for error detection in MAC PDUs on the connection.

TP ID	BS/MS/MP/ARQ/BV-007
Reference	Clause 11.13.18.2
Selection criteria	
Initial condition	IUT is operational. The IUT transmits a DSA-REQ with an ARQ_WINDOW_SIZE parameter. The TE transmits a DSA-RSP with an ARQ_WINDOW_SIZE parameter smaller than that in the DSA-REQ.
Test purpose	Check that the IUT: Implements the smaller value as the ARQ_WINDOW_SIZE.

TP ID	BS/MS/MP/ARQ/BV-008
Reference	Clause 11.13.18.2
Selection criteria	
Initial condition	IUT is operational. The IUT transmits a DSA-REQ with an ARQ_WINDOW_SIZE parameter. The TE transmits a DSA-RSP with an ARQ_WINDOW_SIZE parameter larger than that in the DSA-REQ.
Test purpose	Check that the IUT: Implements the smaller value as the ARQ_WINDOW_SIZE.

TP ID	BS/MS/MP/ARQ/BV-009
Reference	Clause 11.13.18.3
Selection criteria	
Initial condition	IUT is operational. The TE transmits a DSA-REQ with appropriate ARQ_RETRY_TIMEOUT parameters depending on the service flow direction. The TE transmits a DSA-RSP with its appropriate ARQ_RETRY_TIMEOUT parameters. The transaction is successful.
Test purpose	Check that the IUT: Implements ARQ_RETRY_TIMEOUT as the sum of the parameters TRANSMITTER_DELAY and RECEIVER_DELAY.

TP ID	BS/MS/MP/ARQ/BV-010
Reference	Clause 11.13.18.4
Selection criteria	
Initial condition	IUT is operational. The TE transmits a DSA-REQ with the ARQ_BLOCK_LIFETIME parameter set to 0. The transaction is successful.
Test purpose	Check that the IUT: Handles ARQ_BLOCK_LIFETIME as infinite.

TP ID	BS/MS/MP/ARQ/BV-011
Reference	Clause 11.13.18.7
Selection criteria	
Initial condition	IUT is operational. The TE transmits a DSA-REQ with the ARQ_RX_PURGE_TIMEOUT parameter set to 0. The transaction is successful.
Test purpose	Check that the IUT: Handles ARQ_RX_PURGE_TIMEOUT as infinite.

TP ID	BS/MS/MP/ARQ/BV-012
Reference	Clause 11.13.18.8
Selection criteria	
Initial condition	IUT is operational. The TE transmits a DSA-REQ message with an ARQ_BLOCK_SIZE value. The transaction is successful.
Test purpose	Check that the IUT: Transmits a DSA-RSP message with an ARQ_BLOCK_SIZE value less than or equal to that in the DSA-REQ message and that the IUT's ARQ_BLOCK_SIZE during service flow is the value in the DSA-RSP message.

TP ID	BS/MS/MP/ARQ/BV-013
Reference	Clause 11.13.18.8
Selection criteria	
Initial condition	IUT is operational. The TE transmits a DSA-REQ message. The ARQ_BLOCK_SIZE parameter is absent. The transaction is successful.
Test purpose	Check that the IUT: Transmits a DSA-RSP message with an ARQ_BLOCK_SIZE value less than or equal to the maximum ARQ_BLOCK_SIZE value and that the IUT's ARQ_BLOCK_SIZE during service flow is the value in the DSA-RSP message.

5.2.2.2.3.1   Reset (RE)

TP ID	BS/MS/MP/ARQ/RE/BV-000
Reference	Clause 6.3.4.6.2, figure 34
Selection criteria	
Initial condition	An ARQ connection is established and the IUT is the transmitter on this connection. The IUT transmits ARQ blocks. The TE starts ARQ_SYNC_LOSS_TIMEOUT and never ACKS block BSN_{n+1} despite the IUT's repeated retransmissions.
Test purpose	Check that the IUT: Transmits an ARQ Reset message Type 0x0 (Request) after expiration of ARQ_SYNC_LOSS_TIMEOUT and stops transmitting on the connection.

TP ID	BS/MS/MP/ARQ/RE/BV-001
Reference	Clause 6.3.4.6.2, figure 34
Selection criteria	
Initial condition	An ARQ connection is established and the IUT is the transmitter on this connection. The IUT transmits ARQ blocks. The TE starts ARQ_SYNC_LOSS_TIMEOUT and never ACKS block BSN_{n+1} despite the IUT's repeated retransmissions. The IUT then transmits an ARQ Reset message Type 0x0 (Request) after expiration of ARQ_SYNC_LOSS_TIMEOUT and stops transmitting on the connection. The TE then transmits an ARQ Reset message Type 0x1 (Responder Ack).
Test purpose	Check that the IUT: Resumes transmitting ARQ blocks with the first BSN = 0.
Note	ARQ_WINDOW_START = 0 implies that BSN = 0.

TP ID	BS/MS/MP/ARQ/RE/BV-002
Reference	Clause 6.3.4.6.2, figure 34
Selection criteria	
Initial condition	An ARQ connection is established and the IUT is the transmitter on this connection. The IUT transmits ARQ blocks. The TE starts ARQ_SYNC_LOSS_TIMEOUT and never ACKS block BSN_{n+1} despite the IUT's repeated retransmissions. The IUT then transmits an ARQ Reset message Type 0x0 (Request) after expiration of ARQ_SYNC_LOSS_TIMEOUT, stops transmitting on the connection, and starts T22. The TE does not respond to the ARQ Reset message.
Test purpose	Check that the IUT: Upon expiration of T22, the IUT retransmits the ARQ Reset message Type 0x0.

TP ID	BS/MS/MP/ARQ/RE/BV-003
Reference	Clause 6.3.4.6.2, figure 34
Selection criteria	
Initial condition	An ARQ connection is established and the IUT is the transmitter on this connection. The IUT transmits ARQ blocks. The TE starts ARQ_SYNC_LOSS_TIMEOUT and never ACKS block BSN_{n+1} despite the IUT's repeated retransmissions. The IUT then transmits an ARQ Reset message Type 0x0 (Request) after expiration of ARQ_SYNC_LOSS_TIMEOUT, stops transmitting on the connection, and starts T22. The TE does not respond to the ARQ Reset message.
Test purpose	Check that the IUT: Each time T22 expires, the IUT retransmits the ARQ Reset message Type 0x0 for T22_retries, and then re-initializes the DLC MAC layer.
Note	T22_retries is a vendor specific value.

TP ID	BS/MS/MP/ARQ/RE/BV-004
Reference	Clause 6.3.4.6.2, figure 34
Selection criteria	
Initial condition	An ARQ connection is established and the IUT is the receiver on this connection. The TE transmits ARQ blocks. The TE then transmits an ARQ Reset message Type 0x0 and stops transmitting ARQ blocks on the connection.
Test purpose	Check that the IUT: Transmits an ARQ Reset message Type 0x1 (Responder Ack)

TP ID	BS/MS/MP/ARQ/RE/BV-005
Reference	Clause 6.3.4.6.2, figure 34
Selection criteria	
Initial condition	An ARQ connection is established and the IUT is the receiver on this connection. The TE transmits ARQ blocks. The TE then transmits an ARQ Reset message Type 0x0 and stops transmitting ARQ blocks on the connection. The IUT then transmits an ARQ Reset message Type 0x1 (Responder Ack). Upon receiving the ARQ Reset message Type 0x1, the TE transmits ARQ blocks starting with a BSN = 0.
Test purpose	Check that IUT: Acknowledges the ARQ blocks received starting with BSN = 0.

TP ID	BS/MS/MP/ARQ/RE/BV-006
Reference	Clause 6.3.4.6.2, figure 35
Selection criteria	
Initial condition	An ARQ connection is established and the IUT is the transmitter on this connection. The IUT transmits ARQ blocks. The TE then transmits an ARQ Reset message Type 0x0 (Initiator).
Test purpose	Check that the IUT: Stops transmitting ARQ blocks and transmits an ARQ Reset message Type 0x1 (Responder Ack).

TP ID	BS/MS/MP/ARQ/RE/BV-007
Reference	Clause 6.3.4.6.2, figure 35
Selection criteria	
Initial condition	An ARQ connection is established and the IUT is the transmitter on this connection. The IUT transmits ARQ blocks. The TE then transmits an ARQ Reset message Type 0x0 (Initiator). The IUT stops transmitting ARQ blocks and transmits an ARQ Reset message Type 0x1 (Responder Ack). The TE then transmits an ARQ Reset message Type 0x2 (Confirmation).
Test purpose	Check that the IUT: Begins transmitting ARQ blocks with the first block's BSN = 0.

TP ID	BS/MS/MP/ARQ/RE/BV-008
Reference	Clause 6.3.4.6.2, figure 35
Selection criteria	
Initial condition	An ARQ connection is established and the IUT is the transmitter on this connection. The IUT transmits ARQ blocks. The TE then transmits an ARQ Reset message Type 0x0 (Initiator). The IUT stops transmitting ARQ blocks, transmits an ARQ Reset message Type 0x1 (Responder Ack), and starts T22. The TE does not respond.
Test purpose	Check that the IUT: Retransmits the ARQ Reset message Type 0x1 (Responder Ack) upon T22 expiry.

TP ID	BS/MS/MP/ARQ/RE/BV-009
Reference	Clause 6.3.4.6.2, figure 35
Selection criteria	
Initial condition	An ARQ connection is established and the IUT is the transmitter on this connection. The IUT transmits ARQ blocks. The TE then transmits an ARQ Reset message Type 0x0 (Initiator). The IUT stops transmitting ARQ blocks, transmits an ARQ Reset message Type 0x1 (Responder Ack), and starts T22. The TE does not respond.
Test purpose	Check that the IUT: Each time T22 expires, the IUT retransmits the ARQ Reset message Type 0x1 for T22_retries, and then re-initializes the DLC MAC layer.
Note	T22_retries is a vendor specific value.

TP ID	BS/MS/MP/ARQ/RE/BV-010
Reference	Clause 6.3.4.6.2, figure 35
Selection criteria	
Initial condition	An ARQ connection is established and the IUT is the receiver on this connection. The TE transmits ARQ blocks. The IUT starts ARQ_SYNC_LOSS_TIMEOUT at block BSN_{n+1} reception and never receives additional blocks.
Test purpose	Check that the IUT: Transmits an ARQ Reset message Type 0x0 (Request) after expiration of ARQ_SYNC_LOSS_TIMEOUT.

TP ID	BS/MS/MP/ARQ/RE/BV-011
Reference	Clause 6.3.4.6.2, figure 35
Selection criteria	
Initial condition	An ARQ connection is established and the IUT is the receiver on this connection. The TE transmits ARQ blocks. The IUT starts ARQ_SYNC_LOSS_TIMEOUT at block BSN_{n+1} reception and never receives additional blocks. The IUT transmits an ARQ Reset message Type 0x0 (Request) after expiration of ARQ_SYNC_LOSS_TIMEOUT. The TE then transmits an ARQ Reset message Type 0x1(Responder Ack).
Test purpose	Check that the IUT: Transmits an ARQ Reset message Type 0x2 (Confirmation).

TP ID	BS/MS/MP/ARQ/RE/BV-012
Reference	Clause 6.3.4.6.2, figure 35
Selection criteria	
Initial condition	An ARQ connection is established and the IUT is the receiver on this connection. The TE transmits ARQ blocks. The IUT starts ARQ_SYNC_LOSS_TIMEOUT at block BSN_{n+1} reception and never receives additional blocks. The IUT transmits an ARQ Reset message Type 0x0 (Request) after expiration of ARQ_SYNC_LOSS_TIMEOUT. The TE then transmits an ARQ Reset message Type 0x1(Responder Ack). The IUT then transmits an ARQ Reset message Type 0x2 (Confirmation). After receiving the ARQ Reset Type 0x2 message, the TE begins transmitting ARQ blocks beginning with BSN = 0.
Test purpose	Check that the IUT: Acknowledges the received ARQ blocks starting with a BSN = 0.

TP ID	BS/MS/MP/ARQ/RE/BV-013
Reference	Clause 6.3.4.6.2, figure 35
Selection criteria	
Initial condition	An ARQ connection is established and the IUT is the receiver on this connection. The TE transmits ARQ blocks. The IUT starts ARQ_SYNC_LOSS_TIMEOUT at block BSN_{n+1} reception and never receives additional blocks. The IUT then transmits an ARQ Reset message Type 0x0 (Request) after expiration of ARQ_SYNC_LOSS_TIMEOUT and starts T22. The TE does not respond.
Test purpose	Check that the IUT: Retransmits the ARQ Reset message Type 0x0 (Request) upon T22 expiry.

TP ID	BS/MS/MP/ARQ/RE/BV-014
Reference	Clause 6.3.4.6.2, figure 35
Selection criteria	
Initial condition	An ARQ connection is established and the IUT is the receiver on this connection. The TE transmits ARQ blocks. The IUT starts ARQ_SYNC_LOSS_TIMEOUT at block BSN_{n+1} reception and never receives additional blocks. The IUT then transmits an ARQ Reset message Type 0x0 (Request) after expiration of ARQ_SYNC_LOSS_TIMEOUT and starts T22. The TE does not respond.
Test purpose	Check that the IUT: Each time T22 expires, the IUT retransmits the ARQ Reset message Type 0x0 for T22_retries, and then re-initializes the DLC MAC layer.
Note	T22_retries is a vendor specific value.

5.2.2.2.3.2   Receive (RX)

TP ID	BS/MS/MP/ARQ/RX/BV-000
Reference	Clauses 6.3.4, 6.3.3.4
Selection criteria	
Initial condition	An ARQ connection is established and the IUT is the receiver on this connection. The TE transmits ARQ blocks.
Test purpose	Check that the IUT: Transmits ARQ feedback information either in an ARQ Feedback standalone message or in the first piggy-backed packed PDU subheader where bit #4 in the Type encodings of the generic MAC header is set to 1.

TP ID	BS/MS/MP/ARQ/RX/BV-001
Reference	Clause 6.3.4
Selection criteria	
Initial condition	An ARQ connection is established and the IUT is the receiver on this connection. The TE transmits ARQ blocks.
Test purpose	Check that the IUT: Does not fragment ARQ feedback messages.

TP ID	BS/MS/MP/ARQ/RX/BV-002
Reference	Clause 6.3.4.1
Selection criteria	
Initial condition	An ARQ connection is established and the IUT is the receiver on this connection. Fragmentation is not enabled.
Test purpose	Check that the IUT: In the RSP message, sets the ARQ block size to match the fixed SDU size connection setting.

TP ID	BS/MS/MP/ARQ/RX/BV-003
Reference	Clause 6.3.4.5
Selection criteria	
Initial condition	
Test purpose	Check that the IUT: Uses CRC-32 for error detection of PDUs on for all ARQ-enabled connections.

TP ID	BS/MS/MP/ARQ/RX/BV-004
Reference	Clause 6.3.4.6.2
Selection criteria	
Initial condition	An ARQ connection is established and the IUT is the receiver on this connection. The TE transmits ARQ blocks packed in a PDU with a break in the contiguous BSN sequence numbers: …, BSN_n, BSN_{n+2}, …
Test purpose	Check that the IUT: Transmits a NACK for block BSN_{n+1}.

TP ID	BS/MS/MP/ARQ/RX/BV-005
Reference	Clause 6.3.4.6.2
Selection criteria	
Initial condition	An ARQ connection is established and the IUT is the receiver on this connection. The TE starts ARQ_BLOCK_LIFETIME and transmits ARQ blocks with block BSN_n always missing. The IUT responds appropriately with NACKs. After ARQ_BLOCK_LIFETIME expires, the TE transmits an ARQ DISCARD message for block BSN_n.
Test purpose	Check that the IUT: Transmits an ACK for block BSN_n.

TP ID	BS/MS/MP/ARQ/RX/BV-006
Reference	Clause 6.3.4.6.2
Selection criteria	
Initial condition	An ARQ connection is established and the IUT is the receiver on this connection. The TE starts ARQ_BLOCK_LIFETIME and transmits ARQ blocks with block BSN_n always missing. The IUT responds appropriately with NACKs. After ARQ_BLOCK_LIFETIME expires, the TE transmits an ARQ DISCARD message for block BSN_n. The IUT then transmits an ACK for block BSN_n.
Test purpose	Check that the IUT: Transmits an ACK for block BSN_n each time the TE transmits an ARQ DISCARD message for block BSN_n.

TP ID	BS/MS/MP/ARQ/RX/BV-007
Reference	Clause 6.3.4.6.2
Selection criteria	
Initial condition	An ARQ connection is established and the IUT is the receiver on this connection. The TE transmits ARQ blocks. The TE then transmits an ARQ Discard message in order to skip ARQ blocks up to the BSN value in the message.
Test purpose	Check that the IUT: Acknowledges skipping of all the blocks up to the BSN value in an ARQ Feedback IE.

TP ID	BS/MS/MP/ARQ/RX/BV-008
Reference	Clause 6.3.4.6.2
Selection criteria	
Initial condition	An ARQ connection is established and the IUT is the receiver on this connection. The TE transmits ARQ blocks. The TE then transmits an ARQ Discard message in order to skip ARQ blocks up to the BSN value in the message (BSN_n). The IUT acknowledges skipping of all the blocks up to the BSN value in an ARQ Feedback IE. The TE transmits ARQ blocks beginning with a BSN = BSN_n + 2.
Test purpose	Check that the IUT: Acknowledges the blocks starting with BSN_n + 2 and NACKs the block with BSN_n + 1.

TP ID	BS/MS/MP/ARQ/RX/BV-009
Reference	Clause 6.3.4.6.3, figure 36
Selection criteria	
Initial condition	An ARQ connection is established and the IUT is the receiver on this connection. The TE transmits an ARQ block that is not in the IUT's window.
Test purpose	Check that the IUT: Discards the block and does not acknowledge its reception.

TP ID	BS/MS/MP/ARQ/RX/BV-010
Reference	Clause 6.3.4.6.3, figure 36
Selection criteria	
Initial condition	An ARQ connection is established and the IUT is the receiver on this connection. The TE transmits an ARQ block that is in the IUT's window that has already been acknowledged.
Test purpose	Check that the IUT: Acknowledges the ARQ block.

TP ID	BS/MS/MP/ARQ/RX/BV-011
Reference	Clause 6.3.4.6.3, figure 36
Selection criteria	
Initial condition	An ARQ connection is established and the IUT is the receiver on this connection. The TE transmits an ARQ block that is in the IUT's window that has not been acknowledged.
Test purpose	Check that the IUT: Acknowledges the ARQ block.

TP ID	BS/MS/MP/ARQ/RX/BV-012
Reference	Clause 6.3.4.6.3
Selection criteria	
Initial condition	An ARQ connection is established and the IUT is the receiver on this connection. The TE transmits an ARQ block with a CRC-32 error.
Test purpose	Check that the IUT: Transmits a NACK for the ARQ block.

TP ID	BS/MS/MP/ARQ/RX/BV-013
Reference	Clause 6.3.4.6.3
Selection criteria	
Initial condition	An ARQ connection is established and the IUT is the receiver on this connection. The TE transmits an ARQ block for BSN = m and ARQ block with BSN = n that contains a CRC error. The IUT ACKs block m and NACKs block n and starts ARQ_RX_PURGE_TIMEOUT for block m. The TE continues transmitting ARQ blocks with block n always containing a CRC error (the block is always marked as not received by the IUT).
Test purpose	Check that the IUT: At ARQ_RX_PURGE_TIMEOUT expiry, transmits the next ARQ feedback IE containing block n's BSN in the BSN field.

TP ID	BS/MS/MP/ARQ/RX/BV-014
Reference	Clause 6.3.4.6.3
Selection criteria	
Initial condition	An ARQ connection is established and the IUT is the receiver on this connection. The TE transmits ARQ blocks with some containing ARQ errors. The IUT acknowledges the correct blocks and NACKs the blocks containing the CRC errors. The TE then transmits an ARQ Discard message containing the BSNs of the blocks with the errors.
Test purpose	Check that the IUT: Acknowledges the blocks containing the errors in the ARQ Feedback IE and that the following ARQ Feedback IE BSN field's value is greater than (modulus 2^{11}) than the BSN of the last CRC error block.

TP ID	BS/MS/MP/ARQ/RX/BV-015
Reference	Clause 6.3.4.6.3
Selection criteria	
Initial condition	An ARQ connection is established and the IUT is the receiver on this connection. The TE transmits a set of ARQ blocks with no errors, a block with a CRC error, and another set without errors in that order.
Test purpose	Check that the IUT: Acknowledges the blocks in the first error-free set with a cumulative acknowledgement and acknowledges the second error-free set with either specific block acknowledgement, cumulative acknowledgement, or a combination of both and that the acknowledgements are sent in the order of the ARQ block numbers as received.

TP ID	BS/MS/MP/ARQ/RX/BV-016
Reference	Clause 6.3.4.6.3
Selection criteria	
Initial condition	An ARQ connection is established and the IUT is the receiver on this connection. ARQ_DELIVER_IN_ORDER is not enabled. The TE transmits an incomplete set for a MAC SDU and then a complete set of blocks for another MAC SDU.
Test purpose	Check that the IUT: Provides the convergence layer with the complete SDU immediately after reception of its last block.
Note	Requires an Upper Tester.

TP ID	BS/MS/MP/ARQ/RX/BV-017
Reference	Clause 6.3.4.6.3
Selection criteria	
Initial condition	An ARQ connection is established and the IUT is the receiver on this connection. ARQ_DELIVER_IN_ORDER is enabled. The TE transmits an incomplete set for a MAC SDU and then a complete set of blocks for another MAC SDU.
Test purpose	Check that the IUT: Provides the convergence layer with the complete SDU only after the incomplete set of blocks have been purged using ARQ_RX_PURGE_TIMEOUT.
Note	Requires an Upper Tester.

5.2.2.2.3.3   Transmit (TX)

TP ID	BS/MS/MP/ARQ/TX/BV-000
Reference	Clause 6.3.4, table 6
Selection criteria	
Initial condition	An ARQ connection is established and the IUT is the transmitter on this connection. The IUT transmits ARQ blocks after which the TE transmits ARQ feedback information in an ARQ Feedback standalone message. The IUT then transmits another set of ARQ blocks after which the ARQ feedback information is piggy-backed in a PDU by setting to 1 bit #4 in the Type encodings of the generic MAC header field and placing the ARQ Feedback Payload in the first packed subheader of the PDU.
Test purpose	Check that the IUT: Correctly processes the ARQ feedback information in both the ARQ Feedback standalone message and in the piggy-backed packed PDU subheader.

TP ID	BS/MS/MP/ARQ/TX/BV-001
Reference	Clause 6.3.4.1
Selection criteria	
Initial condition	An ARQ connection is established and the IUT is the transmitter on this connection. Fragmentation occurs on the connection.
Test purpose	Check that the IUT: Fragments the SDU only on ARQ block boundaries.

TP ID	BS/MS/MP/ARQ/TX/BV-002
Reference	Clause 6.3.4.1
Selection criteria	
Initial condition	An ARQ connection is established and the IUT is the transmitter on this connection. The PDU is not packed.
Test purpose	Check that the IUT: Transmits the blocks with contiguous BSNs.

TP ID	BS/MS/MP/ARQ/TX/BV-003
Reference	Clause 6.3.4.1
Selection criteria	
Initial condition	An ARQ connection is established and the IUT is the transmitter on this connection. The PDU is packed.
Test purpose	Check that the IUT: Transmits the sequence of blocks immediately between the MAC subheaders with contiguous sequence numbers and the sequence of blocks after the last packing subheader with contiguous sequence numbers.

TP ID	BS/MS/MP/ARQ/TX/BV-004
Reference	Clause 6.3.4.1
Selection criteria	
Initial condition	An ARQ connection is established and the IUT is the transmitter on this connection. The PDU contains packing or fragmentation subheaders.
Test purpose	Check that the IUT: Places into the subheader's BSN field the sequence number of the first ARQ block in the sequence of blocks following the subheader.

TP ID	BS/MS/MP/ARQ/TX/BV-005
Reference	Clause 6.3.4.6.2
Selection criteria	
Initial condition	An ARQ connection is established and the IUT is the transmitter on this connection. The IUT has transmitted ARQ blocks, all of which the TE has acknowledged except one. The TE has transmitted a NACK concerning this block using a selective ACK map. (This block is now in the "Waiting" state.)
Test purpose	Check that the IUT: Retransmits the NACK block followed by other blocks not yet sent using the rules for fragmentation and packing.

TP ID	BS/MS/MP/ARQ/TX/BV-006
Reference	Clause 6.3.4.6.2
Selection criteria	
Initial condition	An ARQ connection is established and the IUT is the transmitter on this connection. The IUT has transmitted ARQ blocks. The TE transmits ACKs for some of the blocks and NACKs concerning the other blocks using a selective ACK map. (These blocks are now in the "Waiting" state.)
Test purpose	Check that the IUT: Retransmits the NACK blocks with the block having the lowest BSN being retransmitted first followed by other blocks not yet sent using the rules for fragmentation and packing.

TP ID	BS/MS/MP/ARQ/TX/BV-007
Reference	Clause 6.3.4.6.2
Selection criteria	
Initial condition	An ARQ connection is established and the IUT is the transmitter on this connection. The IUT has transmitted ARQ blocks. The TE has not transmitted either ACKs or NACKs for these blocks. (These blocks are now in the "Outstanding" state.)
Test purpose	Check that the IUT: Does not retransmit these ARQ blocks.

TP ID	BS/MS/MP/ARQ/TX/BV-008
Reference	Clause 6.3.4.6.2
Selection criteria	
Initial condition	An ARQ connection is established and the IUT is the transmitter on this connection. The IUT has transmitted ARQ blocks. The TE transmits a block ACK for an invalid BSN.
Test purpose	Check that the IUT: Ignores the block ACK.

TP ID	BS/MS/MP/ARQ/TX/BV-009
Reference	Clause 6.3.4.6.2
Selection criteria	
Initial condition	An ARQ connection is established and the IUT is the transmitter on this connection. The IUT has transmitted ARQ blocks where a cumulative ACK is possible for a set of blocks. The TE then transmits a cumulative ACK for a subset of this set.
Test purpose	Check that the IUT: Does not retransmit any of the blocks in the cumulative ACK and retransmits the un-ACKed subset of the set.

TP ID	BS/MS/MP/ARQ/TX/BV-010
Reference	Clause 6.3.4.6.2
Selection criteria	
Initial condition	An ARQ connection is established and the IUT is the transmitter on this connection. The IUT has transmitted ARQ blocks. The TE then transmits a selective ACK with gaps (indicating NACK for some of the transmitted blocks).
Test purpose	Check that the IUT: Does not retransmit any of the blocks in the selective ACK and retransmits the blocks not selectively ACKed.

TP ID	BS/MS/MP/ARQ/TX/BV-011
Reference	Clause 6.3.4.6.2
Selection criteria	
Initial condition	An ARQ connection is established and the IUT is the transmitter on this connection. The IUT has transmitted ARQ blocks. The TE transmits a selective ACK for all blocks except BSN_i and BSN_k where i < k (i.e. where block BSN_i was transmitted before block BSN_k).The IUT then transmits more ARQ blocks including those for BSN_i and BSN_k. The IUT then transmits a selective ACK for BSN_k.
Test purpose	Check that the IUT: The IUT then transmits more ARQ blocks including that for BSN_i.

TP ID	BS/MS/MP/ARQ/TX/BV-012
Reference	Clause 6.3.4.6.2
Selection criteria	
Initial condition	An ARQ connection is established and the IUT is the transmitter on this connection. The IUT has transmitted ARQ blocks. The TE transmits an ACK for all blocks except BSN_i. Block BSN_k is ACKed where $i < k$ (i.e. where block BSN_i was transmitted before block BSN_k). Thus, there is a NACK for block BSN_i.
Test purpose	Check that the IUT: Transmits more ARQ blocks including that for BSN_i.

TP ID	BS/MS/MP/ARQ/TX/BV-013
Reference	Clause 6.3.4.6.2
Selection criteria	
Initial condition	An ARQ connection is established and the IUT is the transmitter on this connection. The IUT transmits ARQ blocks. The TE does not send any ACKs or NACKs for any block from BSN_n and on.
Test purpose	Check that the IUT: Retransmits block BSN_n after ARQ_RETRY_TIMEOUT time from the first sending of block BSN_n.

TP ID	BS/MS/MP/ARQ/TX/BV-014
Reference	Clauses 6.3.4.3.4, 6.3.4.6.2
Selection criteria	
Initial condition	An ARQ connection is established and the IUT is the transmitter on this connection. The IUT transmits ARQ blocks. The TE does not send any ACKs or NACKs for any block from BSN_n and on. The IUT then retransmits block BSN_n after ARQ_RETRY_TIMEOUT time from the first sending of block BSN_n. The TE again does not send any ACKs or NACKs for any block from BSN_n and on.
Test purpose	Check that the IUT: Retransmits block BSN_n after ARQ_RETRY_TIMEOUT time from the last sending of block BSN_n.

TP ID	BS/MS/MP/ARQ/TX/BV-015
Reference	Clause 6.3.4.6.2
Selection criteria	
Initial condition	An ARQ connection is established and the IUT is the transmitter on this connection. The IUT transmits ARQ blocks. (ARQ_BLOCK_LIFETIME begins).The TE does not send any ACKs or NACKs for any block from BSN_n and after to any of the repeated transmissions.
Test purpose	Check that the IUT: Transmits an ARQ DISCARD message between ARQ_BLOCK_LIFETIME expiry and ARQ_RX_PURGE_TIMEOUT + ARQ_RETRY_TIMEOUT expiry.

TP ID	BS/MS/MP/ARQ/TX/BV-016
Reference	Clause 6.3.4.6.2
Selection criteria	
Initial condition	An ARQ connection is established and the IUT is the transmitter on this connection. The IUT transmits ARQ blocks. (ARQ_BLOCK_LIFETIME begins).The TE does not send any ACKs or NACKs for any block from BSN_n and after to any of the repeated transmissions. The IUT transmits an ARQ DISCARD message between ARQ_BLOCK_LIFETIME expiry and ARQ_RX_PURGE_TIMEOUT + ARQ_RETRY_TIMEOUT expiry. (ARQ_RETRY_TIMEOUT begins.) The TE does not send an ACK for the discarded BSN_n.
Test purpose	Check that the IUT: After ARQ_RETRY_TIMEOUT expiry, retransmits the ARQ DISCARD message.

TP ID	BS/MS/MP/ARQ/TX/BV-017
Reference	Clause 6.3.4.6.2
Selection criteria	
Initial condition	An ARQ connection is established and the IUT is the transmitter on this connection. The IUT transmits ARQ blocks. (ARQ_BLOCK_LIFETIME begins).The TE does not send any ACKs or NACKs for any block from BSN_n and after to any of the repeated transmissions. The IUT transmits an ARQ DISCARD message between ARQ_BLOCK_LIFETIME expiry and ARQ_RX_PURGE_TIMEOUT + ARQ_RETRY_TIMEOUT expiry. (ARQ_RETRY_TIMEOUT begins.) The TE does not send an ACK for the discarded BSN_n.
Test purpose	Check that the IUT: After ARQ_RETRY_TIMEOUT expiry, repeatedly retransmits the ARQ DISCARD message, and restarts ARQ_RETRY_TIMEOUT until receiving an ACK for the discarded BSN_n.

5.2.2.2.4 CRC Use (CRC)

TP ID	BS/MS/MP/CRC/BV-000
Reference	Clauses 6.3.1.1, 6.3.3.5
Selection criteria	
Initial condition	
Test purpose	Check that the IUT: Includes a CRC as defined in IEEE 802.3 in each generic MAC header (HT set to 0). The CRC shall cover the generic MAC header and MAC PDU payload. The CRC shall cover the payload after encryption, if it is encrypted.

TP ID	BS/MS/MP/CRC/BV-001
Reference	Clause 6.3.2.3
Selection criteria	
Initial condition	
Test purpose	Check that the IUT: Enables CRC usage for the Initial Ranging, Broadcast, Basic, and Primary Management connections.

TP ID	BS/MS/MP/CRC/BV-002
Reference	Clause 6.3.3.5
Selection criteria	
Initial condition	
Test purpose	Check that the IUT: For every bandwidth request header (HT set to 1), the MAC PDU is not protected by a CRC.

5.2.2.2.5 Encryption (EN)

TP ID	BS/MS/MP/EN/BV-000
Reference	Clause 6.3.3.6
Selection criteria	
Initial condition	
Test purpose	Check that the IUT: Never encrypts the generic (HT set to 0) MAC header.

TP ID	BS/MS/MP/EN/BV-001
Reference	Clause 6.3.3.6
Selection criteria	
Initial condition	IUT is operational. The TE transmits an unencrypted MAC DATA PDU mapped to an SA requiring encryption.
Test purpose	Check that the IUT: Discards the MAC PDU.

TP ID	BS/MS/MP/EN/BV-002
Reference	Clause 7.1.1
Selection criteria	
Initial condition	
Test purpose	Check that the IUT: Having exchanged the key parameters successfully, continues to send the MAC Management messages in clear.

5.2.2.2.5.1   SS Reauthorization (SSR)

TP ID	BS/MS/MP/EN/SSR/BV-000
Reference	Clause 7.2.5.2, figure 132, table 132
Selection criteria	
Initial condition	The IUT is decrypting. The tester transmits a Key Request for key refresh within the refresh grace period immediately followed by an Auth Request within the authorization grace period and a MAC DATA PDU with an invalid TEK key sequence number for the SAID.
Test purpose	Check that the IUT: Transmits a TEK Invalid message.
Note	This TP assumes that the IUT does not react in time to send the Key Reply and Auth Reply before receiving the MAC DATA PDU with the invalid TEK key sequence number for the SAID.

5.2.2.2.5.2   TEK Update (TKU)

TP ID	BS/MS/MP/EN/TKU/BV-000
Reference	Clause 6.3.3.6
Selection criteria	IUT is operational and transmitting MAC data PDUs.
Initial condition	
Test purpose	Check that the IUT: Discards an unencrypted MAC data PDU received on a connection mapped to an SA requiring encryption.

TP ID	BS/MS/MP/EN/TKU/BV-001
Reference	Clause 7.2.5.2, figure 132, table 132, clause 6.3.2.3.9.9
Selection criteria	
Initial condition	The IUT is encrypting. The tester transmits a MAC DATA PDU with an invalid TEK key sequence number for the SAID.
Test purpose	Check that the IUT: Transmits a TEK Invalid message.

TP ID	BS/MS/MP/EN/TKU/BV-002
Reference	Clause 7.4.1.4, figure 134
Selection criteria	
Initial condition	IUT is operational. The current TEK is TEK_{n-1}. The TE has transmitted a valid Key Request in the grace period of TEK_{n-1}.
Test purpose	Check that the IUT: Transmits a valid Key Reply with TEK_n and TEK_{n+1}; that the newer TEK has a key sequence number one greater (modulo 4) than that of TEK_n; and that the two TEK lifetimes reflect their remaining lifetimes at the time the Key Reply is sent.

TP ID	BS/MS/MP/EN/TKU/BV-003
Reference	Clause 7.4.1.4, figure 134
Selection criteria	
Initial condition	IUT is operational. TEK_n has expired.
Test purpose	Check that the IUT: No longer uses TEK_n.

TP ID	BS/MS/MP/EN/TKU/BV-004
Reference	Clause 7.4.1.5, figure 134
Selection criteria	
Initial condition	The IUT is operational and encrypting MAC DATA PDUs. The current TEK is TEK_n.
Test purpose	Check that the IUT: Encrypts using TEK_{n+1} at the expiration TEK_n. (TEK_n expires halfway through TEK_{n+1}'s lifetime.) (Since TEK_{n+2} is immediately active at TEK_n's expiry, TEK_{n+1} is immediately the older of the two active TEKs.)

TP ID	BS/MS/MP/EN/TKU/BV-005
Reference	Clause 7.4.1.5, figure 134
Selection criteria	
Initial condition	The IUT is operational and encrypting MAC DATA PDUs.
Test purpose	Check that the IUT: Encrypts MAC DATA PDUs using the older of the two active TEKs.

TP ID	BS/MS/MP/EN/TKU/BV-006
Reference	Clause 7.4.1.5, figure 134
Selection criteria	
Initial condition	The IUT is operational and decrypting uplink MAC DATA PDUs. The MAC DATA PDUs are encrypted using the older of the two active TEKs.
Test purpose	Check that the IUT: Decrypts the MAC DATA PDUs.

TP ID	BS/MS/MP/EN/TKU/BV-007
Reference	Clause 7.4.1.5, figure 134
Selection criteria	
Initial condition	The IUT is operational and decrypting uplink MAC DATA PDUs. The MAC DATA PDUs are encrypted using the newer of the two active TEKs.
Test purpose	Check that the IUT: Decrypts the MAC DATA PDUs.

TP ID	BS/MS/MP/EN/TKU/BV-008
Reference	Clause 7.4.1.5, figure 134
Selection criteria	
Initial condition	The IUT is operational and decrypting uplink MAC DATA PDUs.
Test purpose	Check that the IUT: Decrypts with a TEK for the TEK's entire lifetime.

5.2.2.2.5.3   TEK Exchange (TKX)

TP ID	BS/MS/MP/EN/TKX/BV-000
Reference	Clause 7.2.2.1, table 132, figure 132 (gray states)
Selection criteria	
Initial condition	The IUT Is encrypting. The tester transmits a valid Key Request message with an authorized SAID within the refresh grace period.
Test purpose	Check that the IUT: Transmits a valid Key Reply message for the given SAID and increments the key sequence number with a new generation of keying material by using (n+1) mod 4 where n is the older sequence number. Encrypted MAC DATA PDUs for this SAID continue to be transmitted during and after the transaction.

TP ID	BS/MS/MP/EN/TKX/BV-001
Reference	Clause 7.2.4.2, table 371
Selection criteria	
Initial condition	IUT is operational. The tester transmits a Key Req with an HMAC-Digest attribute that will fail IUT verification.
Test purpose	Check that the IUT: Transmits an Auth Invalid message with error-code as either No Information or Message (Key Request) authentication failure.

TP ID	BS/MS/MP/EN/TKX/BV-002
Reference	Clause 7.2.4.2, table 371
Selection criteria	
Initial condition	IUT is operational. The tester transmits a Key Req. There is no valid AK associated with the tester.
Test purpose	Check that the IUT: Transmits an Auth Invalid message with error-code as either No Information or Unauthorized SS.

TP ID	BS/MS/MP/EN/TKX/BV-003
Reference	Clause 7.2.5.2
Selection criteria	
Initial condition	The IUT Is encrypting. The tester transmits a Key Request message with an unauthorized SAID within the refresh grace period.
Test purpose	Check that the IUT: Transmits a valid Key Reject message for the given SAID and MAC DATA PDU encryption stops for this SAID.

TP ID	BS/MS/MP/EN/TKX/BV-004
Reference	Clause 7.2.5.2, figure 132, table 132
Selection criteria	
Initial condition	The IUT is decrypting.
Test purpose	Check that the IUT: Transmits a TEK Invalid message. The tester transmits a Key Request for key refresh within the refresh grace period and immediately afterwards a MAC DATA PDU with an invalid TEK key sequence number for the SAID.
Note	This TP assumes that the IUT does not react in time to send the Key Reply before receiving the MAC DATA PDU with the invalid TEK key sequence number for the SAID.

TP ID	BS/MS/MP/EN/TKX/BV-005
Reference	Clause 7.2.2.1
Selection criteria	
Initial condition	Encryption/decryption is underway. The tester transmits a valid Key Request message in the refresh grace period with an authorized SAID and starts T_RefreshWait. The IUT then transmitted a valid Key Reply message for the given SAID. The tester ignored the Key Reply message and resent the Key Request message after T_RefreshWait expired.
Test purpose	Check that the IUT: Transmits a valid Key Reply message for the given SAID to refresh the keys.

5.2.2.2.6 Fragmentation (FR)

TP ID	BS/MS/MP/FR/BV-000
Reference	Clause 6.3.3.3
Selection criteria	
Initial condition	The maximum size of a fragment has been negotiated during connection establishment. The pending bandwidth allocation is larger than the negotiated maximum and, hence, would accept a larger fragment.
Test purpose	Check that the IUT: Forms fragments whose length is less than or equal to the negotiated maximum size.

TP ID	BS/MS/MP/FR/BV-001
Reference	Clause 6.3.3.3.1
Selection criteria	Non-ARQ connection.
Initial condition	
Test purpose	Check that the IUT: Transmits fragments once and in sequence.

TP ID	BS/MS/MP/FR/BV-002
Reference	Clause 6.3.3.3.1
Selection criteria	
Initial condition	Non-ARQ connection. The TE transmits fragments in sequence but one fragment is missing.
Test purpose	Check that the IUT: Discards all MAC PDUs on the connection until a new first fragment is detected.

TP ID	BS/MS/MP/FR/BV-003
Reference	Clause 6.3.3.3.1
Selection criteria	
Initial condition	Non-ARQ connection. The TE transmits fragments in sequence but one fragment is missing.
Test purpose	Check that the IUT: Discards all MAC PDUs on the connection until a non-fragmented MAC PDU is detected.

TP ID	BS/MS/MP/FR/BV-004
Reference	Clause 6.3.3.3.2
Selection criteria	
Initial condition	ARQ-enabled connection.
Test purpose	Check that the IUT: Forms fragments for transmission by concatenating sets of ARQ blocks with adjacent sequence numbers.

TP ID	BS/MS/MP/FR/BV-005
Reference	Clause 6.3.3.4.1.2
Selection criteria	
Initial condition	The IUT has established a non-ARQ connection (Extended Type bit in generic MAC header set to 0) for variable-length SDUs.
Test purpose	Check that the IUT: Includes fragmentation information for individual MAC SDUs or MAC SDU fragments in the Packing subheader when packing is used.

TP ID	BS/MS/MP/FR/BV-006
Reference	Clause 6.3.3.4.1.2
Selection criteria	
Initial condition	The IUT has established a non-ARQ connection (Extended Type bit in generic MAC header set to 0) for variable-length SDUs.
Test purpose	Check that the IUT: When no Packing subheader is present, places the fragmentation information for individual MAC SDU fragments in the corresponding Fragmentation subheader.

TP ID	BS/MS/MP/FR/BV-007
Reference	Clause 6.3.3.4.2
Selection criteria	
Initial condition	The IUT has established an ARQ connection (Extended Type bit in generic MAC header set to 1) for variable-length SDUs on the connection.
Test purpose	Check that the IUT: Includes fragmentation information for individual MAC SDUs or MAC SDU fragments in the Packing subheader when packing is used.

TP ID	BS/MS/MP/FR/BV-008
Reference	Clause 6.3.3.4.2
Selection criteria	
Initial condition	The IUT has established an ARQ connection (Extended Type bit in generic MAC header set to 1) for variable-length SDUs on the connection.
Test purpose	Check that the IUT: When no Packing subheader is present, places the fragmentation information for individual MAC SDU fragments in the corresponding Fragmentation subheader.

5.2.2.2.7   Packing (PK)

TP ID	BS/MS/CO/PK/BV-000
Reference	Clause 6.3.2.2.3
Selection criteria	
Initial condition	
Test purpose	Check that the IUT: When packing variable-length MAC SDUs, precedes each one with a Packing subheader.

TP ID	BS/MS/MP/PK/BV-001
Reference	Clause 6.3.3.4
Selection criteria	
Initial condition	Packing is possible for a connection.
Test purpose	Check that the IUT: Transmits MAC SDUs each in a separate PDU or packs a group of MAC SDUs into a single MAC PDU.
Note	Packing is not mandatory.

TP ID	BS/MS/MP/PK/BV-002
Reference	Clause 6.3.3.4.1.1
Selection criteria	
Initial condition	The IUT has established a non-ARQ connection (Extended Type bit in generic MAC header set to 0) for fixed-length SDUs.
Test purpose	Check that the IUT: For packing fixed length blocks, the Request/Transmission policy is set to allow packing and prohibit fragmentation.

TP ID	BS/MS/MP/PK/BV-003
Reference	Clause 6.3.3.4.1.1
Selection criteria	
Initial condition	The IUT has established a non-ARQ connection (Extended Type bit in generic MAC header set to 0) for fixed-length SDUs.
Test purpose	Check that the IUT: Includes the SDU size in the DSA-REQ message when establishing the connection.

TP ID	BS/MS/MP/PK/BV-004
Reference	Clause 6.3.3.4.1.2
Selection criteria	
Initial condition	The IUT has established a non-ARQ connection (Extended Type bit in generic MAC header set to 0) for variable-length SDUs.
Test purpose	Check that the IUT: Attaches a Packing subheader to each MAC SDU in the MAC PDU.

TP ID	BS/MS/MP/PK/BV-005
Reference	Clause 6.3.3.4.2
Selection criteria	
Initial condition	The IUT has established an ARQ connection (Extended Type bit in generic MAC header set to 1) for variable-length SDUs.
Test purpose	Check that the IUT: Attaches a Packing subheader to each MAC SDU in the MAC PDU.

TP ID	BS/MS/MP/PK/BV-006
Reference	Clause 6.3.3.4.2
Selection criteria	
Initial condition	ARQ and packing enabled on the connection. TE transmits a MAC SDU broken into multiple fragments that are then packed into the same MAC PDU.
Test purpose	Check that the IUT: Unpacks and de-fragments the MAC PDU to form the MAC SDU.

TP ID	**BS/MS/MP/PK/BV-007**
Reference	Clause 6.3.3.4.2
Selection criteria	
Initial condition	ARQ and packing enabled on the connection. TE transmits a MAC PDU packed with SDU fragments from different SDUs including a mix of first transmissions and retransmissions.
Test purpose	Check that the IUT: Unpacks and de-fragments the MAC PDU to form the MAC SDUs.

5.2.2.2.8   Privacy Key Management (PKM)

TP ID	**BS/MS/MP/PKM/BV-000**
Reference	Clause 6.3.2.3.9
Selection criteria	
Initial condition	IUT is operational.
Test purpose	Check that the IUT: On receiving a PKM-REQ MAC message with an invalid PKM packet type code, does nothing and remains in the same state.

TP ID	**BS/MS/MP/PKM/BV-001**
Reference	Clause 6.3.2.3.9
Selection criteria	
Initial condition	IUT is operational.
Test purpose	Check that the IUT: Upon receiving PKM-REQ message, transmits a PKM-RSP message with the Identifer field equal to the Identifier of the PKM-REQ message.

TP ID	**BS/MS/MP/PKM/BV-002**
Reference	Clause 6.3.2.3.9
Selection criteria	
Initial condition	IUT is operational.
Test purpose	Check that the IUT: Upon transmitting a TEK Invalid message that is not a response to a PKM-REQ message, sets the Identifier field to 0.

TP ID	**BS/MS/MP/PKM/BV-003**
Reference	Clause 6.3.2.3.9
Selection criteria	
Initial condition	IUT is operational.
Test purpose	Check that the IUT: Upon transmitting an unsolicited Auth Invalid message, sets the Identifier field to 0.

TP ID	**BS/MS/MP/PKM/BV-004**
Reference	Clause 6.3.2.3.9
Selection criteria	
Initial condition	IUT has made tester operational. Given different ordering of PKM-REQ message attributes and the HMAC-Digest attribute, if any, is correctly placed,
Test purpose	Check that the IUT: Makes the test equipment again operational.

TP ID	**BS/MS/MP/PKM/BV-005**
Reference	Clause 6.3.2.3.9, 11.9
Selection criteria	
Initial condition	IUT has negotiated basic capabilities and SS authorization and key exchange has started.
Test purpose	Check that the IUT: On receiving a PKM_REQ message with unknown attributes, ignores the unknown attributes and recognizes the valid attributes.

TP ID	BS/MS/MP/PKM/BV-006
Reference	Clause 6.3.2.3.9
Selection criteria	
Initial condition	IUT has negotiated basic capabilities and SS authorization and key exchange has started.
Test purpose	Check that the IUT: On receiving a PKM_REQ message with missing required attributes, does not transmit a message and stays in the same state.

5.2.2.2.9 Reports (RR)

TP ID	BS/MS/MP/RR/BV-000
Reference	Clause 6.3.2.3.33
Selection criteria	
Initial condition	The IUT is operational.
Test purpose	Check that the IUT: Transmits a REP-REQ message on the Basic CID.

5.2.2.2.10 Reset (RE)

TP ID	BS/MS/MP/RE/BV-000
Reference	Clause 6.3.2.3.22
Selection criteria	
Initial condition	The IUT is operational. The TE is unresponsive to the IUT.
Test purpose	Check that the IUT: Transmits a RES-CMD message on the Basic CID.

TP ID	BS/MS/MP/RE/BV-001
Reference	Clause 6.3.2.3.22
Selection criteria	
Initial condition	The IUT is operational. The TE transmits abnormalities in the uplink transmission.
Test purpose	Check that the IUT: Transmits a RES-CMD message on the Basic CID.

5.2.2.2.11 Uplink Scheduling (US)

TP ID	BS/MS/MP/US/BV-000
Reference	Clause 6.3.5.2.4
Selection criteria	
Initial condition	BE scheduling in use for this connection.
Test purpose	Check that the IUT: Sets the Request/Transmission Policy to allow the TE to use contention requests on the connection.

5.2.2.3 Void

5.2.2.4 Message Behaviour for PMP (PMP)

5.2.2.4.1 Network Entry and Initialization (NE)

5.2.2.4.1.1 Obtain Transfer Parameters (TXP)

TP ID	BS/MS/PMP/NE/TXP/BV-000
Reference	Clauses 6.3.2.3.2, 6.3.9.2, table 340
Selection criteria	
Initial condition	Switch on IUT
Test purpose	Check that the IUT: Sends at least every 200 ms a DL-MAP containing the PHY Synchronization, the DCD Count, the Base Station ID, the Number of DL-MAP Elements and the DL-MAP Information Elements.

TP ID	BS/MS/PMP/NE/TXP/BV-001
Reference	Clauses 6.3.2.3.2, 6.3.9.2, table 340
Selection criteria	
Initial condition	Switch on IUT
Test purpose	Check that the IUT: Sends at least every 10 ms a DCD containing the Downlink Channel ID, the Configuration Change Count and the Downlink Burst Profile.

TP ID	BS/MS/PMP/NE/TXP/BV-002
Reference	Clauses 6.3.2.3.3, 6.3.9.3, table 340
Selection criteria	
Initial condition	Switch on IUT
Test purpose	Check that the IUT: Sends at most every 2 ms a UCD containing the Configuration Change Count, the Ranging Backoff Start, the Ranging Backoff End, the Request Backoff Start, the Request Backoff End and the Uplink Burst Profile.

TP ID	BS/MS/PMP/NE/TXP/BV-003
Reference	Clauses 6.3.2.3.3, 6.3.9.3, table 340
Selection criteria	
Initial condition	Switch on IUT
Test purpose	Check that the IUT: Sends at most every 2 ms a UCD, and that this UCD is addressed to the MAC Broadcast Address.

5.2.2.4.1.2   Initial Ranging (IR)

TP ID	BS/MS/PMP/NE/IR/BV-000
Reference	Clauses 6.3.2.3.4, 6.3.9.5, table 340, clause 8.3
Selection criteria	
Initial condition	Switch on IUT
Test purpose	Check that the IUT: Sends in every frame a UL-MAP containing the Uplink Channel ID, the UCD Count, the Alloc Start Time and the Map Information Elements.

TP ID	BS/MS/PMP/NE/IR/BV-001
Reference	Clauses 6.3.2.3.4, 6.3.9.5, figure 64, table 365
Selection criteria	
Initial condition	Wait for RNG-REQ
Test purpose	Check that the IUT: On receipt of an un-decodable RNG-REQ, sends a RNG-RSP containing Ranging Status set to Rerange (4) and the Frame Number.

TP ID	BS/MS/PMP/NE/IR/BV-002
Reference	Clauses 6.3.2.3.6, 6.3.9.5
Selection criteria	
Initial condition	Wait for RNG-REQ
Test purpose	Check that the IUT: On receipt of a decodable RNG-REQ containing PHY parameters that need to be adjusted, sends a RNG-RSP containing an Uplink Channel ID, a Timing Adjust Information, a Power Adjust Information, a Ranging Status set to continue, a Basic CID, a Primary Management CID and the SS MAC Address.

TP ID	BS/MS/PMP/NE/IR/BV-003
Reference	Clauses 6.3.2.3.6, 6.3.9.5
Selection criteria	
Initial condition	Wait for polled RNG-REQ
Test purpose	Check that the IUT: On receipt of a decodable RNG-REQ containing adjusted PHY parameters, sends a RNG-RSP containing a Ranging Status set to success.

TP ID	BS/MS/PMP/NE/IR/BV-004
Reference	Clause 11.1.3
Selection criteria	
Initial condition	Wait for RNG-REQ. The IUT has a MAC Version newer than 802.16c-2002. The TE transmits a RNG-REQ with a MAC version value of 1 for conformance with IEEE 802.16-2001.
Test purpose	Check that the IUT: Is backwards compatible and communicates with the TE per IEEE 802.16-2001.

TP ID	BS/MS/PMP/NE/IR/BV-005
Reference	Clause 11.1.3
Selection criteria	
Initial condition	Wait for RNG-REQ. The IUT has a MAC Version newer than 802.16c-2002. The TE transmits a RNG-REQ with a MAC version value of 2 for conformance with IEEE 802.16c-2002 and its predecessors.
Test purpose	Check that the IUT: Is backwards compatible and communicates with the TE per IEEE 802.16c-2002.
Note	Since SS conforms to both 16-2001 and 16c-2002, assume that it indicates its use of the newer version in this version value of 2. If SS wanted to use only 16-2001, it could indicate a version value of 1.

TP ID	BS/MS/PMP/NE/IR/TI-000
Reference	Clauses 6.3.2.3.6, 6.3.9.5, table 340 "Invited Ranging Retries"
Selection criteria	
Initial condition	Wait for polled RNG-REQ.
Test purpose	Check that the IUT: On no action of the test equipment, sends a RNG-RSP containing a Ranging Status set to continue for at least 16 times, and then sends a RNG-RSP containing a Ranging Status set to abort.

TP ID	BS/MS/PMP/NE/IR/TI-001
Reference	Clauses 6.3.2.3.6, 6.3.9.5, table 340 "Invited Ranging Retries"
Selection criteria	
Initial condition	Wait for polled RNG-REQ
Test purpose	Check that the IUT: Each time on receipt of a RNG-REQ, and the signal level is not good enough, sends n times a RNG-RSP containing a Ranging Status set to continue, and at the n+1st time, on receipt of a RNG-REQ, and the signal level is not good enough, sends a RNG-RSP containing a Ranging Status set to abort.
Parameter values	$n \geq 16$

5.2.2.4.1.3   Negotiate Basic Capabilities (BC)

TP ID	BS/MS/PMP/NE/BC/BV-000
Reference	Clauses 6.3.2.3.23-24, 6.3.9.7
Selection criteria	
Initial condition	Completion of ranging, Wait for SBC-REQ.
Test purpose	Check that the IUT: On receipt of a SBC-REQ, sends a SBC-RSP with a MAC header containing the HT bit set to 0 and the associated Basic CID.

TP ID	BS/MS/PMP/NE/BC/BV-001
Reference	Clauses 6.3.2.3.23-24, 6.3.9.7
Selection criteria	
Initial condition	Completion of ranging, Wait for SBC-REQ.
Test purpose	Check that the IUT: On receipt of a SBC-REQ containing the Physical Parameters Support and the Bandwidth Allocation Support, sends a SBC-RSP containing the Physical Parameters Support and the Bandwidth Allocation Support.

TP ID	BS/MS/PMP/NE/BC/TI-000
Reference	Clauses 6.3.2.3.23-24, 6.3.9.7
Selection criteria	
Initial condition	Completion of ranging, Wait for SBC-REQ
Test purpose	Check that the IUT: After expiry of timer T9, on receipt of a SBC-REQ, does not send a SBC-RSP.

5.2.2.4.1.4   Certification (CRT)

TP ID	BS/MS/PMP/NE/CRT/BV-000
Reference	Clause 7.6.3
Selection criteria	
Initial condition	Use of an X.509 Version 3 SS Certificate
Test purpose	Check that the IUT: Verifies the Manufacturer CA Certificate through some means.

5.2.2.4.1.5   Authorization and Key Exchange (AK)

TP ID	BS/MS/PMP/NE/AK/BV-000
Reference	Clause 7.1.5
Selection criteria	
Initial condition	IUT has begun SS authorization.
Test purpose	Check that the IUT: Supports at least one of the Cryptographic Suites in table 304.

TP ID	BS/MS/PMP/NE/AK/BV-001
Reference	Clause 7.2.1, figure 131, table 131
Selection criteria	
Initial condition	Basic Capabilities Negotiation is completed. No static SAs are provisioned. The tester transmits a valid Auth Info message and then a valid Auth Request message.
Test purpose	Check that the IUT: Transmits a valid Auth Reply with a SA whose SAID is identical to the Basic CID in the Auth Request message.

TP ID	BS/MS/PMP/NE/AK/BV-002
Reference	Clause 7.2.1, figure 131, table 131
Selection criteria	
Initial condition	Basic Capabilities Negotiation is completed. Static SAs are provisioned. The tester transmits a valid Auth Info message and then a valid Auth Request message.
Test purpose	Check that the IUT: Transmits a valid Auth Reply with a SA whose SAID is identical to the Basic CID in the Auth Request message and a SA for each provisioned static SA.

TP ID	BS/MS/PMP/NE/AK/BV-003
Reference	Clause 7.2.1
Selection criteria	
Initial condition	Negotiating Basic Capabilities is complete. IUT is provisioned to authorize basic unicast services.
Test purpose	Check that the IUT: Determines by use of the X.509 certificate that the tester is authorized for basic unicast services.

TP ID	BS/MS/PMP/NE/AK/BV-004
Reference	Clause 7.2.3
Selection criteria	
Initial condition	Negotiating Basic Capabilities is completed. The tester has transmitted an Auth Req with a list of cryptographic suites, all of which the BS does not support.
Test purpose	Check that the IUT: Transmits an Auth Rej.

TP ID	BS/MS/PMP/NE/AK/BV-005
Reference	Clause 7.2.2.1
Selection criteria	
Initial condition	Basic Capabilities Negotiation and Authorization is completed. The tester transmits a valid Key Request message with an authorized SAID.
Test purpose	Check that the IUT: Transmits a valid Key Reply message for the given SAID.

TP ID	BS/MS/PMP/NE/AK/BV-006
Reference	Clause 7.2.2.1
Selection criteria	
Initial condition	Basic Capabilities Negotiation is completed. The tester transmits a valid Key Request message with an authorized SAID and starts T_OpWait. The IUT then transmitted a valid Key Reply message for the given SAID. The tester ignored the Key Reply message and resent the Key Request message after T_OpWait expired.
Test purpose	Check that the IUT: Transmits a valid Key Reply message for the given SAID.

TP ID	BS/MS/PMP/NE/AK/BV-007
Reference	Clause 7.2.5.2
Selection criteria	
Initial condition	Basic Capabilities Negotiation is completed. The tester transmits a Key Request message with an unauthorized SAID.
Test purpose	Check that the IUT: Transmits a valid Key Reject message for the given SAID.

TP ID	BS/MS/PMP/NE/AK/BV-008
Reference	Clause 7.1.3
Selection criteria	
Initial condition	Negotiating Basic Capabilities is complete. The tester requests access to a Security Association that is not authorized.
Test purpose	Check that the IUT: Provides only authorized Security Associations.

5.2.2.4.1.5.1   Timers (TI)

TP ID	BS/MS/PMP/NE/AK/TI-000
Reference	Clause 7.4.1.1
Selection criteria	
Initial condition	Basic Capabilities are negotiated. The tester has transmitted a valid Auth Request message after which the IUT has transmitted a valid Auth Reply message.
Test purpose	Check that the IUT: Keeps AK active for the parameter AK-Lifetime starting from the time that the Auth Reply message is transmitted.
Parameter values	System configuration parameter AK-Lifetime

TP ID	BS/MS/MP/NE/AK/TI-001
Reference	Clause 7.4.1.1
Selection criteria	
Initial condition	Basic Capabilities are negotiated. The tester has transmitted a valid Auth Request message after which the IUT has transmitted a valid Auth Reply message containing an AK-Lifetime value different than the configuration parameter value.
Test purpose	Check that the IUT: Keeps all AKs following the first AK active for the AK-Lifetime value transmitted in the Auth Reply message.

5.2.2.4.1.6   Node Registration (NR)

TP ID	BS/MS/PMP/NE/NR/BV-000
Reference	Clauses 6.3.2.3.7, 6.3.9.9, 11.7.6
Selection criteria	
Initial condition	Wait for REG-REQ
Test purpose	Check that the IUT: On receipt of a REG-REQ, sends a REG-RSP with a MAC header containing the HT bit set to 0, the Primary CID, the HMAC tuple, and the Response set to OK.

TP ID	BS/MS/PMP/NE/NR/BV-001
Reference	Clauses 6.3.2.3.7, 6.3.9.9, 11.7.6
Selection criteria	PIC_managed_SS
Initial condition	Wait for REG-REQ
Test purpose	Check that the IUT: On receipt of a REG-REQ, sends a REG-RSP with a MAC header containing the HT bit set to 0, the Primary CID, the Secondary Management CID, the HMAC tuple, and the Response set to OK.

TP ID	BS/MS/PMP/NE/NR/BV-002
Reference	Clauses 6.3.2.3.7, 6.3.9.9, 11.7.6
Selection criteria	PIC_managed_SS
Initial condition	Wait for REG-REQ
Test purpose	Check that the IUT: On receipt of a REG-REQ containing the IP Version, sends a REG-RSP containing the IP Version to command the test equipment to use the indicated version of IP on the Secondary Management Connection.

TP ID	BS/MS/PMP/NE/NR/BV-003
Reference	Clauses 6.3.2.3.7, 6.3.9.9
Selection criteria	
Initial condition	Wait for REG-REQ
Test purpose	Check that the IUT: On receipt of a REG-REQ containing a invalid HMAC, sends a REG-RSP containing the Response set to "Message authentication failure".

TP ID	BS/MS/PMP/NE/NR/BV-004
Reference	Clauses 6.3.2.3.7, 6.3.9.9
Selection criteria	PMP operation
Initial condition	Wait for REG-REQ
Test purpose	Check that the IUT: On receipt of a REG-REQ containing the SS Capabilities, sends a REG-RSP containing the SS Capabilities in order to indicate whether they may be used.

TP ID	BS/MS/PMP/NE/NR/BV-005
Reference	Clauses 6.3.2.3.7, 6.3.9.9
Selection criteria	PMP operation
Initial condition	Wait for REG-REQ
Test purpose	Check that the IUT: On receipt of a REG-REQ containing the SS Capabilities with unrecognizable capabilities, sends a REG-RSP containing the SS Capabilities set to off.

TP ID	BS/MS/PMP/NE/NR/BV-006
Reference	
Selection criteria	PIC_VENDOR_ID
Initial condition	Negotiate Basic Capabilities. The TE transmits a RNG-REQ message with a valid Vendor ID TLV.
Test purpose	Check that the IUT: Transmits a RNG-RSP with a valid Vendor-specific Information TLV and that this TLV contains a Vendor ID value that is assigned to the IUT's vendor.

TP ID	BS/MS/PMP/NE/NR/BV-007
Reference	
Selection criteria	PIC_VENDOR_SPECIFIC_INFO
Initial condition	Negotiate Basic Capabilities. The TE transmits a RNG-REQ message with a Vendor-specific Information TLV. The first TLV inside this TLV is not of Vendor ID Type.
Test purpose	Check that the IUT: Transmits a RNG-RSP without a Vendor-specific Information TLV. (The absence of the RNG-RSP Vendor-specific Information TLV indicates that the RNG-REQ message's Vender-specific Information TLV has been discarded.)

TP ID	TP/BS/MS/PMP/NE/NR/TI-000
Reference	Clauses 6.3.2.3.7, 6.3.9.9
Selection criteria	
Initial condition	Wait for REG-REQ
Test purpose	Check that the IUT: After expiry of timer T17, on receipt of a REG-REQ, does not send a REG-RSP.

5.2.2.4.1.7 Transfer Operation Parameters (TOP)

TP ID	BS/MS/PMP/NE/TOP/BV-000
Reference	Clauses 6.3.2.3.28-29, 6.3.9.12
Selection criteria	PIC_managed_SS
Initial condition	Wait for TFTP-CPLT
Test purpose	Check that the IUT: On receipt of a TFTP-CPLT, sends a TFTP-RSP with a MAC header containing the HT bit set to 0 and the associated Primary CID.

TP ID	BS/MS/PMP/NE/TOP/TI-000
Reference	Clauses 6.3.2.3.28-29, 6.3.9.12
Selection criteria	PIC_managed_SS
Initial condition	Wait for TFTP-CPLT
Test purpose	Check that the IUT: After the expiry of timer T13, on receipt of a TFTP-CPLT, does not send a TFTP-RSP.

5.2.2.4.2 Dynamic Services (DS)

5.2.2.4.2.1 Addition (AD)

TP ID	BS/MS/PMP/DS/AD/BV-000
Reference	Clauses 6.3.2.3.28-29, 6.3.9.12
Selection criteria	
Initial condition	Wait for TFTP-CPLT
Test purpose	Check that the IUT: On receipt of a TFTP-CPLT, sends a TFTP-RSP, and on receipt of a DSA-REQ, sends a DSA-RSP containing the associated Transaction ID, the Confirmation Code set to OK/success and the HMAC tuple.

5.2.2.4.2.1.1 SS-Initiated (SS-INI)

TP ID	BS/MS/PMP/DS/AD/SS-INI/BV-000
Reference	Clauses 6.3.2.3.10-11, 6.3.9.12, 6.3.14.7.1.1, 6.3.14.9.3, 11.13
Selection criteria	Explicitly including all traffic parameters
Initial condition	IUT has authorized and registered the test equipment, DSA-Remote Begin
Test purpose	Check that the IUT: On receipt of a DSA-REQ, sends a DSX-RVD with a MAC header containing the HT bit set to 0 and the associated Primary CID and then a DSA-RSP with a MAC header containing the HT bit set to 0 and the Primary CID.
Parameter values	Type 24/25 = PIXIT QoSParamSet = PIXIT

TP ID	BS/MS/PMP/DS/AD/SS-INI/BV-001
Reference	Clauses 6.3.2.3.10-11, 6.3.9.12, 6.3.14.7.1.1, 6.3.14.9.3, 11.13
Selection criteria	Explicitly including all traffic parameters
Initial condition	IUT has authorized and registered the test equipment, DSA-Remote Begin
Test purpose	Check that the IUT: On receipt of a DSA-REQ, sends a DSX-RVD containing the associated Transaction ID and the Confirmation Code set to OK/success and then a DSA-RSP containing the associated Transaction ID, the Confirmation Code set to OK/success and the HMAC tuple.
Parameter values	Type 24/25 = PIXIT QoSParamSet = PIXIT

TP ID	BS/MS/PMP/DS/AD/SS-INI/BV-002
Reference	Clauses 6.3.2.3.10-11, 6.3.9.12, 6.3.14.7.1.1, 6.3.14.9.3, 11.13
Selection criteria	Explicitly including all traffic parameters
Initial condition	IUT has authorized and registered the test equipment, DSA-Remote Begin
Test purpose	Check that the IUT: On receipt of a DSA-REQ containing the Service Flow Parameters set to an unsupported value, sends a DSX-RVD containing the associated Transaction ID and the Confirmation Code set to OK/success and then a DSA-RSP containing the associated Transaction ID, the Confirmation Code set to any reject reason, the Service Flow Error Parameters reflecting the unsupported value and the HMAC tuple.

TP ID	BS/MS/PMP/DS/AD/SS-INI/BV-003
Reference	Clauses 6.3.2.3.12, 6.3.9.12, 6.3.14.7.1.1, 6.3.14.9.3, 11.13
Selection criteria	Explicitly including all traffic parameters
Initial condition	DSA-Remote DSA-ACK pending
Test purpose	Check that the IUT: On receipt of a DSA-ACK containing the Confirmation Code set to OK/success, accepts this message.
Parameter values	Type 24/25 = PIXIT QoSParamSet = PIXIT

TP ID	BS/MS/PMP/DS/AD/SS-INI/BV-004
Reference	Clauses 6.3.2.3.12, 6.3.9.12, 6.3.14.7.1.1, 6.3.14.9.3, 11.13
Selection criteria	Explicitly including all traffic parameters
Initial condition	DSA-Remote DSA-ACK pending
Test purpose	Check that the IUT: On receipt of a DSA-ACK containing the Confirmation Code set to reject-other, accepts this message.
Parameter values	Type 24/25 = PIXIT QoSParamSet = PIXIT

TP ID	BS/MS/PMP/DS/AD/SS-INI/BV-005
Reference	Clauses 6.3.2.3.12, 6.3.9.12, 6.3.14.7.1.1, 6.3.14.9.3, 11.13
Selection criteria	Explicitly including all traffic parameters
Initial condition	DSA-Remote Holding down
Test purpose	Check that the IUT: On receipt of a DSA-ACK containing the Confirmation Code set to OK/success, takes no action.

TP ID	BS/MS/PMP/DS/AD/SS-INI/BV-006
Reference	Clauses 6.3.2.3.10-11, 6.3.9.12, 6.3.14.7.1.1, 6.3.14.9.3, 11.13
Selection criteria	Explicitly including all traffic parameters
Initial condition	DSA-Remote Holding down
Test purpose	Check that the IUT: On receipt of a DSA-ACK containing the Confirmation Code set to reject-other, takes no action.
Parameter values	Type 24/25 = PIXIT QoSParamSet = PIXIT

TP ID	BS/MS/MP/DS/AD/SS-INI/BO-000
Reference	Clause 7.3.2
Selection criteria	
Initial condition	Operational.
Test purpose	The tester transmits a valid DSA-REQ with an unauthorized SAID. Check that the IUT: Transmits a DSA-RSP to refuse the service flow associated with the unauthorized SAID.

TP ID	BS/MS/PMP/DS/AD/SS-INI/TI-000
Reference	Figure 112, table 340 "DSx Request Retries"
Selection criteria	Explicitly including all traffic parameters
Initial condition	DSA-Remote DSA-ACK pending
Test purpose	Check that the IUT: On receipt of a DSA-REQ for n times, each time before the expiry of timer T8, sends a DSA-RSP for each DSA-REQ.
Parameter values	n defaults to 3. Type 24/25 = PIXIT QoSParamSet = PIXIT

TP ID	BS/MS/PMP/DS/AD/SS-INI/TI-001
Reference	Figure 112, table 340 "DSx Request Retries"
Selection criteria	Explicitly including all traffic parameters
Initial condition	DSA-Remote DSA-ACK pending
Test purpose	Check that the IUT: On receipt of a DSA-REQ for more than n times, each time before the expiry of timer T8, takes no action.
Parameter values	n defaults to 3. Type 24/25 = PIXIT QoSParamSet = PIXIT

TP ID	BS/MS/PMP/DS/AD/SS-INI/TI-002
Reference	Figure 112, table 340 "DSx Response Retries"
Selection criteria	Explicitly including all traffic parameters
Initial condition	DSA-Remote DSA-ACK pending
Test purpose	Check that the IUT: On expiry of timer T8 and on no action from the test equipment, sends for n times the DSP-RSP.
Parameter values	n defaults to 3. Type 24/25 = PIXIT QoSParamSet = PIXIT

5.2.2.4.2.1.2   BS-Initiated (BS-INI)

TP ID	BS/MS/PMP/DS/AD/BS-INI/BV-000
Reference	Clauses 6.3.2.3.10, 6.3.14.7.1.2, 6.3.14.9.3, 11.13
Selection criteria	Explicitly including all traffic parameters
Initial condition	IUT has authorized and registered the test equipment, DSA-Local Begin
Test purpose	Check that the IUT: When it wishes to create an uplink or downlink Service flow, or both, sends a DSA-REQ with a MAC header containing the HT bit set to 0 and the Primary CID, the Transaction ID, the Service Flow Parameters, the Convergence Sublayer Parameters Encodings and the HMAC Tuple.
Parameter values	Type 24/25 = PIXIT QoSParamSet = PIXIT

TP ID	BS/MS/PMP/DS/AD/BS-INI/BV-001
Reference	Clauses 6.3.2.3.10-12, 6.3.14.7.1.2, 6.3.14.9.3, 11.13
Selection criteria	Explicitly including all traffic parameters
Initial condition	DSA-Local DSA-RSP Pending
Test purpose	Check that the IUT: On receipt of a DSA-RSP containing the Confirmation Code set to OK/success and the HMAC tuple, sends a DSA-ACK containing the associated Transaction ID, the Confirmation Code set to OK/success and the HMAC tuple.
Parameter values	Type 24/25 = PIXIT QoSParamSet = PIXIT

TP ID	BS/MS/PMP/DS/AD/BS-INI/BV-002
Reference	Clauses 6.3.2.3.10-12, 6.3.14.7.1.2, 6.3.14.9.3, 11.13
Selection criteria	Explicitly including all traffic parameters
Initial condition	DSA-Local DSA-RSP Pending
Test purpose	Check that the IUT: On receipt of a DSA-RSP containing the Confirmation Code set to reject-other and the Service Flow Error Parameters, sends a DSA-ACK containing the associated Transaction ID, the Confirmation Code set to OK/success, the associated Service Flow Error Parameters and the HMAC tuple.
Parameter values	Type 24/25 = PIXIT QoSParamSet = PIXIT

TP ID	BS/MS/PMP/DS/AD/BS-INI/BV-003
Reference	Clauses 6.3.2.3.10-12, 6.3.14.7.1.2, 6.3.14.9.3, 11.13
Selection criteria	Explicitly including all traffic parameters
Initial condition	DSA-Local Holding Down
Test purpose	Check that the IUT: On receipt of a DSA-RSP containing the Confirmation Code set to OK/success, sends a DSA-ACK containing the associated Transaction ID, the Confirmation Code set to OK/success and the HMAC tuple.
Parameter values	Type 24/25 = PIXIT QoSParamSet = PIXIT

TP ID	BS/MS/PMP/DS/AD/BS-INI/BV-004
Reference	Clause 7.3.2
Selection criteria	
Initial condition	Operational.
Test purpose	Check that the IUT: To initiate a dynamic service creation for a new SA, transmits first the SA Add message and then the SA in a DSA-REQ message.

TP ID	BS/MS/PMP/DS/AD/BS-INI/TI-000
Reference	Figure 107, table 340 "DSx Request Retries"
Selection criteria	Explicitly including all traffic parameters
Initial condition	IUT has authorized and registered the test equipment, DSA-Local Begin
Test purpose	Check that the IUT: For an IUT initiated DSA procedure, when each time timer T7 expires and no reply is received, re-sends a DSA-REQ n times and stops the initiated procedure.
Parameter values	n defaults to 3. Type 24/25 = PIXIT QoSParamSet = PIXIT

TP ID	BS/MS/PMP/DS/AD/BS-INI/TI-001
Reference	Figure 109, table 340 "DSx Response Retries"
Selection criteria	Explicitly including all traffic parameters
Initial condition	IUT has authorized and registered the test equipment, DSA-Local Begin
Test purpose	Check that the IUT: For an IUT initiated DSA procedure, when n-1 times no reply is received, at the nth time, before the expiry of timer T10, on receipt of a DSA-RSP containing the Confirmation Code set to OK/success, sends a DSA-ACK containing the associated Transaction ID and the Confirmation Code set to OK/success.
Parameter values	n defaults to 3. Type 24/25 = PIXIT QoSParamSet = PIXIT

TP ID	BS/MS/PMP/DS/AD/BS-INI/TI-002
Reference	Figure 109, table 340 "DSx Response Retries"
Selection criteria	Explicitly including all traffic parameters
Initial condition	IUT has authorized and registered the test equipment, DSA-Local Begin
Test purpose	Check that the IUT: For an IUT initiated DSA procedure, when n times no reply is received, at the nth time, before the expiry of timer T10, on receipt of a DSA-RSP containing the Confirmation Code set to reject-other and the Service Flow Error Parameters, sends a DSA-ACK containing the associated Transaction ID and the Confirmation Code set to OK/success, the associated Service Flow Error Parameters and the HMAC tuple.
Parameter values	n defaults to 3. Type 24/25 = PIXIT QoSParamSet = PIXIT

5.2.2.4.2.2   Change (CH)

5.2.2.4.2.2.1   SS-Initiated (SS-INI)

TP ID	BS/MS/PMP/DS/CH/SS-INI/BV-000
Reference	Clauses 6.3.2.3.13-15, 6.3.14.9.4, 11.13
Selection criteria	Explicitly including all traffic parameters
Initial condition	IUT has authorized and registered the test equipment, DSC-Remote Begin
Test purpose	Check that the IUT: On receipt of a DSC-REQ, sends a DSX-RVD with a MAC header containing the HT bit set to 0 and the associated Primary CID, the associated Transaction ID, and the Confirmation Code set to OK/success and then sends a DSC-RSP with a MAC header containing the HT bit set to 0 and the associated Primary CID, the associated Transaction ID, the Confirmation Code set to OK/success, and the HMAC tuple.
Parameter values	Type 24/25 = PIXIT Bit Rate = PIXIT

TP ID	BS/MS/PMP/DS/CH/SS-INI/BV-001
Reference	Clauses 6.3.2.3.13-15, 6.3.14.9.4, 11.13
Selection criteria	Explicitly including all traffic parameters
Initial condition	IUT has authorized and registered the test equipment, DSC-Remote Begin
Test purpose	Check that the IUT: On receipt of a DSC-REQ containing the Service Flow Parameters set to an unsupported value, sends a DSX-RVD containing the associated Transaction ID and the Confirmation Code set to OK/success and then a DSC-RSP containing the associated Transaction ID, the Confirmation Code set to any reject reason, the Service Flow Error Parameters reflecting the unsupported value and the HMAC tuple.
Parameter values	Type 24/25 = PIXIT Bit Rate = PIXIT

TP ID	BS/MS/PMP/DS/CH/SS-INI/BV-002
Reference	Clauses 6.3.2.3.15, 6.3.14.9.4, 11.13
Selection criteria	Explicitly including all traffic parameters
Initial condition	DSC-Remote DSC-ACK pending
Test purpose	Check that the IUT: On receipt of a DSC-ACK containing the Confirmation Code set to OK/success, accepts this message.
Parameter values	Type 24/25 = PIXIT Bit Rate = PIXIT

TP ID	BS/MS/PMP/DS/CH/SS-INI/BV-003
Reference	Clauses 6.3.2.3.15, 6.3.14.9.4, 11.13
Selection criteria	Explicitly including all traffic parameters
Initial condition	DSC-Remote DSC-ACK pending
Test purpose	Check that the IUT: On receipt of a DSC-ACK containing the Confirmation Code set to reject-other, accepts this message.
Parameter values	Type 24/25 = PIXIT Bit Rate = PIXIT

TP ID	BS/MS/PMP/DS/CH/SS-INI/BV-004
Reference	Clauses 6.3.2.3.15, 6.3.14.9.4, 11.13
Selection criteria	Explicitly including all traffic parameters
Initial condition	DSC-Remote Holding down
Test purpose	Check that the IUT: On receipt of a DSC-ACK containing the Confirmation Code set to OK/success, takes no action.
Parameter values	Type 24/25 = PIXIT Bit Rate = PIXIT

TP ID	BS/MS/PMP/DS/CH/SS-INI/BV-005
Reference	Clauses 6.3.2.3.15, 6.3.14.9.4, 11.13
Selection criteria	Explicitly including all traffic parameters
Initial condition	DSC-Remote Holding down
Test purpose	Check that the IUT: On receipt of a DSC-ACK containing the Confirmation Code set to reject-other, takes no action.
Parameter values	Type 24/25 = PIXIT Bit Rate = PIXIT

TP ID	BS/MS/PMP/DS/CH/SS-INI/BV-006
Reference	Clauses 6.3.14.9.4, 11.13
Selection criteria	Explicitly including all traffic parameters
Initial condition	DSC-Local Begin
Test purpose	Check that the IUT: On receipt of a DSC-REQ containing the Service Flow Parameters with the Service Flow Identifier and a null ActiveQoSParamSet, deactivates the referenced Service Flow.
Parameter values	Type 24/25 = PIXIT

TP ID	BS/MS/PMP/DS/CH/SS-INI/BV-007
Reference	Clause 11.13
Selection criteria	Explicitly including all traffic parameters
Initial condition	DSC-Local Begin
Test purpose	Check that the IUT: On receipt of a DSC-REQ containing the Service Flow Parameters with the Service Flow Identifier and only an AdmitQoSParamSet, deactivates the referenced Service Flow.
Parameter values	Type 24/25 = PIXIT

TP ID	BS/MS/PMP/DS/CH/SS-INI/BV-008
Reference	Clause 11.13
Selection criteria	Explicitly including all traffic parameters
Initial condition	DSC-Local Begin
Test purpose	Check that the IUT: On receipt of a DSC-REQ containing the Service Flow Parameters with the Service Flow Identifier, a null AdmitQoSParamSet and null ActiveQoSParamSet, deadmits the referenced Service Flow.
Parameter values	Type 24/25 = PIXIT

TP ID	BS/MS/PMP/DS/CH/SS-INI/TI-000
Reference	Figure 112, table 340 "DSx Request Tries"
Selection criteria	Explicitly including all traffic parameters
Initial condition	DSC-Remote DSC-ACK pending
Test purpose	Check that the IUT: On receipt of a DSC-REQ for n times, each time before the expiry of timer T8, sends a DSC-RSP for each DSC-REQ.
Parameter values	n defaults to 3. Type 24/25 = PIXIT Bit Rate = PIXIT

TP ID	BS/MS/PMP/DS/CH/SS-INI/TI-001
Reference	Figure 112, table 340 "DSx Request Tries"
Selection criteria	Explicitly including all traffic parameters
Initial condition	DSC-Remote DSC-ACK pending
Test purpose	Check that the IUT: On receipt of a DSC-REQ for more than n times, each time before the expiry of timer T8, takes no action.
Parameter values	n defaults to 3. Type 24/25 = PIXIT Bit Rate = PIXIT

TP ID	BS/MS/PMP/DS/CH/SS-INI/TI-002
Reference	Figure 112, table 340 "DSx Response Tries"
Selection criteria	Explicitly including all traffic parameters
Initial condition	DSC-Remote DSC-ACK pending
Test purpose	Check that the IUT: On expiry of timer T8 and on no action from the test equipment, sends for n times the DSP-RSP.
Parameter values	n defaults to 3. Type 24/25 = PIXIT Bit Rate = PIXIT

5.2.2.4.2.2.2   BS-Initiated (BS-INI)

TP ID	BS/MS/PMP/DS/CH/BS-INI/BV-000
Reference	Clauses 6.3.2.3.13, 6.3.14.7.1.2, 6.3.14.9.4, 11.13
Selection criteria	Explicitly including all traffic parameters
Initial condition	IUT has authorized and registered the test equipment, DSC-Local Begin
Test purpose	Check that the IUT: When it wishes to change an uplink or downlink Service flow, or both, sends a DSC-REQ with a MAC header containing the HT bit set to 0 and the Primary CID, the Transaction ID, the Service Flow Parameters, and the HMAC Tuple.
Parameter values	Type 24/25 = PIXIT Bit Rate = PIXIT

TP ID	BS/MS/PMP/DS/CH/BS-INI/BV-001
Reference	Clauses 6.3.2.3.13-15, 6.3.14.7.1.2, 6.3.14.9.4, 11.13
Selection criteria	Explicitly including all traffic parameters
Initial condition	DSC-Local DSC-RSP Pending
Test purpose	Check that the IUT: On receipt of a DSC-RSP containing the Confirmation Code set to OK/success and the HMAC tuple, sends a DSC-ACK containing the associated Transaction ID, the Confirmation Code set to OK/success and the HMAC tuple.
Parameter values	Type 24/25 = PIXIT Bit Rate = PIXIT

TP ID	BS/MS/PMP/DS/CH/BS-INI/BV-002
Reference	Clauses 6.3.2.3.13-15, 6.3.14.7.1.2, 6.3.14.9.4, 11.13
Selection criteria	Explicitly including all traffic parameters
Initial condition	DSC-Local DSC-RSP Pending
Test purpose	Check that the IUT: On receipt of a DSC-RSP containing the Confirmation Code set to reject-other and the Service Flow Error Parameters, sends a DSC-ACK containing the associated Transaction ID, the Confirmation Code set to OK/success, the associated Service Flow Error Parameters and the HMAC tuple.
Parameter values	Type 24/25 = PIXIT Bit Rate = PIXIT

TP ID	BS/MS/PMP/DS/CH/BS-INI/BV-003
Reference	Clauses 6.3.2.3.13-15, 6.3.14.7.1.2, 6.3.14.9.4, 11.13
Selection criteria	Explicitly including all traffic parameters
Initial condition	DSC-Local Holding Down
Test purpose	Check that the IUT: On receipt of a DSC-RSP containing the Confirmation Code set to OK/success, sends a DSC-ACK containing the associated Transaction ID, the Confirmation Code set to OK/success and the HMAC tuple.
Parameter values	Type 24/25 = PIXIT Bit Rate = PIXIT

TP ID	BS/MS/PMP/DS/CH/BS-INI/BV-004
Reference	Clause 7.3.2
Selection criteria	
Initial condition	Operational.
Test purpose	Check that the IUT: To initiate a dynamic service creation for a new SA, transmits first the SA Add message and then the SA in a DSC-REQ message.

TP ID	BS/MS/PMP/DS/CH/BS-INI/BO-000
Reference	Clauses 6.3.14.9.4, 11.13
Selection criteria	Explicitly including all traffic parameters
Initial condition	DSC-Local DSC-RSP Pending
Test purpose	Check that the IUT: On receipt of a DSC-REQ, allows the BS-initiated transaction to complete (ignores the DSC-REQ), and on receipt of a DSC-RSP containing the Confirmation Code set to OK/success and the HMAC tuple, sends a DSC-ACK containing the associated Transaction ID, the Confirmation Code set to OK/success and the HMAC tuple.
Parameter values	Type 24/25 = PIXIT Bit Rate = PIXIT

TP ID	BS/MS/PMP/DS/CH/BS-INI/TI-000
Reference	Figure 116, table 340 "DSx Request Tries"
Selection criteria	Explicitly including all traffic parameters
Initial condition	IUT has authorized and registered the test equipment, DSC-Local Begin
Test purpose	Check that the IUT: For an IUT initiated DSC procedure, when each time timer T7 expires and no reply is received, re-sends a DSC-REQ n times and stops the initiated procedure.
Parameter values	n defaults to 3. Type 24/25 = PIXIT Bit Rate = PIXIT

TP ID	BS/MS/PMP/DS/CH/BS-INI/TI-001
Reference	Figure 116, table 340 "DSx Response Tries"
Selection criteria	Explicitly including all traffic parameters
Initial condition	IUT has authorized and registered the test equipment, DSC-Local Begin
Test purpose	Check that the IUT: For an IUT initiated DSC procedure, when n-1 times no reply is received, at the nth time, before the expiry of timer T10, on receipt of a DSC-RSP containing the Confirmation Code set to OK/success, sends a DSC-ACK containing the associated Transaction ID and the Confirmation Code set to OK/success.
Parameter values	n defaults to 3. Type 24/25 = PIXIT Bit Rate = PIXIT

TP ID	BS/MS/PMP/DS/CH/BS-INI/TI-002
Reference	Figure 118, table 340 "DSx Response Tries"
Selection criteria	Explicitly including all traffic parameters
Initial condition	IUT has authorized and registered the test equipment, DSC-Local Begin
Test purpose	Check that the IUT: For an IUT initiated DSC procedure, when n-1 times no reply is received, at the nth time, before the expiry of timer T10, on receipt of a DSC-RSP containing the Confirmation Code set to reject-other and the Service Flow Error Parameters, sends a DSC-ACK containing the associated Transaction ID and the Confirmation Code set to OK/success, the associated Service Flow Error Parameters and the HMAC tuple.
Parameter values	n defaults to 3. Type 24/25 = PIXIT Bit Rate = PIXIT

5.2.2.4.2.3   Release (RL)

5.2.2.4.2.3.1   SS-Initiated (SS-INI)

TP ID	BS/MS/PMP/DS/RL/SS-INI/BV-000
Reference	Clauses 6.3.2.3.16-17, 6.3.14.9.5, 11.13
Selection criteria	
Initial condition	IUT has authorized and registered the test equipment, DSD-Remote Begin
Test purpose	Check that the IUT: On receipt of a DSD-REQ, sends a DSD-RSP with a MAC header containing the HT bit set to 0 and the associated Primary CID, the associated Service Flow identifier, the associated Transaction ID, the Confirmation Code set to OK/success, and the HMAC tuple.
Parameter values	Type 24/25 = PIXIT

5.2.2.4.2.3.2   BS-Initiated (BS-INI)

TP ID	BS/PMP/DS/RL/BS-INI/BV-000
Reference	Clauses 6.3.2.3.16, 6.3.14.9.5, 11.13
Selection criteria	
Initial condition	IUT has authorized and registered the test equipment, DSD-Local Begin
Test purpose	Check that the IUT: When it wishes to delete an uplink or downlink Service flow, or both, sends a DSD-REQ with a MAC header containing the HT bit set to 0 and the Primary CID, the Service Flow Identifier, the Transaction ID and the HMAC Tuple.
Parameter values	Type 24/25 = PIXIT

TP ID	BS/PMP/DS/RL/BS-INI/BV-001
Reference	Clauses 6.3.2.3.16-17, 6.3.14.9.5, 11.13
Selection criteria	
Initial condition	DSD-Local DSD-RSP Pending
Test purpose	Check that the IUT: On receipt of a DSD-RSP containing the associated Service Flow identifier, the associated Transaction ID, the Confirmation Code set to OK/success and the HMAC tuple, accepts it.
Parameter values	Type 24/25 = PIXIT

TP ID	BS/PMP/DS/RL/BS-INI/TI-000
Reference	Figure 125, table 340 "DSx Request Tries"
Selection criteria	Explicitly including all traffic parameters
Initial condition	IUT has authorized and registered the test equipment, DSD-Local Begin
Test purpose	Check that the IUT: For an IUT initiated DSD procedure, when each time timer T7 expires and no reply is received, re-sends a DSD-REQ n times and stops the initiated procedure.
Parameter values	n defaults to 3. Type 24/25 = PIXIT

5.2.2.4.2.4 Periodic Ranging (PR)

TP ID	BS/MS/PMP/DS/PR/BV-000
Reference	Clauses 6.3.2.3.4, 6.3.10
Selection criteria	
Initial condition	Operational
Test purpose	Check that the IUT: Sends at least every T4 s a UL-MAP containing the Uplink Channel ID, the UCD Count, The Number Of Elements, the Alloc Start Time, the Map Information Elements.

TP ID	BS/MS/PMP/DS/PR/BV-001
Reference	Clauses 6.3.2.3.5-6, 6.3.10
Selection criteria	
Initial condition	Wait for polled RNG-REQ
Test purpose	Check that the IUT: On receipt of a RNG-REQ, and the signal level is good enough, sends a RNG-RSP with a MAC header containing the HT bit set to 0 and the Basic CID, the Uplink Channel ID, the Timing Adjust Information, the Power Adjust Information, and the Ranging Status set to success.

TP ID	BS/MS/PMP/DS/PR/BV-002
Reference	Clauses 6.3.2.3.5-6, 6.3.10
Selection criteria	
Initial condition	Wait for polled RNG-REQ
Test purpose	Check that the IUT: On receipt of a RNG-REQ, and the signal level is not good enough, sends a RNG-RSP containing a Ranging Status set to continue.

TP ID	BS/MS/PMP/DS/PR/BV-003
Reference	Clauses 6.3.2.3.5, 6.3.10.2
Selection criteria	
Initial condition	Operational
Test purpose	Check that the IUT: Grants bandwidth for an uplink transmission every T27 s.

TP ID	BS/MS/PMP/DS/PR/TI-000
Reference	Clauses 6.3.2.3.5-6, 6.3.10, table 340 "Invited Ranging Retries"
Selection criteria	
Initial condition	Polled Periodic Ranging
Test purpose	Check that the IUT: On no action of the test equipment, sends a RNG-RSP containing a Ranging Status set to continue for n times.
Parameter values	n ≥ 16 assuming that the "Invited Ranging Retries" item is correct. Clarification requested.

TP ID	BS/MS/PMP/DS/PR/TI-001
Reference	Clauses 6.3.2.3.5-6, 6.3.10, table 340 "Invited Ranging Retries"
Selection criteria	
Initial condition	Polled Periodic Ranging
Test purpose	Check that the IUT: Each time on receipt of a RNG-REQ, and the signal level is not good enough, sends n times a RNG-RSP containing a Ranging Status set to continue, and at the n+1 time, on receipt of a RNG-REQ, and the signal level is not good enough, sends a RNG-RSP containing a Ranging Status set to abort.
Parameter values	n ≥ 16 assuming that the "Invited Ranging Retries" item is correct. Clarification requested.

5.2.2.4.3 Adaptive Antenna Support (AA)

TP ID	BS/MS/PMP/AA/BV-000
Reference	Clause 6.3.2.3
Selection criteria	PIC_AAS AND (PIC_FDD OR (PIC_BS_implement_AAS_in_TDD)) (see clause 6.3.2.3.39)
Initial condition	
Test purpose	Check that the IUT: For the AAS portion of the frame, transmits the DL-MAP, UL-MAP, DCD, UCD, and CLK-CMP messages with the Basic CID.
Note	DL-MAP, UL-MAP, DCD, UCD, and CLK-CMP are transmitted with the Broadcast CID in the non-AAS portion of the frame.

TP ID	BS/MS/PMP/AA/BV-001
Reference	Clause 6.3.7.6.6, table 362 (row 4), table 365 (row 1)
Selection criteria	PIC_AAS
Initial condition	The IUT is operational. The TE has sent a RNG-REQ message with AAS broadcast capability TLV set to 0x01 (TE cannot receive broadcast messages.)
Test purpose	Check that the IUT: Transmits a RNG-RSP message with the AAS broadcast permission field set to 0x01 (Contention-based bandwidth requests forbidden). Then check that the IUT provides a polling mechanism to obtain the TE's bandwidth requirements or set to 0x00 (Contention-based bandwidth requests permitted) and correspondingly changes the array beam so that bandwidth requests are not lost.

TP ID	BS/MS/PMP/AA/BV-002
Reference	Clause 8.3.6.2.4
Selection criteria	PIC_AAS and PIC_FDD
Initial condition	IUT is operating.
Test purpose	Check that the IUT: In DL-MAP, indicates the switch from non-AAS to AAS-enabled traffic is marked with DIUC = 15 and the AAS_IE to indicate the subsequent allocations until the end of the frame. When used, the CID in the DL-MAP-IE shall be set to the Broadcast CID. Check that subsequent AAS PHY bursts start with the short preamble.

TP ID	BS/MS/PMP/AA/BV-003
Reference	Clause 8.3.6.2.4
Selection criteria	PIC_AAS and PIC_BS_implement_AAS_in_TDD
Initial condition	IUT is operating.
Test purpose	Check that the IUT: In DL-MAP, indicates the switch from non-AAS to AAS-enabled traffic is marked with DIUC = 15 and the AAS_IE to indicate the subsequent allocations until the start of the first UL-MAP allocation. When used, the CID in the DL-MAP-IE shall be set to the Broadcast ID. Check that subsequent AAS PHY bursts start with the short preamble.

TP ID	BS/MS/PMP/AA/BV-004
Reference	Clause 8.3.6.2.4
Selection criteria	PIC_AAS
Initial condition	IUT is operating.
Test purpose	Check that the IUT: In UL-MAP, indicates the switch from non-AAS to AAS-enabled traffic is marked with DIUC = 15 and the AAS_IE to indicate the subsequent AAS allocations until the end of the frame. When used, the CID in the DL-MAP-IE shall be set to the Broadcast CID. Check that subsequent AAS PHY bursts start with the short preamble.

5.2.2.4.4 Bandwidth Allocation (BA)

TP ID	BS/MS/PMP/BA/BV-000
Reference	Clause 6.3.2.3.4
Selection criteria	
Initial condition	
Test purpose	Check that the IUT: To allocate a bandwidth grant, uses the TE's Basic CID.

5.2.2.4.4.1   Bandwidth Requests (BR)

TP ID	BS/MS/PMP/BA/BR/BV-000
Reference	Clause 6.3.6.1-2
Selection criteria	Unicast polling + Normal request
Initial condition	IUT has authorized and registered the test equipment
Test purpose	Check that the IUT: While executing Unicast polling, on receipt of a Bandwidth Request Header containing an individual CID using the Request IE burst profile, sends a Grant Management Subheader containing the Basic CID.

TP ID	BS/MS/PMP/BA/BR/BV-001
Reference	Clause 6.3.6.1-2
Selection criteria	Unicast polling + PiggyBack request
Initial condition	IUT has authorized and registered the test equipment
Test purpose	Check that the IUT: While executing Unicast polling, on receipt of a Generic MAC Header containing an individual CID and a Grant Management Subheader (PiggyBack request) using the Request IE burst profile, sends a Grant Management Subheader containing the Basic CID.

TP ID	BS/MS/PMP/BA/BR/BV-002
Reference	Clause 6.3.6.1-2
Selection criteria	Multicast polling + Normal request
Initial condition	IUT has authorized and registered the test equipment
Test purpose	Check that the IUT: While executing Multicast polling, on receipt of a Bandwidth Request Header containing the Multicast CID using the Request IE burst profile, sends a Grant Management Subheader containing the Multicast CID.

TP ID	BS/MS/PMP/BA/BR/BV-003
Reference	Clause 6.3.6.1-2
Selection criteria	Multicast polling + PiggyBack request
Initial condition	IUT has authorized and registered the test equipment
Test purpose	Check that the IUT: While executing Multicast polling, on receipt of a Generic MAC Header containing the Multicast CID and a Grant Management Subheader (PiggyBack request) using the Request IE burst profile, sends a Grant Management Subheader containing the Multicast CID.

TP ID	BS/MS/PMP/BA/BR/BV-004
Reference	Clause 6.3.6.1-2
Selection criteria	Broadcast polling + Normal request
Initial condition	IUT has authorized and registered the test equipment
Test purpose	Check that the IUT: While executing Broadcast polling, on receipt of a Bandwidth Request Header containing the Broadcast CID using the Request IE burst profile, sends a Grant Management Subheader containing the Broadcast CID.

TP ID	BS/MS/PMP/BA/BR/BV-005
Reference	Clause 6.3.6.1-2
Selection criteria	Broadcast polling + PiggyBack request
Initial condition	IUT has authorized and registered the test equipment
Test purpose	Check that the IUT: While executing Broadcast polling, on receipt of a Generic MAC Header containing the Broadcast CID and a Grant Management Subheader (PiggyBack request) using the Request IE burst profile, sends a Grant Management Subheader containing the Broadcast CID.

TP ID	BS/MS/PMP/BA/BR/BV-006
Reference	Clauses 6.3.6.3, 6.3.7.4
Selection criteria	
Initial condition	IUT has authorized and registered the test equipment
Test purpose	Check that the IUT: While executing polling, accepts stuff bytes (0xFF) using the associated burst profile.

5.2.2.4.5 Channel Descriptors (CD)

TP ID	BS/MS/PMP/CD/BV-000
Reference	Clause 6.3.11, table 121
Selection criteria	
Initial condition	IUT is operating. The TE is simulating several SSs. The current Configuration Change Count is i.
Test purpose	Check that the IUT: To change the uplink channel descriptor, regularly transmits a UCD message with the Configuration Change Count = (i + 1 MOD 256) at least once to each simulated SS.

TP ID	BS/MS/PMP/CD/BV-001
Reference	Clause 6.3.11, table 121
Selection criteria	
Initial condition	IUT is operating. The TE is simulating several SSs. The current Configuration Change Count is i. To change the uplink channel descriptor, the IUT regularly transmitted a UCD message with the Configuration Change Count = (i + 1 MOD 256) at least once to each simulated SS.
Test purpose	Check that the IUT: To effect the change to the new uplink channel descriptor, transmits UL-MAPs with the UCD Count = (i + 1 MOD 256) and does not transmit UL-MAPs with UCD Count = i.

TP ID	BS/MS/PMP/CD/BV-002
Reference	Clause 6.3.11, table 122
Selection criteria	
Initial condition	IUT is operating. The TE is simulating several SSs. The current Configuration Change Count is i.
Test purpose	Check that the IUT: To change the downlink channel descriptor, regularly transmits a DCD message with the Configuration Change Count = (i + 1 MOD 256) at least once to each simulated SS.

TP ID	BS/MS/PMP/CD/BV-003
Reference	Clause 6.3.11, table 122
Selection criteria	
Initial condition	IUT is operating. The TE is simulating several SSs. The current Configuration Change Count is i. To change the downlink channel descriptor, the IUT regularly transmitted a DCD message with the Configuration Change Count = (i + 1 MOD 256) at least once to each simulated SS.
Test purpose	Check that the IUT: To effect the change to the new downlink channel descriptor, transmits DL-MAPs with the DCD Count = (i + 1 MOD 256) and does not transmit DL-MAPs with DCD Count = i.

TP ID	BS/MS/PMP/CD/BV-004
Reference	Clause 6.3.2.3.1, table 340
Selection criteria	
Initial condition	IUT is operating.
Test purpose	Check that the IUT: Transmits the DCD message periodically within a maximum interval of 10 seconds.
Note	Note that the periods differ from those in BS/MS/NE/TXP DCD test purposes.

TP ID	BS/MS/PMP/CD/BV-005
Reference	Clause 6.3.2.3.3, table 340
Selection criteria	
Initial condition	IUT is operating.
Test purpose	Check that the IUT: Transmits the UCD message periodically within a maximum interval of 10 seconds.
Note	Note that the periods differ from those in BS/MS/NE/TXP UCD test purposes.

TP ID	BS/MS/PMP/CD/BV-006
Reference	Clause 6.3.2.3.3
Selection criteria	
Initial condition	
Test purpose	Check that the IUT: Transmits a separate UCD message for each active uplink channel associated with the downlink channel.

5.2.2.4.6   Clock Comparison (CLK)

TP ID	BS/MS/PMP/CLK/BV-000
Reference	Clause 6.3.2.3.25, table 340
Selection criteria	PIC_SS_reconstruct_clock AND NOT PIC_AAS_option
Initial condition	The IUT is operational.
Test purpose	Check that the IUT: Transmits every 50 ms on a broadcast connection a valid CLK-CMP message.

TP ID	BS/MS/PMP/CLK/BV-001
Reference	Clause 6.3.2.3, table 340
Selection criteria	PIC_SS_reconstruct_clock AND PIC_AAS_option
Initial condition	The IUT is operational.
Test purpose	Check that the IUT: Transmits every 50 ms a valid CLK-CMP message either on a broadcast connection when the time to transmit is not in the AAS portion of the frame or on the Basic CID when the time to transmit is in the AAS portion of the frame.

5.2.2.4.7   Contention Resolution (CR)

TP ID	BS/MS/PMP/CR/BV-000
Reference	Clause 6.3.6.4
Selection criteria	PIC_focus_contention_support
Initial condition	The IUT is operational. The TE transmits a Focused Contention Transmission during a REQ Region-Focused.
Test purpose	Check that the IUT: Provides an uplink allocation to transmit a Bandwidth Request MAC PDU using the Broadcast CID with the OFDM Focused_Contention_IE specifying the Contention Channel, Contention Code, and Transmit Opportunity used by the TE.

TP ID	BS/MS/PMP/CR/BV-001
Reference	Clause 6.3.8.1
Selection criteria	
Initial condition	The IUT is operational.
Test purpose	Check that the IUT: Transmits the size of individual transmission opportunities for each type of contention IE is each UCD message and allocates bandwidth for contention IEs in integer multiples of this size.

5.2.2.4.8   DL Burst Profile Management (PM)

TP ID	BS/MS/PMP/PM/BV-000
Reference	Clause 6.3.2.3.2
Selection criteria	
Initial condition	
Test purpose	Check that the IUT: Base Station ID is programmable.

TP ID	BS/MS/PMP/PM/BV-001
Reference	Clause 6.3.2.3.4
Selection criteria	
Initial condition	
Test purpose	Check that the IUT: Each UL-MAP message containing at least one UL-MAP-IE that marks the end of the last allocated burst.

TP ID	BS/MS/PMP/PM/BV-002
Reference	Clause 6.3.2.3.4
Selection criteria	
Initial condition	
Test purpose	Check that the IUT: Transmits the UL-MAP-IEs in strict chronological order in each UL-MAP message.

TP ID	BS/MS/PMP/PM/BV-003
Reference	Clause 6.3.2.3.4
Selection criteria	
Initial condition	
Test purpose	Check that the IUT: Includes an Uplink_Burst_Profile in the UC for each UIUC used in the UL-MAP message

TP ID	BS/MS/PMP/PM/BV-004
Reference	Clause 6.3.2.3.21
Selection criteria	
Initial condition	IUT is operational. Having received a Basic CID allocation grant, the TE transmits a DPBC-REQ on the Basic CID. The IUT refuses the request.
Test purpose	Check that the IUT: Transmits a DPBC-RSP with the DIUC parameter unchanged from that before the TE transmitted the DPBC-REQ and continues transmitting at the same DIUC profile.

TP ID	BS/MS/PMP/PM/BV-005
Reference	Clause 6.3.2.3.21
Selection criteria	
Initial condition	IUT is operational. Having received an Initial Ranging Interval, the TE transmits in the interval a RNG-REQ for a more robust profile. The IUT refuses the request.
Test purpose	Check that the IUT: Transmits a RNG-RSP refusing the request and continues transmitting at the same DIUC profile.

TP ID	BS/MS/PMP/PM/BV-006
Reference	Clause 6.3.10.1, figure 79
Selection criteria	
Initial condition	IUT is operational. Having received a Basic CID allocation grant, the TE transmits a DPBC-REQ on the Basic CID for a more robust burst profile. The IUT accepts the request.
Test purpose	Check that the IUT: Upon receipt of the DPBC-REQ, immediately begins transmitting DL data using the new burst profile and transmits a valid DPBC-RSP.

TP ID	BS/MS/PMP/PM/BV-007
Reference	Clause 6.3.10.1, figure 79
Selection criteria	
Initial condition	IUT is operational. Having received an Initial Ranging Interval, the TE transmits in the interval a RNG-REQ for a more robust profile. The IUT accepts the request.
Test purpose	Check that the IUT: Upon receipt of the RNG-REQ, immediately begins transmitting DL data using the new burst profile and transmits a valid RNG-RSP.

TP ID	**BS/MS/PMP/PM/BV-008**
Reference	Clause 6.3.10.1, figure 80
Selection criteria	
Initial condition	IUT is operational. Having received a Basic CID allocation grant, the TE transmits a DPBC-REQ on the Basic CID for a less robust burst profile. The IUT accepts the request.
Test purpose	Check that the IUT: Upon receipt of the DPBC-REQ, immediately stops transmitting DL data, transmits the DPBC-RSP accepting the request, and then begins transmitting DL data on the weaker DIUC.

5.2.2.4.9   Encryption (EN)

5.2.2.4.9.1   Dynamic Service Addition (AD)

TP ID	**BS/MS/PMP/EN/AD/BV-000**
Reference	Clause 7.1.4
Selection criteria	
Initial condition	IUT is operational and adding a Dynamic Service (DSA) for each of several data transport connections.
Test purpose	Check that the IUT: Maps all transport connections to an existing SA.

TP ID	**BS/MS/PMP/EN/AD/BV-001**
Reference	Clause 7.1.4
Selection criteria	
Initial condition	IUT is operational and adding a Dynamic Service (DSA) for each of several multicast data transport connections.
Test purpose	Check that the IUT: Maps the multicast transport connections to any Static or Dynamic SA.

5.2.2.4.10   Multicast (MC)

TP ID	**BS/MS/PMP/MC/BV-000**
Reference	Clause 6.3.12, figure 92
Selection criteria	
Initial condition	IUT is operational.
Test purpose	Check that the IUT: To add the TE to a multicast polling group, transmits a MCA-REQ message with the Assignment field set to 0x01.

TP ID	**BS/MS/PMP/MC/BV-001**
Reference	Clause 6.3.12, figure 92
Selection criteria	
Initial condition	IUT is operational. To add the TE to a multicast polling group, the IUT has transmitted an MCA-REQ message with the Assignment field set to 0x01. The TE then transmitted an MCA-RSP message with a Confirmation Code set to 0x00 (successful). The TE then transmits on the Multicast CID.
Test purpose	Check that the IUT: Transmits the TE data to the multicast peers.

TP ID	**BS/MS/PMP/MC/BV-002**
Reference	Clause 6.3.12, figure 92
Selection criteria	
Initial condition	IUT is operational. To add the TE to a multicast polling group, the IUT has transmitted an MCA-REQ message with the Assignment field set to 0x01. The TE then transmitted an MCA-RSP message with a Confirmation Code set to 0x03 (unsuccessful). The TE then transmits on the Multicast CID.
Test purpose	Check that the IUT: Transmits no data to the multicast peers.

TP ID	BS/MS/PMP/MC/BV-003
Reference	Clause 6.3.12, figure 92
Selection criteria	
Initial condition	IUT is operational. To add the TE to a multicast polling group, the IUT has transmitted an MCA-REQ message with the Assignment field set to 0x01 and started T15. The TE does not respond.
Test purpose	Check that the IUT: Retransmits the MCA-REQ when T15 expires.

TP ID	BS/MS/PMP/MC/BV-004
Reference	Clause 6.3.12, figure 92
Selection criteria	
Initial condition	IUT is operational. To add the TE to a multicast polling group, the IUT has transmitted an MCA-REQ message with the Assignment field set to 0x01 and started T15. The TE never responds.
Test purpose	Check that the IUT: Each time for PXT_MCA_REQ_tries retransmits the MCA-REQ after T15 expires and then ceases transmitting the MCA-REQ.
Note	PXT_MCA_REQ_tries When attempts fail n times, figure 92 shows IUT going back to Wait state. Thus, the test for ceasing transmitting the MCA-REQ.

TP ID	BS/MS/PMP/MC/BV-005
Reference	Clause 6.3.12, figure 92
Selection criteria	
Initial condition	IUT is operational. The TE has been added to a multicast polling group and is transmitting on the Multicast CID.
Test purpose	Check that the IUT: To direct the TE to leave the multicast group, transmits a MCA-REQ message with the assignment field set to 0x00.

TP ID	BS/MS/PMP/MC/BV-006
Reference	Clause 6.3.12, figure 92
Selection criteria	
Initial condition	IUT is operational. The TE has been added to a multicast polling group and is transmitting on the Multicast CID. To direct the TE to leave the multicast group, the IUT transmits a MCA-REQ message with the assignment field set to 0x00. The TE then transmits an MCA-RSP field with the Confirmation Code 0x00 (Successful).
Test purpose	Check that the IUT: Transmits no further transmission opportunities for the former Multicast CID.

5.2.2.4.11   PHY Layer Support (PHY)

TP ID	BS/MS/PMP/PHY/BV-000
Reference	Clause 6.3.7.1
Selection criteria	PIC_FDD
Initial condition	IUT is operating, The TE is simulating both full-duplex and half-duplex SSs.
Test purpose	Check that the IUT: Does not allocate uplink bandwidth for the half-duplex SSs during the downlink including the propagation delay, SSTTG, and SSRTG.

TP ID	BS/MS/PMP/PHY/BV-001
Reference	Clause 6.3.7.4.3.1
Selection criteria	
Initial condition	The IUT is operating. The TE is simulating several SSs requiring enough bandwidth to force the IUT to transmit either a multicast or broadcast bandwidth opportunity.
Test purpose	Check that the IUT: Transmits the bandwidth opportunity granting an integer multiple of the "Bandwidth request opportunity size" in the UCD.

TP ID	BS/MS/PMP/PHY/BV-002
Reference	Clause 6.3.7.4.3.2
Selection criteria	
Initial condition	The IUT is ranging
Test purpose	Check that the IUT: Transmits UL-MAPs for initial ranging specifying an interval in the Initial Ranging IE equivalent to the maximum round-trip propagation delay plus the transmission of the RNG-REQ message and that the grant is an integer multiple of the "Ranging request opportunity size" in the UCD message.

5.2.2.4.12   Polling (PO)

TP ID	BS/MS/PMP/BA/PO/BV-000
Reference	Clauses 6.3.6.3, 6.3.7.4, 6.3.9.4, 8.3
Selection criteria	Unicast polling
Initial condition	IUT has authorized and registered the test equipment
Test purpose	Check that the IUT: Sends in every frame a UL-MAP containing the Basic CID and the Request IE.

TP ID	BS/MS/PMP/BA/PO/BV-001
Reference	Clauses 6.3.6.3, 6.3.7.4, 6.3.9.4, 8.3
Selection criteria	Unicast polling + Administrative policy of providing bandwidth
Initial condition	IUT has authorized and registered the test equipment
Test purpose	Check that the IUT: Sends in every frame a UL-MAP containing the Basic CID and the Data Grant Burst Type IE.

TP ID	BS/MS/PMP/BA/PO/BV-002
Reference	Clauses 6.3.6.3, 6.3.7.4, 6.3.9.4, 8.3
Selection criteria	Multicast polling
Initial condition	IUT has authorized and registered the test equipment
Test purpose	Check that the IUT: Sends in every frame a UL-MAP containing the Multicast CID and the Request IE.

TP ID	BS/MS/PMP/BA/PO/BV-003
Reference	Clauses 6.3.6.3, 6.3.7.4, 6.3.9.4, 8.3
Selection criteria	Broadcast polling
Initial condition	IUT has authorized and registered the test equipment
Test purpose	Check that the IUT: Sends in every frame a UL-MAP containing the Broadcast CID and the Request IE.

TP ID	BS/MS/PMP/BA/PO/BV-004
Reference	Clause 6.3.6.3.1
Selection criteria	
Initial condition	The IUT is operational and the TE is transmitting on a non-UGS connection.
Test purpose	Check that the IUT: To poll the IUT individually (unicast poll), transmits a Data Grant IE on the TE's Basic CID.

TP ID	BS/MS/PMP/BA/PO/BV-005
Reference	Clause 6.3.6.3.1
Selection criteria	
Initial condition	The IUT is operational and the TE is transmitting on a UGS connection. The TE does not set the PM bit (= 0x0) in the Grant Management subheader.
Test purpose	Check that the IUT: Does not poll the TE.

TP ID	BS/MS/PMP/BA/PO/BV-006
Reference	Clauses 6.3.6.3.1, 6.3.6.3.3
Selection criteria	
Initial condition	The IUT is operational and the TE is transmitting on a UGS connection. The TE sets the PM bit to 0x1 in one or more of the Grant Management subheaders in the uplink scheduling interval.
Test purpose	Check that the IUT: To poll the IUT individually (unicast poll), transmits a Data Grant IE on the TE's Basic CID.

TP ID	BS/MS/PMP/BA/PO/BV-007
Reference	Clause 6.3.6.3.2
Selection criteria	
Initial condition	The IUT is operational and is not transmitting on any active connection. The TE is simulating active SSs and one inactive SS. The active SSs are making so many poll requests that there is insufficient bandwidth to unicast poll the inactive SS on its Basic CID.
Test purpose	Check that the IUT: Polls the inactive SS using a multicast or broadcast bandwidth allocation on a corresponding CID.

TP ID	BS/MS/PMP/BA/PO/BV-008
Reference	Clause 6.3.6.3.3
Selection criteria	
Initial condition	The IUT is operational. The TE is simulating SSs with QoS requirements plus another SS transmitting on UGS connection. The interval of the UGS is too long to satisfy the QoS requirements of the other SSs.
Test purpose	Check that the IUT: Polls UGS connection SS on its Basic CID using a Data Grant IE.

5.2.2.4.13   Service Flow (SF)

TP ID	BS/MS/PMP/SF/BV-000
Reference	Clause 6.3.14.4
Selection criteria	PIC_service_classes
Initial condition	IUT is operational. The TE transmits a DSA-REQ with supplemental and overriding service parameters.
Test purpose	Check that the IUT: Includes the supplemental and overriding service parameters in the DSA-RSP.

TP ID	BS/MS/PMP/SF/BV-001
Reference	Clause 6.3.14.4
Selection criteria	PIC_service_classes
Initial condition	IUT is operational. An uplink service flow is active. The TE transmits a DSC-REQ with supplemental and overriding service parameters for the uplink service flow.
Test purpose	Check that the IUT: Includes the supplemental and overriding service parameters in the DSC-RSP.

TP ID	BS/MS/PMP/SF/BV-002
Reference	Clause 6.3.14.4
Selection criteria	PIC_service_classes
Initial condition	IUT is operational. One uplink service flow and one downlink service flow are active for a given Service Class Name. The test operator changes the definition of the Service Class Name with new QoS parameters.
Test purpose	Check that the IUT: Maintains the existing uplink and downlink service flow QoSs.

TP ID	BS/MS/PMP/SF/BV-003
Reference	Clause 6.3.14.4
Selection criteria	PIC_service_classes
Initial condition	IUT is operational. The TE transmits a DSA-REQ message using the Service Class Name for the Admitted QoS Parameter Set.
Test purpose	Check that the IUT: Transmits a DSA-RSP with the expanded set of service flow TLV coding.

TP ID	BS/MS/PMP/SF/BV-004
Reference	Clause 6.3.14.4
Selection criteria	PIC_service_classes
Initial condition	IUT is operational. An uplink service flow is active. The TE transmits a DSC-REQ message using the Service Class Name for the Admitted QoS Parameter Set.
Test purpose	Check that the IUT: Transmits a DSC-RSP with the expanded set of service flow TLV coding.

TP ID	BS/MS/PMP/SF/BV-005
Reference	Clause 6.3.14.6.2
Selection criteria	
Initial condition	IUT is operational. An uplink service flow is active. The TE transmits a DSC-REQ with an AdmittedQoSParameterSet that is a subset of the previous AdmittedQoSParameterSet used in activating the service flow. The ActiveQoSParameterSet remains a subset of the newer AdmittedQoSParameterSet.
Test purpose	Check that the IUT: Transmits a DSC-RSP accepting the newer AdmittedQoSParameterSet.

TP ID	BS/MS/PMP/SF/BV-006
Reference	Clause 6.3.14.6.2
Selection criteria	
Initial condition	IUT is operational. An uplink service flow is active. The TE transmits a DSC-REQ with an AdmittedQoSParameterSet that is a subset of the previous AdmittedQoSParameterSet used in activating the service flow. The ActiveQoSParameterSet is no longer a subset of the newer AdmittedQoSParameterSet.
Test purpose	Check that the IUT: Transmits a DSC-RSP rejecting the newer AdmittedQoSParameterSet.

TP ID	BS/MS/PMP/SF/BV-007
Reference	Clause 6.3.14.6.2
Selection criteria	
Initial condition	IUT is operational. An uplink service flow is admitted. The TE transmits DSA-REQ for additional service flows that will eventually exceed the provisioned QoS.
Test purpose	Check that the IUT: Transmits DSA-RSP allowing the additional service flows and reserving the service flow already admitted.

TP ID	BS/MS/PMP/SF/BV-008
Reference	Clause 6.3.14.8
Selection criteria	
Initial condition	IUT is operational. A downlink service flow is active. The TE transmits a DSC-REQ message with only an Admitted QoS parameters set. The DSC transaction is successful.
Test purpose	Check that the IUT: Deactivates the downlink service flow.

TP ID	BS/MS/PMP/SF/BV-009
Reference	Clause 6.3.14.8
Selection criteria	
Initial condition	IUT is operational. A downlink service flow is active. The TE transmits a DSC-REQ message with neither an Active QoS parameters set nor an Admitted QoS parameters set. The DSC transaction is successful. The TE then transmits a DSC-REQ message with only an Active QoS parameters set.
Test purpose	Check that the IUT: Deactivates the downlink service flow and does not reactivate it after the second DSC transaction completion.

TP ID	BS/MS/PMP/SF/BV-010
Reference	Clause 6.3.14.8
Selection criteria	
Initial condition	IUT is operational. A downlink service flow is active. The TE transmits a DSC-REQ message with both an Active QoS parameters set and an Admitted QoS parameters set. The DSC transaction is successful.
Test purpose	Check that the IUT: Implements the QoS for the newer Admitted and Active QoS parameter sets for the service flow.

TP ID	BS/MS/PMP/SF/BV-011
Reference	Clause 6.3.14.8
Selection criteria	
Initial condition	IUT is operational. A downlink service flow is active. The TE transmits a DSC-REQ message with both an Active QoS parameters set and an Admitted QoS parameters set. The Active QoS parameters set is not a subset of the Admitted QoS parameters set.
Test purpose	Check that the IUT: Causes the DSC transaction to fail and leaves QoS unchanged.

TP ID	BS/MS/PMP/SF/BV-012
Reference	Clause 11.13.4
Selection criteria	NOT PIC_multiple_QoS_Updates
Initial condition	IUT is operational. An uplink service flow is active. The TE transmits a DSC-REQ message with multiple updates to a single QoS parameter set.
Test purpose	Check that the IUT: Transmits a DSC-RSP message with CC 2 (reject-unrecognized-configuration-setting)

TP ID	BS/MS/PMP/SF/BV-013
Reference	Clause 11.13.3
Selection criteria	PIC_service_classes
Initial condition	IUT is operational. An uplink service flow is active. The TE transmits a DSC-REQ message using the specifying some QoS parameters and a Service Class Name that changes all the current parameters.
Test purpose	Check that the IUT: Provides the service specified by the new QoS parameters. For the remaining unspecified parameters, the Service Class Name values are used.

TP ID	BS/MS/PMP/SF/BV-014
Reference	Clauses 11.13.4, 6.3.14.2
Selection criteria	
Initial condition	IUT is operational. A service flow is preprovisioned.
Test purpose	Check that the IUT: Has a service flow encoding that specifies a ProvisionedQoSParamSet.

TP ID	BS/MS/PMP/SF/BV-015
Reference	Clauses 11.13.4, 6.3.14.2
Selection criteria	
Initial condition	IUT is operational. A service flow is provisioned after SS initialization.
Test purpose	Check that the IUT: Has a service flow encoding that specifies a ProvisionedQoSParamSet.

TP ID	BS/MS/PMP/SF/BV-016
Reference	Clause 11.13.4
Selection criteria	
Initial condition	IUT is operational.
Test purpose	Check that the IUT: Handles a single update to each of the Active and Admitted QoS parameter sets.

TP ID	BS/MS/PMP/SF/BV-017
Reference	Clause 11.13.7
Selection criteria	
Initial condition	IUT is operational. One service flow is established
Test purpose	Check that the IUT: Provides the maximum burst size for this service flow.

TP ID	BS/MS/PMP/SF/BV-018
Reference	Clause 11.13.10
Selection criteria	
Initial condition	IUT is operational. A service flow is established. The TE transmits a DSC-REQ message with a Vendor-specific QoS Parameters TLV. The first TLV inside this TLV is not of Vendor ID Type.
Test purpose	Check that: The IUT discards the Vendor-specific QoS Parameters TLV and that the service flow remains unchanged.
Note	Requires an Upper Tester.

TP ID	BS/MS/PMP/SF/BV-019
Reference	Clause 11.13.11
Selection criteria	
Initial condition	IUT is operational. The TE transmits a DSA-REQ message to establish an uplink service flow. The Service Flow Scheduling Type parameter is omitted in the message.
Test purpose	Check that: The IUT provides the Best Effort (BE) uplink scheduling service.

TP ID	BS/MS/PMP/SF/BV-020
Reference	Clause 11.13.11
Selection criteria	PXT_implementation_dependent_scheduling_service
Initial condition	IUT is operational. The TE transmits a DSA-REQ message to establish an uplink service flow with the Service Flow Scheduling Type parameter set to Undefined (1).
Test purpose	Check that: The IUT provides the uplink scheduling service defined in the Vendor-specific QoS parameters.

TP ID	BS/MS/PMP/SF/BV-021
Reference	Clause 11.13.11
Selection criteria	
Initial condition	IUT is operational. The TE transmits a DSA-REQ message to establish an uplink service flow with the Service Flow Scheduling Type parameter set to BE (2).
Test purpose	Check that: The IUT provides the Best Effort (BE) uplink scheduling service.

TP ID	BS/MS/PMP/SF/BV-022
Reference	Clause 11.13.11
Selection criteria	PIC_nrtPS_scheduling
Initial condition	IUT is operational. The TE transmits a DSA-REQ message to establish an uplink service flow with the Service Flow Scheduling Type parameter set to nrtPS (3).
Test purpose	Check that: The IUT provides the nrtPS uplink scheduling service.

TP ID	BS/MS/PMP/SF/BV-023
Reference	Clause 11.13.11
Selection criteria	PIC_rtPS_scheduling
Initial condition	IUT is operational. The TE transmits a DSA-REQ message to establish an uplink service flow with the Service Flow Scheduling Type parameter set to rtPS (4).
Test purpose	Check that: The IUT provides the rtPS uplink scheduling service.

TP ID	BS/MS/PMP/SF/BV-024
Reference	Clause 11.13.11
Selection criteria	PIC_UGS_scheduling
Initial condition	IUT is operational. The TE transmits a DSA-REQ message to establish an uplink service flow with the Service Flow Scheduling Type parameter set to UGS (6).
Test purpose	Check that: The IUT provides the UGS uplink scheduling service.

TP ID	BS/MS/MP/SF/BV-025
Reference	Clause 11.13.14
Selection criteria	
Initial condition	IUT is operational. The TE initiates a DSA downlink transaction with a Maximum Latency parameter requirement. This service flow does not exceed the minimum downlink reserved rate. The IUT accepts the service flow addition. The service flow is established.
Test purpose	Check that the IUT: Satisfies the maximum latency requirement for this service flow.

5.2.2.4.14 Uplink Scheduling (US)

TP ID	BS/MS/PMP/US/BV-000
Reference	Clause 6.3.5.2.1
Selection criteria	
Initial condition	UGS scheduling in use for this connection.
Test purpose	Check that the IUT: Transmits Data Grant Burst IEs at periodic intervals based upon the Minimum Reserved Traffic Rate of the service whose size is sufficient or larger to hold the fixed length data (with associated generic MAC header and Grant management subheader).

TP ID	BS/MS/PMP/US/BV-001
Reference	Clause 6.3.5.2.1
Selection criteria	
Initial condition	UGS scheduling in use for this connection.
Test purpose	Check that the IUT: Sets the Request/Transmission policy to prohibit the TE from using contention request opportunities on this connection.

TP ID	BS/MS/PMP/US/BV-002
Reference	Clause 6.3.5.2.1
Selection criteria	
Initial condition	UGS scheduling in use for this connection. The tester transmits a Grant Management field with the Slip Indicator bit set to 0.
Test purpose	Check that the IUT: Does not allocate more bandwidth than that of the Maximum Sustained Traffic Rate parameter of the Active QoS Parameter set.

TP ID	BS/MS/PMP/US/BV-003
Reference	Clause 6.3.5.2.1
Selection criteria	
Initial condition	UGS scheduling in use for this connection. The tester transmits a Grant Management field with the Slip Indicator bit set to 1.
Test purpose	Check that the IUT: Does not allocate more bandwidth than that of the Maximum Sustained Traffic Rate parameter of the Active QoS Parameter set or grants up to 1% additional bandwidth.

TP ID	BS/MS/PMP/US/BV-004
Reference	Clause 6.3.5.2.2
Selection criteria	
Initial condition	rtPS scheduling in use for this connection.
Test purpose	Check that the IUT: Periodically transmits unicast request opportunities and sets the Request/Transmission Policy to prohibit the TE from using contention requests on the connection.

TP ID	BS/MS/PMP/US/BV-005
Reference	Clause 6.3.5.2.2
Selection criteria	
Initial condition	nrtPS scheduling in use for this connection.
Test purpose	Check that the IUT: Transmits timely unicast request opportunities and sets the Request/Transmission Policy to allow the TE to use contention requests on the connection.
Parameter values	PIXIT values required to define "timely". One for aperiodic or periodic transmission, another for the interval. (Spec says values are typically on the order of one second.)

5.2.2.5 Message Behaviour for Mesh Mode (MM)

5.2.2.5.1 Additional Privacy Features (AP)

5.2.2.5.1.1 Cryptography (CRY)

5.2.2.5.1.1.1 Downlink (DL)

TP ID	BS/MS/MM/AP/CRY/DL/BV-000
Reference	Clauses 7.5.3, 7.5.4.3
Selection criteria	Mesh Mode only
Initial condition	The IUT is authenticating the Key Reply, Key Reject, TEK Invalid, and SA Add Attribute messages with HMAC-Digest.
Test purpose	Check that the IUT: Uses HMAC_KEY_S to calculate the HMAC-Digest over the entire MAC management message with the exception of the HMAC-Digest and HMAC Tuple attributes.

TP ID	BS/MS/MM/AP/CRY/DL/BV-001
Reference	Clause 7.5.4
Selection criteria	
Initial condition	
Test purpose	Check that the IUT: Generates random or pseudo-random numbers for AKs and TEKs.

TP ID	BS/MS/MM/AP/CRY/DL/BV-002
Reference	Clause 7.5.4
Selection criteria	
Initial condition	
Test purpose	Check that the IUT: Generates unpredictable IVs.

TP ID	BS/MS/MM/AP/CRY/DL/BV-003
Reference	Clause 7.5.5
Selection criteria	
Initial condition	IUT is operational. The tester has transmitted an valid Auth Request message.
Test purpose	Check that the IUT: Encrypts the AUTH-Key in the Auth Reply message with the RSAES-OEAP encryption scheme using SHA-1 for the hash function, MGF1 with SHA-1 for the mask-generating function, and the empty string for the encoding parameter string. The public exponent is 65 537 and the modulus length is 1 024 bits.

5.2.2.5.1.1.2 Uplink (UL)

TP ID	BS/MS/MM/AP/CRY/UL/BV-000
Reference	Clause 7.5.4.1
Selection criteria	
Initial condition	The IUT is decrypting payloads using DES.
Test purpose	Check that the IUT: Ignores the least significant bit of each byte in the 8-byte DES keys.

5.2.2.5.2 Network Entry and Initialization (NE)

5.2.2.5.2.1 Node Registration (NR)

TP ID	BS/MS/MM/NE/NR/BV-000
Reference	Clauses 6.3.2.3.7, 6.3.9.9
Selection criteria	Mesh Mode
Initial condition	Wait for REG-REQ
Test purpose	Check that the IUT: On receipt of a REG-REQ, sends a REG-RSP containing the Node ID.

5.3   Test purposes for SS (SS)

5.3.1   DLC Convergence Sublayer (CS)

5.3.1.1   Packet CS (PS)

5.3.1.1.1   PDU Classification (CL)

5.3.1.1.1.1   Receive (RX)

TP ID	SS/CS/PS/CL/RX/BV-000
Reference	Clauses 5.2, 5.2.2
Selection criteria	
Initial condition	The IUT receives connection data. The TE transmits data on the connection.
Test purpose	Check that the IUT: Provides the upper layer PDU via the CS SAP corresponding to the classifier associated with the CID.
Note	Requires a PCO on the CS SAP.

TP ID	SS/CS/PS/CL/RX/BV-001
Reference	Clause 11.13.19.3.3
Selection criteria	
Initial condition	TE is initialized and a dynamic service is established with data flow. The TE transmits a DSC-REQ with an invalid Change Action for the classifier.
Test purpose	Check that the IUT: Transmits a DSC-RSP with a Classifier error parameter set indicating an invalid Change Action.

TP ID	SS/CS/PS/CL/RX/BV-002
Reference	Clause 11.13.19.3.3
Selection criteria	
Initial condition	TE is initialized and a dynamic service is established with data flow. The TE transmits a DSC-REQ with an invalid IP Protocol value for the classifier.
Test purpose	Check that the IUT: Transmits a DSC-RSP with a Classifier error parameter set indicating an invalid IP Protocol value.

5.3.1.1.1.2   Transmit (TX)

TP ID	SS/CS/PS/CL/TX/BV-000
Reference	Clause 5.2.2
Selection criteria	PIC_action_on_unmatched_classifier
Initial condition	The IUT is the transmitter of connection data. Data has been successfully transmitted on this connection. The TE provides an upper layer PDU to the IUT's CS SAP that does not have a classifier in which all parameters match the packet.
Test purpose	Check that the IUT: Either delivers the PDU to a default CID or discards the packet.
Note	Requires an UT over the CS and an implicit send/external operation that sends the upper layer PDU to the CS SAP. The action vendor-specific; thus, it is a PICS item.

TP ID	SS/CS/PS/CL/TX/BV-001
Reference	Clause 5.2.2
Selection criteria	
Initial condition	The IUT is the transmitter of connection data. The TE provides an upper layer PDU to the IUT's CS SAP that has only one classifier in which all parameters match the packet.
Test purpose	Check that the IUT: Delivers the PDU to the corresponding connection (CID).
Note	Requires an UT over the CS and an implicit send/external operation that sends the upper layer PDU to the CS SAP.

TP ID	SS/CS/PS/CL/TX/BV-002
Reference	Clause 5.2.2
Selection criteria	
Initial condition	The IUT has several connections, each of which has identical classifier assigned to them except for the classifier priority field. The TE provides a data PDU to the CS via the CS SAP using the classifier.
Test purpose	Check that the IUT: Transmits the PDU on the MAC CID having the highest priority.
Note	One testing approach: Setup: Provoke the IUT to establish three connections with each connection having a different measurable QoS associated with each CID. (This is possible if the connections can be provisioned. If not, they must be established by DSA-REQ if possible.) During the connection establishment, assign identical classifiers to each connection except for the priority which shall be 0, 127, and 255. The classifier with priority = 0 is assigned to the connection with the lowest QoS, that having the priority = 255 is assigned to the highest QoS. The TE then provides a data PDU to the CS via a CS SAP. Check that the IUT: Transmits the PDU on the CID with the highest priority.

TP ID	SS/CS/PS/CL/TX/BV-003
Reference	Clause 5.2.2
Selection criteria	
Initial condition	The IUT has several connections, each of which has identical classifier assigned to them except for the classifier priority field. The IUT is transmitting data on the MAC CID having the highest priority for the classifier. The service flow for that MAC CID is then deleted.
Test purpose	Check that the IUT: Transmits the data on the MAC CID having the next highest priority for the same classifier.
Note	One testing approach: Setup: Provoke the IUT to establish three connections with each connection having a different measurable QoS associated with each CID. (This is possible if the connections can be provisioned. If not, they must be established by DSA-REQ if possible.) During the connection establishment, assign identical classifiers to each connection except for the priority which shall be 0, 127, and 255. The classifier with priority = 0 is assigned to the connection with the lowest QoS, that having the priority = 255 is assigned to the highest QoS. The IUT then transmits data on the CID with the next highest priority. The service flow is then deleted. Check that the IUT: Transmits data on the CID with the next highest classifier priority.

TP ID	SS/CS/PS/CL/TX/BV-004
Reference	Clause 11.13.19.3.2
Selection criteria	PIC_action_on_unmatched_classifier
Initial condition	The TE is providing data PDUs to IUT's CS SAP that does not match any classifier. The IUT either transmits the data on a default MAC CID or discards the data (implementation-specific declared in PICS). The IUT is then provoked to add a classifier matching the data using a DSC transaction.
Test purpose	Check that the IUT: Transmits the data on the MAC CID corresponding to the added classifier.

TP ID	SS/CS/PS/CL/TX/BV-005
Reference	Clause 11.13.19.3.2
Selection criteria	PIC_action_on_unmatched_classifier
Initial condition	The IUT is transmitting data on two MAC CIDs. The classifiers associated with each CID are not identical and have different priorities. The IUT is then provoked to replace the classifier using a DSC transaction. The classifier is replaced with a classifier identical to the other classifier but having a lower priority.
Test purpose	Check that the IUT: Transmits the data that was on the two MAC CIDs on the MAC CID with the classifier having the highest priority.

TP ID	SS/CS/PS/CL/TX/BV-006
Reference	Clause 11.13.19.3.2
Selection criteria	PIC_action_on_unmatched_classifier
Initial condition	The IUT is transmitting data on a MAC CID corresponding to the classifier established during connection setup. The IUT is then provoked to delete the classifier using a DSC transaction. There is no classifier that matches the data being transmitted.
Test purpose	Check that the IUT: Either transmits the data on a default MAC CID or discards the data (implementation-specific declared in PICS).

TP ID	SS/CS/PS/CL/TX/BV-007
Reference	Clauses 5.2.6.2, 11.13.19.2, 11.13.19.3.4.2
Selection criteria	
Initial condition	IUT is initialized and a dynamic service is established with IP data flow with a classifier only containing IP type of service. The IUT is provoked to add a classifier for a connection having a higher QoS than that being used by the IP data flow with a classifier containing only IP type of service.
Test purpose	Check that the IUT: Transmits the data on the connection having the higher QoS.

TP ID	SS/CS/PS/CL/TX/BV-008
Reference	Clauses 5.2.6.2, 11.13.19.2, 11.13.19.3.4.3
Selection criteria	
Initial condition	IUT is initialized and a dynamic service is established with IP data flow with a classifier only containing the IP protocol field. The IUT is provoked to add a classifier for a connection having a higher QoS than that being used by the IP data flow with a classifier containing only IP protocol field.
Test purpose	Check that the IUT: Transmits the data on the connection having the higher QoS.

TP ID	SS/CS/PS/CL/TX/BV-009
Reference	Clauses 5.2.6.2, 11.13.19.2, 11.13.19.3.4.4
Selection criteria	
Initial condition	IUT is initialized and a dynamic service is established with IP data flow with a classifier only containing the IP source address. The IUT is provoked to add a classifier for a connection having a higher QoS than that being used by the IP data flow with a classifier containing only IP source address.
Test purpose	Check that the IUT: Transmits the data on the connection having the higher QoS.

TP ID	SS/CS/PS/CL/TX/BV-010
Reference	Clauses 5.2.6.2, 11.13.19.2, 11.13.19.3.4.5
Selection criteria	
Initial condition	IUT is initialized and a dynamic service is established with IP data flow with a classifier only containing the IP destination address. The IUT is provoked to add a classifier for a connection having a higher QoS than that being used by the IP data flow with a classifier containing only IP destination address.
Test purpose	Check that the IUT: Transmits the data on the connection having the higher QoS.

TP ID	SS/CS/PS/CL/TX/BV-011
Reference	Clauses 5.2.6.2, 11.13.19.2, 11.13.19.3.4.6
Selection criteria	
Initial condition	IUT is initialized and a dynamic service is established with IP data flow with a classifier only containing the IP source port. The IUT is provoked to add a classifier for a connection having a higher QoS than that being used by the IP data flow with a classifier containing only IP source port.
Test purpose	Check that the IUT: Transmits the data on the connection having the higher QoS.

TP ID	SS/CS/PS/CL/TX/BV-012
Reference	Clauses 5.2.6.2, 11.13.19.2, 11.13.19.3.4.7
Selection criteria	
Initial condition	IUT is initialized and a dynamic service is established with IP data flow with a classifier only containing the IP destination port. The IUT is provoked to add a classifier for a connection having a higher QoS than that being used by the IP data flow with a classifier containing only IP destination port.
Test purpose	Check that the IUT: Transmits the data on the connection having the higher QoS.

TP ID	SS/CS/PS/CL/TX/BV-013
Reference	Clauses 5.2.6.2, 11.13.19.2, 11.13.19.3.4.2-7
Selection criteria	
Initial condition	IUT is initialized and a dynamic service is established with IP data flow with all the IP classifier fields: type of service, protocol, source address, destination address, source port, and destination port. The IUT is provoked to add a classifier matching all the IP classifier fields for a connection having a higher QoS than that being used by the IP data flow with all the IP classifier fields.
Test purpose	Check that the IUT: Transmits the data on the connection having the higher QoS.

TP ID	SS/CS/PS/CL/TX/BV-014
Reference	Clauses 5.2.4.2, 11.13.19.2, 11.13.19.3.4.8
Selection criteria	
Initial condition	IUT is initialized and a dynamic service is established with Ethernet data flow with a classifier only containing the Ethernet MAC destination address field. The IUT is provoked to add a classifier for a connection having a higher QoS than that being used by the Ethernet data flow with a classifier containing only the Ethernet MAC destination address field.
Test purpose	Check that the IUT: Transmits the data on the connection having the higher QoS.

TP ID	SS/CS/PS/CL/TX/BV-015
Reference	Clauses 5.2.4.2, 11.13.19.2, 11.13.19.3.4.9
Selection criteria	
Initial condition	IUT is initialized and a dynamic service is established with Ethernet data flow with a classifier only containing the Ethernet MAC source address field. The IUT is provoked to add a classifier for a connection having a higher QoS than that being used by the Ethernet data flow with a classifier containing only the Ethernet MAC source address field.
Test purpose	Check that the IUT: Transmits the data on the connection having the higher QoS.

TP ID	SS/CS/PS/CL/TX/BV-016
Reference	Clauses 5.2.4.2, 11.13.19.2, 11.13.19.3.4.10
Selection criteria	
Initial condition	IUT is initialized and a dynamic service is established with Ethernet data flow with a classifier only containing the Ethertype SAP field. The IUT is provoked to add a classifier for a connection having a higher QoS than that being used by the Ethernet data flow with a classifier containing only the Ethertype SAP field.
Test purpose	Check that the IUT: Transmits the data on the connection having the higher QoS.

TP ID	SS/CS/PS/CL/TX/BV-017
Reference	Clauses 5.2.4.2, 11.13.19.2, 11.13.19.3.4.8-10
Selection criteria	
Initial condition	IUT is initialized and a dynamic service is established with Ethernet data flow with all the Ethernet classifier fields: Ethernet source MAC address, Ethernet destination MAC address, and Ethertype SAP. The IUT is provoked to add a classifier matching all the Ethernet classifier fields for a connection having a higher QoS than that being used by the Ethernet data flow with all the Ethernet classifier fields.
Test purpose	Check that the IUT: Transmits the data on the connection having the higher QoS.

TP ID	SS/CS/PS/CL/TX/BV-018
Reference	Clauses 5.2.4.2, 11.13.19.2, 11.13.19.3.4.2
Selection criteria	
Initial condition	IUT is initialized and a dynamic service is established with Ethernet over IP data flow with a classifier only containing IP type of service. The IUT is provoked to add a classifier for a connection having a higher QoS than that being used by the Ethernet over IP data flow with a classifier containing only IP type of service.
Test purpose	Check that the IUT: Transmits the data on the connection having the higher QoS.

TP ID	SS/CS/PS/CL/TX/BV-019
Reference	Clauses 5.2.4.2, 11.13.19.2, 11.13.19.3.4.3
Selection criteria	
Initial condition	IUT is initialized and a dynamic service is established with Ethernet over IP data flow with a classifier only containing the IP protocol field. The IUT is provoked to add a classifier for a connection having a higher QoS than that being used by the Ethernet over IP data flow with a classifier containing only IP protocol field.
Test purpose	Check that the IUT: Transmits the data on the connection having the higher QoS.

TP ID	SS/CS/PS/CL/TX/BV-020
Reference	Clauses 5.2.4.2, 11.13.19.2, 11.13.19.3.4.4
Selection criteria	
Initial condition	IUT is initialized and a dynamic service is established with Ethernet over IP data flow with a classifier only containing the IP source address. The IUT is provoked to add a classifier for a connection having a higher QoS than that being used by the Ethernet over IP data flow with a classifier containing only IP source address.
Test purpose	Check that the IUT: Transmits the data on the connection having the higher QoS.

TP ID	SS/CS/PS/CL/TX/BV-021
Reference	Clauses 5.2.4.2, 11.13.19.2, 11.13.19.3.4.5
Selection criteria	
Initial condition	IUT is initialized and a dynamic service is established with Ethernet over IP data flow with a classifier only containing the IP destination address. The IUT is provoked to add a classifier for a connection having a higher QoS than that being used by the Ethernet over IP data flow with a classifier containing only IP destination address.
Test purpose	Check that the IUT: Transmits the data on the connection having the higher QoS.

TP ID	SS/CS/PS/CL/TX/BV-022
Reference	Clauses 5.2.4.2, 11.13.19.2, 11.13.19.3.4.6
Selection criteria	
Initial condition	IUT is initialized and a dynamic service is established with Ethernet over IP data flow with a classifier only containing the IP source port. The IUT is provoked to add a classifier for a connection having a higher QoS than that being used by the Ethernet over IP data flow with a classifier containing only IP source port.
Test purpose	Check that the IUT: Transmits the data on the connection having the higher QoS.

TP ID	SS/CS/PS/CL/TX/BV-023
Reference	Clauses 5.2.4.2, 11.13.19.2, 11.13.19.3.4.7
Selection criteria	
Initial condition	IUT is initialized and a dynamic service is established with Ethernet over IP data flow with a classifier only containing the IP destination port. The IUT is provoked to add a classifier for a connection having a higher QoS than that being used by the Ethernet over IP data flow with a classifier containing only IP destination port.
Test purpose	Check that the IUT: Transmits the data on the connection having the higher QoS.

TP ID	SS/CS/PS/CL/TX/BV-024
Reference	Clauses 5.2.4.2, 11.13.19.2, 11.13.19.3.4.2-7
Selection criteria	
Initial condition	IUT is initialized and a dynamic service is established with Ethernet over IP data flow with all the IP classifier fields: type of service, protocol, source address, destination address, source port, and destination port. The IUT is provoked to add a classifier matching all the IP classifier fields for a connection having a higher QoS than that being used by the Ethernet over IP data flow with all the IP classifier fields.
Test purpose	Check that the IUT: Transmits the data on the connection having the higher QoS.

TP ID	SS/CS/PS/CL/TX/BV-025
Reference	Clauses 5.2.4.2, 11.13.19.2, 11.13.19.3.4.8
Selection criteria	
Initial condition	IUT is initialized and a dynamic service is established with Ethernet over IP data flow with a classifier only containing the Ethernet MAC destination address field. The IUT is provoked to add a classifier for a connection having a higher QoS than that being used by the Ethernet over IP data flow with a classifier containing only the Ethernet MAC destination address field.
Test purpose	Check that the IUT: Transmits the data on the connection having the higher QoS.

TP ID	SS/CS/PS/CL/TX/BV-026
Reference	Clauses 5.2.4.2, 11.13.19.2, 11.13.19.3.4.9
Selection criteria	
Initial condition	IUT is initialized and a dynamic service is established with Ethernet over IP data flow with a classifier only containing the Ethernet MAC source address field. The IUT is provoked to add a classifier for a connection having a higher QoS than that being used by the Ethernet over IP data flow with a classifier containing only the Ethernet MAC source address field.
Test purpose	Check that the IUT: Transmits the data on the connection having the higher QoS.

TP ID	SS/CS/PS/CL/TX/BV-027
Reference	Clauses 5.2.4.2, 11.13.19.2, 11.13.19.3.4.10
Selection criteria	
Initial condition	IUT is initialized and a dynamic service is established with Ethernet over IP data flow with a classifier only containing the Ethertype SAP field. The IUT is provoked to add a classifier for a connection having a higher QoS than that being used by the Ethernet over IP data flow with a classifier containing only the Ethertype SAP field.
Test purpose	Check that the IUT: Transmits the data on the connection having the higher QoS.

TP ID	SS/CS/PS/CL/TX/BV-028
Reference	Clauses 5.2.4.2, 11.13.19.2, 11.13.19.3.4.8-10
Selection criteria	
Initial condition	IUT is initialized and a dynamic service is established with Ethernet over IP data flow with all the Ethernet classifier fields: Ethernet source MAC address, Ethernet destination MAC address, and Ethertype SAP. The IUT is provoked to add a classifier matching all the Ethernet classifier fields for a connection having a higher QoS than that being used by the Ethernet over IP data flow with all the Ethernet classifier fields.
Test purpose	Check that the IUT: Transmits the data on the connection having the higher QoS.

TP ID	SS/CS/PS/CL/TX/BV-029
Reference	Clauses 5.2.4.2, 11.13.19.2, 11.13.19.3.4.2-7
Selection criteria	
Initial condition	IUT is initialized and a dynamic service is established with Ethernet over IP data flow with all the IP and Ethernet classifier fields: type of service, protocol, source address, destination address, source port, destination port, Ethernet source MAC address, Ethernet destination MAC address, and Ethertype SAP. The IUT is provoked to add a classifier matching all the IP and Ethernet classifier fields for a connection having a higher QoS than that being used by the Ethernet over IP data flow with all the IP and Ethernet classifier fields.
Test purpose	Check that the IUT: Transmits the data on the connection having the higher QoS.

5.3.2   DLC MAC Sublayer (MS)

5.3.2.1   MAC PDU Construction (CO)

TP ID	SS/MS/CO/BV-000
Reference	Clause 6.3.3.7
Selection criteria	
Initial condition	Allocated space within a data burst cannot be used.
Test purpose	Check that the IUT: Initializes the unused space to a known state; i.e. by setting each unused byte to the stuff byte value 0xFF.

TP ID	SS/MS/CO/BV-001
Reference	Clause 6.3.3.7, table 343
Selection criteria	
Initial condition	Allocated space within a data burst cannot be used and its size at least the size of a MAC header.
Test purpose	Check that the IUT: Initializes the unused space to a known state; i.e. by setting each unused byte to the stuff byte value 0xFF or formats the unused space as a MAC PDU. In this case, the MAC CID field is the value of the Padding CID, the CI, EC, HT, and Type fields are set to zero, the length field is set to the number of unused bytes including the MAC header size for creating the padding MAC PDU, and the HCS is calculated in the usual way.

TP ID	SS/MS/CO/BV-002
Reference	Clause 6.3.2.1.1, table 5
Selection criteria	
Initial condition	
Test purpose	Check that the IUT: Calculates the HCS value for the first five bytes of the cell header and inserts the results into the HCS field. The HCS is the remainder of the division (Modulo 2) by the generator polynomial $g(D) = D8 + d2 + D + 1$ of multiplied by the content of the header excluding the HCS field.

TP ID	SS/MS/CO/BV-003
Reference	Clause 6.3.2.1.2
Selection criteria	
Initial condition	
Test purpose	Check that the IUT: Constructs the Bandwidth Request PDU with the bandwidth request header alone without any payload.

TP ID	SS/MS/CO/BV-004
Reference	Clause 6.3.2.1.2
Selection criteria	
Initial condition	The TE transmits a bandwidth request.
Test purpose	Check that the IUT: Discards the PDU.

TP ID	SS/MS/CO/BV-005
Reference	Clause 6.3.2.2
Selection criteria	
Initial condition	Fragmentation and Grant Management subheaders are in the same PDU.
Test purpose	Check that the IUT: Constructs the MAC PDU with the Grant Management subheader first followed by the Fragmentation subheader.

TP ID	SS/MS/CO/BV-006
Reference	Clause 6.3.2.2
Selection criteria	
Initial condition	The Mesh and other subheaders are in the same PDU.
Test purpose	Check that the IUT: Constructs the MAC PDU with Mesh subheader always first in subheader order.

TP ID	SS/MS/CO/BV-007
Reference	Clause 6.3.2.2
Selection criteria	
Initial condition	The ARQ_ACK Allocation subheader and other per-PDU subheaders are in the same PDU.
Test purpose	Check that the IUT: Constructs the MAC PDU with ARQ_ACK Allocation subheader as the last per-PDU subheader.

TP ID	SS/MS/CO/BV-008
Reference	Clause 6.3.2.2
Selection criteria	
Initial condition	
Test purpose	Check that the IUT: Does not construct MAC PDUs with Packing and Fragmentation subheaders in the same MAC PDU.

TP ID	SS/MS/CO/BV-009
Reference	Clause 6.3.2.2
Selection criteria	
Initial condition	Per-PDU subheaders and per-SDU subheaders are in the same MAC PDU
Test purpose	Check that the IUT: Constructs the PDU with the per-PDU subheaders always before the first per-SDU subheader.

TP ID	SS/MS/CO/BV-010
Reference	Clause 6.3.2.2.4
Selection criteria	
Initial condition	ARQ is enabled. Packing is in use.
Test purpose	Check that the IUT: Transports the ARQ Feedback Payload as the first packed payload.

TP ID	SS/MS/CO/BV-011
Reference	Clause 6.3.2.3
Selection criteria	
Initial condition	
Test purpose	Check that the IUT: Never fragments nor packs MAC Management messages on the Basic, Broadcast, and Initial Ranging Management connections.

TP ID	SS/MS/CO/BV-012
Reference	Clause 6.3.2.3
Selection criteria	
Initial condition	The TE has transmitted a MAC management message having a "reserved" Type value.
Test purpose	Check that the IUT: Silently discards the message.

TP ID	SS/MS/CO/BV-013
Reference	Clause 6.3.2.3
Selection criteria	
Initial condition	The TE has transmitted a MAC management message not containing all required parameters.
Test purpose	Check that the IUT: Silently discards the message.

TP ID	SS/MS/CO/BV-014
Reference	Clause 6.3.2.3
Selection criteria	
Initial condition	The TE has transmitted a MAC management message containing erroneously encoded parameters.
Test purpose	Check that the IUT: Silently discards the message.

5.3.2.2 Common Message Behaviour for both PMP and Mesh (MP)

5.3.2.2.1 Adaptive Antenna Support - AAS (AA)

TP ID	SS/MS/MP/AA/BV-000
Reference	Clause 6.3.7.6.1
Selection criteria	
Initial condition	IUT is operating and does not support AAS. The TE transmits AAS frame portions.
Test purpose	Check that the IUT: Ignores the AAS traffic.

5.3.2.2.2 Additional Privacy Features (AP)

5.3.2.2.2.1 Authentication (ATH)

TP ID	SS/MS/MP/AP/ATH/BV-000
Reference	Clause 7.4.2.2
Selection criteria	
Initial condition	IUT is operational.
Test purpose	Check that the IUT: Uses the HMAC_KEY_U derived from the new of its two most recent AKs when calculating the HMAC-Digests attached to Key Request messages.

TP ID	SS/MS/MP/AP/ATH/BV-001
Reference	Clause 7.4.2.2
Selection criteria	
Initial condition	IUT is operational. Two AKs are active. The IUT has transmitted a valid Key Request. The TE responded with a Key Reply message using the older AK sequence number.
Test purpose	Check that the IUT: Authenticates the Key Reply message and decrypts the TEKs with the KEK using the older AK.

TP ID	SS/MS/MP/AP/ATH/BV-002
Reference	Clause 7.4.2.2
Selection criteria	
Initial condition	IUT is operational. Two AKs are active. The IUT has transmitted a valid Key Request. The TE responded with a Key Reply message using the newer AK sequence number.
Test purpose	Check that the IUT: Authenticates the Key Reply message and decrypts the TEKs with the KEK using the newer AK.

TP ID	SS/MS/MP/AP/ATH/BV-003
Reference	Clause 7.4.2.2
Selection criteria	
Initial condition	IUT is operational. Two AKs are active. The IUT has transmitted a valid Key Request. The TE responded with a Key Reply message using the older AK sequence number.
Test purpose	Check that the IUT: Authenticates the Key Reply message using the older AK.

TP ID	SS/MS/MP/AP/ATH/BV-004
Reference	Clause 7.4.2.2
Selection criteria	
Initial condition	IUT is operational. Two AKs are active. The IUT has transmitted a valid Key Request. The TE responded with a Key Reject message using the newer AK sequence number.
Test purpose	Check that the IUT: Authenticates the Key Reject message using the newer AK.

TP ID	SS/MS/MP/AP/ATH/BV-005
Reference	Clause 7.4.2.2
Selection criteria	
Initial condition	IUT is operational. Two AKs are active. The IUT has transmitted a valid Key Request. The TE responded with a TEK Reject message using the newer AK sequence number.
Test purpose	Check that the IUT: Authenticates the TEK Reject message using the newer AK.

5.3.2.2.2.1.1 Uplink (UL)

TP ID	SS/MS/MP/AP/ATH/UL/BV-000
Reference	Clauses 7.4.2.2, 7.5.4.3
Selection criteria	
Initial condition	The IUT is operational. Two AKs are active for the IUT. Given that during a transaction the IUT must transmit one of the following messages: DSx-REQ, DSx-RSP, DSx-ACK, REG-REQ, and TFTP-CPLT.
Test purpose	Check that the IUT: Calculates the HMAC-Digest of the HMAC Tuple in the message with the HMAC_KEY_U associated with the newer of its two most recent AKs.

5.3.2.2.2.2 Cryptography (CRY)

5.3.2.2.2.2.1 Downlink (DL)

TP ID	SS/MS/MP/AP/CRY/DL/BV-000
Reference	Clauses 7.5, 7.5.1.1
Selection criteria	
Initial condition	The IUT is operational. The IUT is decrypting downlink MAC DATA PDU payloads. The final block of plaintext is of n bits where n is less than 64 bits.
Test purpose	Check that the IUT: DES decrypts the next-to-last cipher block text using the ECB mode, and XORs the most significant n bits with the short final cipher block in order to recover the short final cleartext block.

TP ID	SS/MS/MP/AP/CRY/DL/BV-001
Reference	Clauses 7.5, 7.5.1.1
Selection criteria	
Initial condition	The IUT is operational. The IUT is decrypting downlink MAC DATA PDU payloads. The entire plaintext is of n bits where n is less than 64 bits.
Test purpose	Check that the IUT: Correctly decrypts the entire plaintext.

TP ID	SS/MS/MP/AP/CRY/DL/BV-002
Reference	Clauses 7.5, 7.5.2.1
Selection criteria	
Initial condition	The IUT is Key Exchanging. During authorization, the IUT has transmitted 0x01 in the TEK encryption algorithm identifiers of the Cryptographic-Suite-List of the Security-Capabilities in the Auth Request message. The IUT has then transmitted a Key Request message.
Test purpose	Check that the IUT: Decrypts the TEK in the TEK-parameters subattributes of the Key Reply message using the two-key 3-DES in the EDE mode.

TP ID	SS/MS/MP/AP/CRY/DL/BV-003
Reference	Clauses 7.5, 7.5.2.2
Selection criteria	
Initial condition	The IUT is Key Exchanging. During authorization, the IUT has transmitted 0x02 in the TEK encryption algorithm identifiers of the Cryptographic-Suite-List of the Security-Capabilities in the Auth Request message. The IUT has then transmitted a Key Request message.
Test purpose	Check that the IUT: Decrypts the TEK in the TEK-parameters subattributes of the Key Reply message using the RSA method.

TP ID	SS/MS/MP/AP/CRY/DL/BV-004
Reference	Clauses 7.5, 7.5.1.1, 11.9.8, 11.9.9
Selection criteria	PMP_only
Initial condition	The IUT is operational. The IUT is decrypting downlink MAC DATA PDU payloads.
Test purpose	Check that the IUT: Uses a CBC calculated by XOR-ing the CBC-IV transmitted in the TEK parameters subattributes with the right-justified PHY synchronization field of the latest DL-MAP.

5.3.2.2.2.2.2   Uplink (UL)

TP ID	SS/MS/MP/AP/CRY/UL/BV-000
Reference	Clauses 7.5 and 7.5.1.1, tables 373 and 378
Selection criteria	
Initial condition	The IUT is operational. During successful SS authorization and key exchange, the SS has received an SA-Descriptor subattribute with Cryptographic suite identifier equal to 0x01 for CBC-Mode, 56-bit DES for a given SA.
Test purpose	Check that the IUT: For the given SA, uses the CBC of the DES algorithm to encrypt the MAC DATA PDU payloads.

TP ID	SS/MS/MP/AP/CRY/UL/BV-001
Reference	Tables 373 and 378
Selection criteria	
Initial condition	The IUT is operational. During successful SS authorization and key exchange, the SS has received an SA-Descriptor subattribute with Cryptographic suite identifier equal to 0x00 for a given SA.
Test purpose	Check that the IUT: For the given SA, does not encrypt the MAC DATA PDU payloads.

TP ID	SS/MS/MP/AP/CRY/UL/BV-002
Reference	Clauses 7.5, 7.5.1.1, 11.9.8, 11.9.9
Selection criteria	PMP_only
Initial condition	The IUT is operational. The IUT is encrypting uplink MAC DATA PDU payloads.
Test purpose	Check that the IUT: Uses a CBC calculated by XOR-ing the CBC-IV transmitted in the TEK parameters subattributes with the PHY synchronization field of the DL-MAP in effect for UL-MAP.

TP ID	SS/MS/MP/AP/CRY/UL/BV-003
Reference	Clauses 7.5, 7.5.1.1
Selection criteria	
Initial condition	The IUT is operational. The IUT is encrypting uplink MAC DATA PDU payloads. The final block of plaintext is of n bits where n is less than 64 bits.
Test purpose	Check that the IUT: DES encrypts the next-to-last cipher block text a second time using the ECB mode, XORs the most significant n bits of the result with the final n bits of the payload for the short final cipher block.

TP ID	SS/MS/MP/AP/CRY/UL/BV-004
Reference	Clauses 7.5, 7.5.1.1
Selection criteria	
Initial condition	The IUT is operational. The IUT is encrypting uplink MAC DATA PDU payloads. The entire plaintext is of n bits where n is less than 64 bits.
Test purpose	Check that the IUT: DES encrypts the IV, then XORs the most significant n bits of the cipher text with the n bits of the payload to generate the short cipher block.

TP ID	SS/MS/MP/AP/CRY/UL/BV-005
Reference	Clauses 7.57.5.3, 7.5.4.3
Selection criteria	PMP only
Initial condition	The IUT is authenticating the Key Request message with HMAC-Digest.
Test purpose	Check that the IUT: Uses HMAC_KEY_U to calculate the HMAC-Digest over the entire MAC management message with the exception of the HMAC-Digest and HMAC Tuple attributes.

5.3.2.2.2.3   SS Reauthorization (SSR)

TP ID	SS/MS/MP/AP/SSR/BV-000
Reference	Clause 7.2.4.5, 4-B, 6-C, table 342
Selection criteria	
Initial condition	IUT is operational. The IUT has transmitted a valid Auth Info message followed by a valid Auth Request message. It has then received a valid Auth Reply message. The IUT is now authorized.
Test purpose	Check that the IUT: For re-authorization, transmits a valid Auth Request message more than (T_AKlifetime – T_AuthGrace) seconds after receiving the Auth Reply but less than T_AKlifetime seconds after receiving the same Auth Reply. The values for T_AKlifetime and T_AuthGrace are from table 342.

TP ID	SS/MS/MP/AP/SSR/BV-001
Reference	Clause 7.2.1
Selection criteria	
Initial condition	IUT is operational.
Test purpose	Check that the IUT: Simultaneously supports two active AK's during re-authorization.

TP ID	SS/MS/MP/AP/SSR/BV-002
Reference	Clause 7.2.4.3
Selection criteria	
Initial condition	IUT is operational. The tester transmits a Perm Auth Reject message.
Test purpose	Check that the IUT: Issues an SNMP Trap.

TP ID	SS/MS/MP/AP/SSR/BV-003
Reference	Clause 7.2.4.4, table 341
Selection criteria	
Initial condition	IUT is operational. The IUT has transmitted a valid Auth Info message followed by a valid Auth Request message. It has then received a valid Auth Reply message with a T_AuthGrace and T_AKlifetime values different than the default values in table 341. The IUT is now authorized.
Test purpose	Check that the IUT: For re-authorization, transmits a valid Auth Request message more than (T_AKlifetime – T_AuthGrace) seconds after receiving the Auth Reply but less than T_AKlifetime seconds after receiving the same Auth Reply.

TP ID	SS/MS/MP/AP/SSR/BV-004
Reference	Clause 7.2.4.5, 5-B
Selection criteria	IUT is operational.
Initial condition	The IUT has transmitted a valid Auth Info message followed by a valid Auth Request message to which it does not receive any response.
Test purpose	Check that the IUT: After a duration of default T_AuthWait, re-transmits a valid Auth Info message followed by a valid Auth Request message.

TP ID	SS/MS/MP/AP/SSR/BV-005
Reference	Clause 7.2.4.4, table 341
Selection criteria	IUT is operational.
Initial condition	The default T_AuthWait value has been changed during authorization in the Auth Reply message.
Test purpose	Check that the IUT: To-reauthorize, after a duration of the revised T_AuthWait, re-transmits a valid Auth Request message.

TP ID	SS/MS/MP/AP/SSR/BV-006
Reference	Clause 7.2.4.5, 5-D
Selection criteria	
Initial condition	IUT is operational. IUT has transmitted a valid Auth Request message to re-authorize.
Test purpose	Check that the IUT: Not having received any Auth Reply message after a duration of default T_ReauthWait, re-transmits a valid Auth Request message to re-authorize.

TP ID	SS/MS/MP/AP/SSR/BV-007
Reference	Clause 7.2.4.5, 5-D
Selection criteria	
Initial condition	IUT is operational.
Test purpose	Check that the IUT: To re-authorize, Repeats the cycle of sending a valid Auth Request message and waiting the default T_ReauthWait duration until receiving an Auth Reply message.

TP ID	SS/MS/MP/AP/SSR/BV-008
Reference	Clauses 7.2.4.3, 7.2.4.5 2-D, 5-E
Selection criteria	
Initial condition	IUT is operational. IUT has transmitted a valid Auth Request to re-authorize. Tester then transmitted an Auth Reject message with a failure not due to a permanent error condition.
Test purpose	Check that the IUT: Waits more than the default duration of T_AuthRejectWait, and then retransmits a valid Auth Request message to re-authorize.

TP ID	SS/MS/MP/AP/SSR/BV-009
Reference	Clause 7.2.4.4, table 341
Selection criteria	
Initial condition	IUT is operational. During first authorization, the T_AuthRejectWait duration was changed from the default value. IUT has transmitted a valid Auth Request to re-authorize. Tester then transmitted an Auth Reject message with a failure not due to a permanent error condition.
Test purpose	Check that the IUT: Waits more than the new duration of T_AuthRejectWait, and then retransmits a valid Auth Request message to re-authorize.

TP ID	SS/MS/MP/AP/SSR/BV-010
Reference	Clause 7.2.4.5, 3-D
Selection criteria	
Initial condition	IUT is operational. IUT has transmitted a valid Auth Request to re-authorize. Tester then transmitted an Auth Reject message with a failure due to a permanent error condition.
Test purpose	Check that the IUT: Disables all forwarding of traffic and Responds to management messages.

TP ID	SS/MS/MP/AP/SSR/BV-011
Reference	Clause 7.2.4.5, 4-D, 6-C, table 342
Selection criteria	
Initial condition	IUT is operational. Default authorization values are in use. IUT has transmitted a valid Auth Request to re-authorize. Tester has then transmitted a valid Auth Reply message. The IUT is now re-authorized.
Test purpose	Check that the IUT: To re-authorize again, transmits a valid Auth Request message more than (T_AKlifetime – T_AuthGrace) seconds after receiving the Auth Reply but less than T_AKlifetime seconds after receiving the same Auth Reply. The values for T_AKlifetime and T_AuthGrace are from table 342.

TP ID	SS/MS/MP/AP/SSR/BV-012
Reference	Clauses 7.2.4.4, 7.2.4.5, 4-D, 6-C
Selection criteria	
Initial condition	IUT is operational. Default authorization timer values were changed during first authorization. IUT has transmitted a valid Auth Request to re-authorize. Tester has then transmitted a valid Auth Reply message. The IUT is now re-authorized.
Test purpose	Check that the IUT: To re-authorize again, transmits a valid Auth Request message more than (T_AKlifetime – T_AuthGrace) seconds after receiving the Auth Reply but less than T_AKlifetime seconds after receiving the same Auth Reply. The values for T_AKlifetime and T_AuthGrace are from the parameters passed during the first authorization.

TP ID	SS/MS/MP/AP/SSR/BV-013
Reference	Clause 7.2.4.5, 7-D
Selection criteria	
Initial condition	IUT is operational. IUT has transmitted a valid Auth Request to re-authorize. Tester has then transmitted an Auth Invalid message associated with a particular TEK.
Test purpose	Check that the IUT: After a duration of T_ReauthWait from the instant of transmitting the Auth Request, re-transmits a valid Auth Request message to continue re-authorization.

TP ID	SS/MS/MP/AP/SSR/BV-014
Reference	Clause 7.2.4.5, 7-C
Selection criteria	
Initial condition	IUT is operational. Tester has transmitted an Auth Invalid message associated with a particular TEK.
Test purpose	Check that the IUT: Transmits an Auth Request message.

TP ID	SS/MS/MP/AP/SSR/BV-015
Reference	Clause 7.2.4.5, 7-C
Selection criteria	
Initial condition	IUT is operational. Tester has transmitted an Auth Invalid message associated with a particular TEK. The IUT has then transmitted an Auth Request message. The tester has not responded to the request.
Test purpose	Check that the IUT: After waiting a duration of T_ReauthWait from the time of sending the Auth Request message, transmits another valid Auth Request message.

TP ID	SS/MS/MP/AP/SSR/BV-016
Reference	Clause 7.2.4.5, 8-C
Selection criteria	
Initial condition	IUT is operational. An IUT-internal event has triggered a reauthorization cycle.
Test purpose	Check that the IUT: Transmits an Auth Request message.

TP ID	SS/MS/MP/AP/SSR/BV-017
Reference	Clause 7.2.4.5, 8-C
Selection criteria	
Initial condition	IUT is operational. An IUT-internal event has triggered a reauthorization cycle. The IUT has transmitted an Auth Request message. The tester has not responded to the request.
Test purpose	Check that the IUT: After waiting a duration of T_ReauthWait from the time of sending the Auth Request message, transmits another valid Auth Request message.

TP ID	SS/MS/MP/AP/SSR/BV-018
Reference	Clause 7.2.4, table 131
Selection criteria	
Initial condition	IUT is operational. T_AKlifetime and T_AuthGrace are running. The tester has transmitted an Auth Reject message.
Test purpose	Check that the IUT: Transmits no message, does not change T_AKlifetime and T_AuthGrace, and transmits a valid Auth Request message in the original re-authorization grace period.

TP ID	SS/MS/MP/AP/SSR/BV-019
Reference	Clause 7.2.4, table 131
Selection criteria	
Initial condition	IUT is operational. T_AKlifetime and T_AuthGrace are running. The tester has transmitted a Permanent Auth Reject message.
Test purpose	Check that the IUT: Transmits no message, does not change T_AKlifetime and T_AuthGrace, and transmits a valid Auth Request message in the original re-authorization grace period.

TP ID	SS/MS/MP/AP/SSR/BV-020
Reference	Clause 7.2.4, table 131
Selection criteria	
Initial condition	IUT is operational. T_AKlifetime and T_AuthGrace are running. The tester has transmitted an Auth Reply message.
Test purpose	Check that the IUT: Transmits no message, does not change T_AKlifetime and T_AuthGrace, and transmits a valid Auth Request message in the original re-authorization grace period.

TP ID	SS/MS/MP/AP/SSR/BV-021
Reference	Clause 11.9.10, table 371
Selection criteria	
Initial condition	IUT is operational. The IUT has transmitted a valid Auth Info followed by a valid Auth Request message. The tester has then transmitted an Auth Reject message with an error-code value not shown in table 371.
Test purpose	Check that the IUT: Ignores the Auth Reject message and continues authorization.

TP ID	SS/MS/MP/AP/SSR/BV-022
Reference	Clause 11.9.10, table 371
Selection criteria	
Initial condition	IUT is operational. IUT has transmitted a valid Auth Request to re-authorize. Tester then transmitted an Auth Reject message with an error code value other than those in table 371.
Test purpose	Check that the IUT: Ignores the error code value, waits more than T_AuthRejectWait, and then retransmits a valid Auth Request message to re-authorize.
Note	The last two steps of behaviour are not explicitly defined. However, IUT hangs else. Cannot assume Permanent Authorization failure behaviour because the error value is ignored. Going to Perm Auth failure would mean that the error is not ignored, but taken into account. The behaviour is closer to that when the Error Code is No Information (0).

5.3.2.2.3   ARQ (ARQ)

TP ID	SS/MS/MP/ARQ/BV-000
Reference	Clause 11.13.18.1
Selection criteria	
Initial condition	IUT is operational. The TE transmits a DSA-REQ with the ARQ Enable TLV set to ARQ Not Requested (0) to establish a service flow. The IUT accepts the DSA transaction.
Test purpose	Check that the IUT: Does not implement ARQ for the service flow.

TP ID	SS/MS/MP/ARQ/BV-001
Reference	Clause 11.13.18.1
Selection criteria	
Initial condition	IUT is operational. The IUT transmits a DSA-REQ with the ARQ Enable TLV set to ARQ Requested (1) to establish a service flow. The TE transmits a DSA-RSP with the ARQ Enable TLV set to ARQ Not Accepted (0). The IUT accepts the DSA transaction.
Test purpose	Check that the IUT: Does not implement ARQ for the service flow.

TP ID	SS/MS/MP/ARQ/BV-002
Reference	Clause 11.13.18.1
Selection criteria	
Initial condition	IUT is operational. The TE transmits a DSA-REQ with the ARQ Enable TLV set to ARQ Mandated (2) to establish a service flow.
Test purpose	Check that the IUT: Transmits a DSA-RSP that either rejects the connection or accepts the connection with ARQ and implements ARQ once the service is established.

TP ID	SS/MS/MP/ARQ/BV-003
Reference	Clause 6.3.3.4.2
Selection criteria	
Initial condition	ARQ and packing enabled on the connection. TE transmits Packing subheaders in a MAC PDU. A BSN in the packing subheader indicates that fragments are missing.
Test purpose	Check that the IUT: Uses the BSN to identify and transmit lost fragments.

TP ID	SS/MS/MP/ARQ/BV-004
Reference	Clause 6.3.3.4.3
Selection criteria	
Initial condition	ARQ enabled on the connection. The TE transmits a fragmented and packed ARQ Feedback Payload.
Test purpose	Check that the IUT: Ignores the FSN/BSN and processes the ARQ Feedback Payload.

TP ID	SS/MS/MP/ARQ/BV-005
Reference	Clause 6.3.3.4.3
Selection criteria	
Initial condition	ARQ not enabled on the connection. The TE transmits a fragmented and packed ARQ Feedback Payload on the connection.
Test purpose	Check that the IUT: Ignores the FSN/BSN and processes the ARQ Feedback Payload.

TP ID	SS/MS/MP/ARQ/BV-006
Reference	Clause 6.3.3.4.3
Selection criteria	
Initial condition	
Test purpose	Check that the IUT: When transmitting the ARQ Feedback Payload, places only one ARQ Feedback Payload within a single MAC PDU, places the ARQ Feedback Payload as the first packed payload, and sets the FC bits to 00.

TP ID	SS/MS/MP/ARQ/BV-007
Reference	Clause HM 5
Selection criteria	
Initial condition	ARQ is enabled for the connection.
Test purpose	Check that the IUT: Uses CRC-32 for error detection in MAC PDUs on the connection.

TP ID	SS/MS/MP/ARQ/BV-008
Reference	Clause HM 5.1
Selection criteria	
Initial condition	ARQ is enabled for the connection.
Test purpose	Check that the IUT: Does not implement fixed-length packing.

TP ID	SS/MS/MP/ARQ/BV-009
Reference	Clause 11.13.18.2
Selection criteria	
Initial condition	IUT is operational. The IUT transmits a DSA-REQ with an ARQ_WINDOW_SIZE parameter. The TE transmits a DSA-RSP with an ARQ_WINDOW_SIZE parameter smaller than that in the DSA-REQ.
Test purpose	Check that the IUT: Implements the smaller value as the ARQ_WINDOW_SIZE.

TP ID	SS/MS/MP/ARQ/BV-010
Reference	Clause 11.13.18.2
Selection criteria	
Initial condition	IUT is operational. The IUT transmits a DSA-REQ with an ARQ_WINDOW_SIZE parameter. The TE transmits a DSA-RSP with an ARQ_WINDOW_SIZE parameter larger than that in the DSA-REQ.
Test purpose	Check that the IUT: Implements the smaller value as the ARQ_WINDOW_SIZE.

TP ID	SS/MS/MP/ARQ/BV-011
Reference	Clause 11.13.18.3
Selection criteria	
Initial condition	IUT is operational. The TE transmits a DSA-REQ with appropriate ARQ_RETRY_TIMEOUT parameters depending on the service flow direction. The TE transmits a DSA-RSP with its appropriate ARQ_RETRY_TIMEOUT parameters. The transaction is successful.
Test purpose	Check that the IUT: Implements ARQ_RETRY_TIMEOUT as the sum of the parameters TRANSMITTER_DELAY and RECEIVER_DELAY.

TP ID	SS/MS/MP/ARQ/BV-012
Reference	Clause 11.13.18.4
Selection criteria	
Initial condition	IUT is operational. The TE transmits a DSA-REQ with the ARQ_BLOCK_LIFETIME parameter set to 0. The transaction is successful.
Test purpose	Check that the IUT: Handles ARQ_BLOCK_LIFETIME as infinite.

TP ID	SS/MS/MP/ARQ/BV-013
Reference	Clause 11.13.18.5
Selection criteria	
Initial condition	IUT is operational. The TE transmits a DSA-REQ with the ARQ_SYNC_LOSS_TIMEOUT parameter set to 0. The transaction is successful.
Test purpose	Check that the IUT: Handles ARQ_SYNC_LOSS_TIMEOUT as infinite.

TP ID	SS/MS/MP/ARQ/BV-014
Reference	Clause 11.13.18.5
Selection criteria	
Initial condition	IUT is operational. The IUT transmits a DSA-REQ. The TE then transmits a DSA-RSP with the ARQ_SYNC_LOSS_TIMEOUT parameter set to 0. The transaction is successful.
Test purpose	Check that the IUT: Handles ARQ_SYNC_LOSS_TIMEOUT as infinite.

TP ID	SS/MS/MP/ARQ/BV-015
Reference	Clause 11.13.18.7
Selection criteria	
Initial condition	IUT is operational. The TE transmits a DSA-REQ with the ARQ_RX_PURGE_TIMEOUT parameter set to 0. The transaction is successful.
Test purpose	Check that the IUT: Handles ARQ_RX_PURGE_TIMEOUT as infinite.

TP ID	SS/MS/MP/ARQ/BV-016
Reference	Clause 11.13.18.8
Selection criteria	
Initial condition	IUT is operational. The TE transmits a DSA-REQ message with an ARQ_BLOCK_SIZE value. The transaction is successful.
Test purpose	Check that the IUT: Transmits a DSA-RSP message with an ARQ_BLOCK_SIZE value less than or equal to that in the DSA-REQ message and that the IUT's ARQ_BLOCK_SIZE during service flow is the value in the DSA-RSP message.

TP ID	SS/MS/MP/ARQ/BV-017
Reference	Clause 11.13.18.8
Selection criteria	
Initial condition	IUT is operational. The TE transmits a DSA-REQ message. The ARQ_BLOCK_SIZE parameter is absent. The transaction is successful.
Test purpose	Check that the IUT: Transmits a DSA-RSP message with an ARQ_BLOCK_SIZE value less than or equal to the maximum ARQ_BLOCK_SIZE value and that the IUT's ARQ_BLOCK_SIZE during service flow is the value in the DSA-RSP message.

5.3.2.2.3.1 Reset (RE)

TP ID	SS/MS/MP/ARQ/RE/BV-000
Reference	Clause 6.3.4.6.2, figure 34
Selection criteria	
Initial condition	An ARQ connection is established and the IUT is the transmitter on this connection. The IUT transmits ARQ blocks. The TE starts ARQ_SYNC_LOSS_TIMEOUT and never ACKS block BSN_{n+1} despite the IUT's repeated retransmissions.
Test purpose	Check that the IUT: Transmits an ARQ Reset message Type 0x0 (Request) after expiration of ARQ_SYNC_LOSS_TIMEOUT and stops transmitting on the connection.

TP ID	SS/MS/MP/ARQ/RE/BV-001
Reference	Clause 6.3.4.6.2, figure 34
Selection criteria	
Initial condition	An ARQ connection is established and the IUT is the transmitter on this connection. The IUT transmits ARQ blocks. The TE starts ARQ_SYNC_LOSS_TIMEOUT and never ACKS block BSN_{n+1} despite the IUT's repeated retransmissions. The IUT then transmits an ARQ Reset message Type 0x0 (Request) after expiration of ARQ_SYNC_LOSS_TIMEOUT and stops transmitting on the connection. The TE then transmits an ARQ Reset message Type 0x1 (Responder Ack).
Test purpose	Check that the IUT: Resumes transmitting ARQ blocks with the first BSN = 0.
Note	ARQ_WINDOW_START = 0 implies that BSN = 0.

TP ID	SS/MS/MP/ARQ/RE/BV-002
Reference	Clause 6.3.4.6.2, figure 34
Selection criteria	
Initial condition	An ARQ connection is established and the IUT is the transmitter on this connection. The IUT transmits ARQ blocks. The TE starts ARQ_SYNC_LOSS_TIMEOUT and never ACKS block BSN_{n+1} despite the IUT's repeated retransmissions. The IUT then transmits an ARQ Reset message Type 0x0 (Request) after expiration of ARQ_SYNC_LOSS_TIMEOUT, stops transmitting on the connection, and starts T22. The TE does not respond to the ARQ Reset message.
Test purpose	Check that the IUT: Upon expiration of T22, the IUT retransmits the ARQ Reset message Type 0x0.

TP ID	SS/MS/MP/ARQ/RE/BV-003
Reference	Clause 6.3.4.6.2, figure 34
Selection criteria	
Initial condition	An ARQ connection is established and the IUT is the transmitter on this connection. The IUT transmits ARQ blocks. The TE starts ARQ_SYNC_LOSS_TIMEOUT and never ACKS block BSN_{n+1} despite the IUT's repeated retransmissions. The IUT then transmits an ARQ Reset message Type 0x0 (Request) after expiration of ARQ_SYNC_LOSS_TIMEOUT, stops transmitting on the connection, and starts T22. The TE does not respond to the ARQ Reset message.
Test purpose	Check that the IUT: Each time T22 expires, the IUT retransmits the ARQ Reset message Type 0x0 for T22_retries, and then re-initializes the DLC MAC layer.
Note	T22_retries is a vendor specific value.

TP ID	SS/MS/MP/ARQ/RE/BV-004
Reference	Clause 6.3.4.6.2, figure 34
Selection criteria	
Initial condition	An ARQ connection is established and the IUT is the receiver on this connection. The TE transmits ARQ blocks. The TE then transmits an ARQ Reset message Type 0x0 and stops transmitting ARQ blocks on the connection.
Test purpose	Check that the IUT: Transmits an ARQ Reset message Type 0x1 (Responder Ack)

TP ID	**SS/MS/MP/ARQ/RE/BV-005**
Reference	Clause 6.3.4.6.2, figure 34
Selection criteria	
Initial condition	An ARQ connection is established and the IUT is the receiver on this connection. The TE transmits ARQ blocks. The TE then transmits an ARQ Reset message Type 0x0 and stops transmitting ARQ blocks on the connection. The IUT then transmits an ARQ Reset message Type 0x1 (Responder Ack). Upon receiving the ARQ Reset message Type 0x1, the TE transmits ARQ blocks starting with a BSN = 0.
Test purpose	Check that IUT: Acknowledges the ARQ blocks received starting with BSN = 0.

TP ID	**SS/MS/MP/ARQ/RE/BV-006**
Reference	Clause 6.3.4.6.2, figure 35
Selection criteria	
Initial condition	An ARQ connection is established and the IUT is the transmitter on this connection. The IUT transmits ARQ blocks. The TE then transmits an ARQ Reset message Type 0x0 (Initiator).
Test purpose	Check that the IUT: Stops transmitting ARQ blocks and transmits an ARQ Reset message Type 0x1 (Responder Ack).

TP ID	**SS/MS/MP/ARQ/RE/BV-007**
Reference	Clause 6.3.4.6.2, figure 35
Selection criteria	
Initial condition	An ARQ connection is established and the IUT is the transmitter on this connection. The IUT transmits ARQ blocks. The TE then transmits an ARQ Reset message Type 0x0 (Initiator). The IUT stops transmitting ARQ blocks and transmits an ARQ Reset message Type 0x1 (Responder Ack). The TE then transmits an ARQ Reset message Type 0x2 (Confirmation).
Test purpose	Check that the IUT: Begins transmitting ARQ blocks with the first block's BSN = 0.

TP ID	**SS/MS/MP/ARQ/RE/BV-008**
Reference	Clause 6.3.4.6.2, figure 35
Selection criteria	
Initial condition	An ARQ connection is established and the IUT is the transmitter on this connection. The IUT transmits ARQ blocks. The TE then transmits an ARQ Reset message Type 0x0 (Initiator). The IUT stops transmitting ARQ blocks, transmits an ARQ Reset message Type 0x1 (Responder Ack), and starts T22. The TE does not respond.
Test purpose	Check that the IUT: Retransmits the ARQ Reset message Type 0x1 (Responder Ack) upon T22 expiry.

TP ID	**SS/MS/MP/ARQ/RE/BV-009**
Reference	Clause 6.3.4.6.2, figure 35
Selection criteria	
Initial condition	An ARQ connection is established and the IUT is the transmitter on this connection. The IUT transmits ARQ blocks. The TE then transmits an ARQ Reset message Type 0x0 (Initiator). The IUT stops transmitting ARQ blocks, transmits an ARQ Reset message Type 0x1 (Responder Ack), and starts T22. The TE does not respond.
Test purpose	Check that the IUT: Each time T22 expires, the IUT retransmits the ARQ Reset message Type 0x1 for T22_retries, and then re-initializes the DLC MAC layer.
Note	T22_retries is a vendor specific value.

TP ID	**SS/MS/MP/ARQ/RE/BV-010**
Reference	Clause 6.3.4.6.2, figure 35
Selection criteria	
Initial condition	An ARQ connection is established and the IUT is the receiver on this connection. The TE transmits ARQ blocks. The IUT starts ARQ_SYNC_LOSS_TIMEOUT at block BSN_{n+1} reception and never receives additional blocks.
Test purpose	Check that the IUT: Transmits an ARQ Reset message Type 0x0 (Request) after expiration of ARQ_SYNC_LOSS_TIMEOUT.

TP ID	SS/MS/MP/ARQ/RE/BV-011
Reference	Clause 6.3.4.6.2, figure 35
Selection criteria	
Initial condition	An ARQ connection is established and the IUT is the receiver on this connection. The TE transmits ARQ blocks. The IUT starts ARQ_SYNC_LOSS_TIMEOUT at block BSN_{n+1} reception and never receives additional blocks. The IUT transmits an ARQ Reset message Type 0x0 (Request) after expiration of ARQ_SYNC_LOSS_TIMEOUT. The TE then transmits an ARQ Reset message Type 0x1(Responder Ack).
Test purpose	Check that the IUT: Transmits an ARQ Reset message Type 0x2 (Confirmation).

TP ID	SS/MS/MP/ARQ/RE/BV-012
Reference	Clause 6.3.4.6.2, figure 35
Selection criteria	
Initial condition	An ARQ connection is established and the IUT is the receiver on this connection. The TE transmits ARQ blocks. The IUT starts ARQ_SYNC_LOSS_TIMEOUT at block BSN_{n+1} reception and never receives additional blocks. The IUT transmits an ARQ Reset message Type 0x0 (Request) after expiration of ARQ_SYNC_LOSS_TIMEOUT. The TE then transmits an ARQ Reset message Type 0x1(Responder Ack). The IUT then transmits an ARQ Reset message Type 0x2 (Confirmation). After receiving the ARQ Reset Type 0x2 message, the TE begins transmitting ARQ blocks beginning with BSN = 0.
Test purpose	Check that the IUT: Acknowledges the received ARQ blocks starting with a BSN = 0.

TP ID	SS/MS/MP/ARQ/RE/BV-013
Reference	Clause 6.3.4.6.2, figure 35
Selection criteria	
Initial condition	An ARQ connection is established and the IUT is the receiver on this connection. The TE transmits ARQ blocks. The IUT starts ARQ_SYNC_LOSS_TIMEOUT at block BSN_{n+1} reception and never receives additional blocks. The IUT then transmits an ARQ Reset message Type 0x0 (Request) after expiration of ARQ_SYNC_LOSS_TIMEOUT and starts T22. The TE does not respond.
Test purpose	Check that the IUT: Retransmits the ARQ Reset message Type 0x0 (Request) upon T22 expiry.

TP ID	SS/MS/MP/ARQ/RE/BV-014
Reference	Clause 6.3.4.6.2, figure 35
Selection criteria	
Initial condition	An ARQ connection is established and the IUT is the receiver on this connection. The TE transmits ARQ blocks. The IUT starts ARQ_SYNC_LOSS_TIMEOUT at block BSN_{n+1} reception and never receives additional blocks. The IUT then transmits an ARQ Reset message Type 0x0 (Request) after expiration of ARQ_SYNC_LOSS_TIMEOUT and starts T22. The TE does not respond.
Test purpose	Check that the IUT: Each time T22 expires, the IUT retransmits the ARQ Reset message Type 0x0 for T22_retries, and then re-initializes the DLC MAC layer.
Note	T22_retries is a vendor specific value.

5.3.2.2.3.2   Receive (RX)

TP ID	SS/MS/MP/ARQ/RX/BV-000
Reference	Clauses 6.3.4, 6.3.3.4
Selection criteria	
Initial condition	An ARQ connection is established and the IUT is the receiver on this connection. The TE transmits ARQ blocks.
Test purpose	Check that the IUT: Transmits ARQ feedback information either in an ARQ Feedback standalone message or in the first piggy-backed packed PDU subheader where bit #4 in the Type encodings of the generic MAC header is set to 1.

TP ID	SS/MS/MP/ARQ/RX/BV-001
Reference	Clause 6.3.4
Selection criteria	
Initial condition	An ARQ connection is established and the IUT is the receiver on this connection. The TE transmits ARQ blocks.
Test purpose	Check that the IUT: Does not fragment ARQ feedback messages.

TP ID	SS/MS/MP/ARQ/RX/BV-002
Reference	Clause 6.3.4.1
Selection criteria	
Initial condition	An ARQ connection is established and the IUT is the receiver on this connection. Fragmentation is not enabled.
Test purpose	Check that the IUT: In the RSP message, sets the ARQ block size to match the fixed SDU size connection setting.

TP ID	SS/MS/MP/ARQ/RX/BV-003
Reference	Clause 6.3.4.5
Selection criteria	
Initial condition	
Test purpose	Check that the IUT: Uses CRC-32 for error detection of PDUs on for all ARQ-enabled connections.

TP ID	SS/MS/MP/ARQ/RX/BV-004
Reference	Clause 6.3.4.6.2
Selection criteria	
Initial condition	An ARQ connection is established and the IUT is the receiver on this connection. The TE starts ARQ_BLOCK_LIFETIME and transmits ARQ blocks with block BSN_n always missing. The IUT responds appropriately with NACKs. After ARQ_BLOCK_LIFETIME expires, the TE transmits an ARQ DISCARD message for block BSN_n.
Test purpose	Check that the IUT: Transmits an ACK for block BSN_n.

TP ID	SS/MS/MP/ARQ/RX/BV-005
Reference	Clause 6.3.4.6.2
Selection criteria	
Initial condition	An ARQ connection is established and the IUT is the receiver on this connection. The TE starts ARQ_BLOCK_LIFETIME and transmits ARQ blocks with block BSN_n always missing. The IUT responds appropriately with NACKs. After ARQ_BLOCK_LIFETIME expires, the TE transmits an ARQ DISCARD message for block BSN_n. The IUT then transmits an ACK for block BSN_n.
Test purpose	Check that the IUT: Transmits an ACK for block BSN_n each time the TE transmits an ARQ DISCARD message for block BSN_n.

TP ID	SS/MS/MP/ARQ/RX/BV-006
Reference	Clause 6.3.4.6.2
Selection criteria	
Initial condition	An ARQ connection is established and the IUT is the receiver on this connection. The TE transmits ARQ blocks. The TE then transmits an ARQ Discard message in order to skip ARQ blocks up to the BSN value in the message.
Test purpose	Check that the IUT: Acknowledges skipping of all the blocks up to the BSN value in an ARQ Feedback IE.

TP ID	SS/MS/MP/ARQ/RX/BV-007
Reference	Clause 6.3.4.6.2
Selection criteria	
Initial condition	An ARQ connection is established and the IUT is the receiver on this connection. The TE transmits ARQ blocks. The TE then transmits an ARQ Discard message in order to skip ARQ blocks up to the BSN value in the message (BSN_n). The IUT acknowledges skipping of all the blocks up to the BSN value in an ARQ Feedback IE. The TE transmits ARQ blocks beginning with a BSN = BSN_n + 2.
Test purpose	Check that the IUT: Acknowledges the blocks starting with BSN_n + 2 and NACKs the block with BSN_n + 1.

TP ID	SS/MS/MP/ARQ/RX/BV-008
Reference	Clause 6.3.4.6.3, figure 36
Selection criteria	
Initial condition	An ARQ connection is established and the IUT is the receiver on this connection. The TE transmits an ARQ block that is not in the IUT's window.
Test purpose	Check that the IUT: Discards the block and does not acknowledge its reception.

TP ID	SS/MS/MP/ARQ/RX/BV-009
Reference	Clause 6.3.4.6.3, figure 36
Selection criteria	
Initial condition	An ARQ connection is established and the IUT is the receiver on this connection. The TE transmits an ARQ block that is in the IUT's window that has already been acknowledged.
Test purpose	Check that the IUT: Acknowledges the ARQ block.

TP ID	SS/MS/MP/ARQ/RX/BV-010
Reference	Clause 6.3.4.6.3, figure 36
Selection criteria	
Initial condition	An ARQ connection is established and the IUT is the receiver on this connection. The TE transmits an ARQ block that is in the IUT's window that has not been acknowledged.
Test purpose	Check that the IUT: Acknowledges the ARQ block.

TP ID	SS/MS/MP/ARQ/RX/BV-011
Reference	Clause 6.3.4.6.3
Selection criteria	
Initial condition	An ARQ connection is established and the IUT is the receiver on this connection. The TE transmits an ARQ block with a CRC-32 error.
Test purpose	Check that the IUT: Transmits a NACK for the ARQ block.

TP ID	SS/MS/MP/ARQ/RX/BV-012
Reference	Clause 6.3.4.6.3
Selection criteria	
Initial condition	An ARQ connection is established and the IUT is the receiver on this connection. The TE transmits an ARQ block for BSN = m and ARQ block with BSN = n that contains a CRC error. The IUT ACKs block m and NACKs block n and starts ARQ_RX_PURGE_TIMEOUT for block m. The TE continues transmitting ARQ blocks with block n always containing a CRC error (the block is always marked as not received by the IUT).
Test purpose	Check that the IUT: At ARQ_RX_PURGE_TIMEOUT expiry, transmits the next ARQ feedback IE containing block n's BSN in the BSN field.

TP ID	SS/MS/MP/ARQ/RX/BV-013
Reference	Clause 6.3.4.6.3
Selection criteria	
Initial condition	An ARQ connection is established and the IUT is the receiver on this connection. The TE transmits ARQ blocks with some containing ARQ errors. The IUT acknowledges the correct blocks and NACKs the blocks containing the CRC errors. The TE then transmits an ARQ Discard message containing the BSNs of the blocks with the errors.
Test purpose	Check that the IUT: Acknowledges the blocks containing the errors in the ARQ Feedback IE; and that the following ARQ Feedback IE BSN field's value is greater than (modulus 2^{11}) than the BSN of the last CRC error block.

TP ID	SS/MS/MP/ARQ/RX/BV-014
Reference	Clause 6.3.4.6.3
Selection criteria	
Initial condition	An ARQ connection is established and the IUT is the receiver on this connection. The TE transmits a set of ARQ blocks with no errors, a block with a CRC error, and another set without errors in that order.
Test purpose	Check that the IUT: Acknowledges the blocks in the first error-free set with a cumulative acknowledgement and acknowledges the second error-free set with either specific block acknowledgement, cumulative acknowledgement, or a combination of both and that the acknowledgements are sent in the order of the ARQ block numbers as received.

TP ID	SS/MS/MP/ARQ/RX/BV-015
Reference	Clause 6.3.4.6.3
Selection criteria	
Initial condition	An ARQ connection is established and the IUT is the receiver on this connection. ARQ_DELIVER_IN_ORDER is not enabled. The TE transmits an incomplete set for a MAC SDU and then a complete set of blocks for another MAC SDU.
Test purpose	Check that the IUT: Provides the convergence layer with the complete SDU immediately after reception of its last block.
Note	Requires an Upper Tester.

TP ID	SS/MS/MP/ARQ/RX/BV-016
Reference	Clause 6.3.4.6.3
Selection criteria	
Initial condition	An ARQ connection is established and the IUT is the receiver on this connection. ARQ_DELIVER_IN_ORDER is enabled. The TE transmits an incomplete set for a MAC SDU and then a complete set of blocks for another MAC SDU.
Test purpose	Check that the IUT: Provides the convergence layer with the complete SDU only after the incomplete set of blocks have been purged using ARQ_RX_PURGE_TIMEOUT.
Note	Requires an Upper Tester.

5.3.2.2.3.3   Transmit (TX)

TP ID	SS/MS/MP/ARQ/TX/BV-000
Reference	Clause 6.3.4, table 6
Selection criteria	
Initial condition	An ARQ connection is established and the IUT is the transmitter on this connection. The IUT transmits ARQ blocks after which the TE transmits ARQ feedback information in an ARQ Feedback standalone message. The IUT then transmits another set of ARQ blocks after which the ARQ feedback information is piggy-backed in a PDU by setting to 1 bit #4 in the Type encodings of the generic MAC header field and placing the ARQ Feedback Payload in the first packed subheader of the PDU.
Test purpose	Check that the IUT: Correctly processes the ARQ feedback information in both the ARQ Feedback standalone message and in the piggy-backed packed PDU subheader.

TP ID	SS/MS/MP/ARQ/TX/BV-001
Reference	Clause 6.3.4.1
Selection criteria	
Initial condition	An ARQ connection is established and the IUT is the transmitter on this connection. Fragmentation occurs on the connection.
Test purpose	Check that the IUT: Fragments the SDU only on ARQ block boundaries.

TP ID	SS/MS/MP/ARQ/TX/BV-002
Reference	Clause 6.3.4.1
Selection criteria	
Initial condition	An ARQ connection is established and the IUT is the transmitter on this connection. The PDU is not packed.
Test purpose	Check that the IUT: Transmits the blocks with contiguous BSNs.

TP ID	SS/MS/MP/ARQ/TX/BV-003
Reference	Clause 6.3.4.1
Selection criteria	
Initial condition	An ARQ connection is established and the IUT is the transmitter on this connection. The PDU is packed.
Test purpose	Check that the IUT: Transmits the sequence of blocks immediately between the MAC subheaders with contiguous sequence numbers and the sequence of blocks after the last packing subheader with contiguous sequence numbers.

TP ID	SS/MS/MP/ARQ/TX/BV-004
Reference	Clause 6.3.4.1
Selection criteria	
Initial condition	An ARQ connection is established and the IUT is the transmitter on this connection. The PDU contains packing or fragmentation subheaders.
Test purpose	Check that the IUT: Places into the subheader's BSN field the sequence number of the first ARQ block in the sequence of blocks following the subheader.

TP ID	SS/MS/MP/ARQ/TX/BV-005
Reference	Clause 6.3.4.6.2
Selection criteria	
Initial condition	An ARQ connection is established and the IUT is the transmitter on this connection. The IUT has transmitted ARQ blocks, all of which the TE has acknowledged except one. The TE has transmitted a NACK concerning this block using a selective ACK map. (This block is now in the "Waiting" state.)
Test purpose	Check that the IUT: Retransmits the NACK block followed by other blocks not yet sent using the rules for fragmentation and packing.

TP ID	SS/MS/MP/ARQ/TX/BV-006
Reference	Clause 6.3.4.6.2
Selection criteria	
Initial condition	An ARQ connection is established and the IUT is the transmitter on this connection. The IUT has transmitted ARQ blocks. The TE transmits ACKs for some of the blocks and NACKs concerning the other blocks using a selective ACK map. (These blocks are now in the "Waiting" state.)
Test purpose	Check that the IUT: Retransmits the NACK blocks with the block having the lowest BSN being retransmitted first followed by other blocks not yet sent using the rules for fragmentation and packing.

TP ID	SS/MS/MP/ARQ/TX/BV-007
Reference	Clause 6.3.4.6.2
Selection criteria	
Initial condition	An ARQ connection is established and the IUT is the transmitter on this connection. The IUT has transmitted ARQ blocks. The TE has not transmitted either ACKs or NACKs for these blocks. (These blocks are now in the "Outstanding" state.)
Test purpose	Check that the IUT: Does not retransmit these ARQ blocks.

TP ID	SS/MS/MP/ARQ/TX/BV-008
Reference	Clause 6.3.4.6.2
Selection criteria	
Initial condition	An ARQ connection is established and the IUT is the transmitter on this connection. The IUT has transmitted ARQ blocks. The TE then transmits a block ACK for an invalid BSN.
Test purpose	Check that the IUT: Ignores the block ACK.

TP ID	SS/MS/MP/ARQ/TX/BV-009
Reference	Clause 6.3.4.6.2
Selection criteria	
Initial condition	An ARQ connection is established and the IUT is the transmitter on this connection. The IUT has transmitted ARQ blocks where a cumulative ACK is possible for a set of blocks. The TE then transmits a cumulative ACK for a subset of this set.
Test purpose	Check that the IUT: Does not retransmit any of the blocks in the cumulative ACK; and retransmits the un-ACKed subset of the set.

TP ID	SS/MS/MP/ARQ/TX/BV-010
Reference	Clause 6.3.4.6.2
Selection criteria	
Initial condition	An ARQ connection is established and the IUT is the transmitter on this connection. The IUT has transmitted ARQ blocks. The TE then transmits a selective ACK with gaps (indicating NACK for some of the transmitted blocks).
Test purpose	Check that the IUT: Does not retransmit any of the blocks in the selective ACK; and retransmits the blocks not selectively ACKed.

TP ID	SS/MS/MP/ARQ/TX/BV-011
Reference	Clause 6.3.4.6.2
Selection criteria	
Initial condition	An ARQ connection is established and the IUT is the transmitter on this connection. The IUT has transmitted ARQ blocks. The TE transmits a selective ACK for all blocks except BSN_i and BSN_k where $i < k$ (i.e. where block BSN_i was transmitted before block BSN_k).The IUT then transmits more ARQ blocks including those for BSN_i and BSN_k. The IUT then transmits a selective ACK for BSN_k.
Test purpose	Check that the IUT: Transmits more ARQ blocks including that for BSN_i.

TP ID	SS/MS/MP/ARQ/TX/BV-012
Reference	Clause 6.3.4.6.2
Selection criteria	
Initial condition	An ARQ connection is established and the IUT is the transmitter on this connection. The IUT has transmitted ARQ blocks. The TE transmits an ACK for all blocks except BSN_i. Block BSN_k is ACKed where $i < k$ (i.e. where block BSN_i was transmitted before block BSN_k). Thus, there is a NACK for block BSN_i.
Test purpose	Check that the IUT: The IUT then transmits more ARQ blocks including that for BSN_i.

TP ID	SS/MS/MP/ARQ/TX/BV-013
Reference	Clause 6.3.4.6.2
Selection criteria	
Initial condition	An ARQ connection is established and the IUT is the receiver on this connection. The TE transmits ARQ blocks packed in a PDU with a break in the contiguous BSN sequence numbers: …, BSN_n, BSN_{n+2}, …
Test purpose	Check that the IUT: Transmits a NACK for block BSN_{n+1}.

TP ID	SS/MS/MP/ARQ/TX/BV-014
Reference	Clause 6.3.4.6.2
Selection criteria	
Initial condition	An ARQ connection is established and the IUT is the transmitter on this connection. The IUT transmits ARQ blocks. The TE does not send any ACKs or NACKs for any block from BSN_n and on.
Test purpose	Check that the IUT: Retransmits block BSN_n after ARQ_RETRY_TIMEOUT time from the first sending of block BSN_n.

TP ID	SS/MS/MP/ARQ/TX/BV-015
Reference	Clauses 6.3.4.3.4, 6.3.4.6.2
Selection criteria	
Initial condition	An ARQ connection is established and the IUT is the transmitter on this connection. The IUT transmits ARQ blocks. The TE does not send any ACKs or NACKs for any block from BSN_n and on. The IUT then retransmits block BSN_n after ARQ_RETRY_TIMEOUT time from the first sending of block BSN_n. The TE again does not send any ACKs or NACKs for any block from BSN_n and on.
Test purpose	Check that the IUT: Retransmits block BSN_n after ARQ_RETRY_TIMEOUT time from the last sending of block BSN_n.

TP ID	SS/MS/MP/ARQ/TX/BV-016
Reference	Clause 6.3.4.6.2
Selection criteria	
Initial condition	An ARQ connection is established and the IUT is the transmitter on this connection. The IUT transmits ARQ blocks. (ARQ_BLOCK_LIFETIME begins).The TE does not send any ACKs or NACKs for any block from BSN_n and after to any of the repeated transmissions.
Test purpose	Check that the IUT: Transmits an ARQ DISCARD message between ARQ_BLOCK_LIFETIME expiry and ARQ_RX_PURGE_TIMEOUT + ARQ_RETRY_TIMEOUT expiry.

TP ID	SS/MS/MP/ARQ/TX/BV-017
Reference	Clause 6.3.4.6.2
Selection criteria	
Initial condition	An ARQ connection is established and the IUT is the transmitter on this connection. The IUT transmits ARQ blocks. (ARQ_BLOCK_LIFETIME begins).The TE does not send any ACKs or NACKs for any block from BSN_n and after to any of the repeated transmissions. The IUT transmits an ARQ DISCARD message between ARQ_BLOCK_LIFETIME expiry and ARQ_RX_PURGE_TIMEOUT + ARQ_RETRY_TIMEOUT expiry. (ARQ_RETRY_TIMEOUT begins.) The TE does not send an ACK for the discarded BSN_n.
Test purpose	Check that the IUT: After ARQ_RETRY_TIMEOUT expiry, retransmits the ARQ DISCARD message.

TP ID	SS/MS/MP/ARQ/TX/BV-018
Reference	Clause 6.3.4.6.2
Selection criteria	
Initial condition	An ARQ connection is established and the IUT is the transmitter on this connection. The IUT transmits ARQ blocks. (ARQ_BLOCK_LIFETIME begins).The TE does not send any ACKs or NACKs for any block from BSN_n and after to any of the repeated transmissions. The IUT transmits an ARQ DISCARD message between ARQ_BLOCK_LIFETIME expiry and ARQ_RX_PURGE_TIMEOUT + ARQ_RETRY_TIMEOUT expiry. (ARQ_RETRY_TIMEOUT begins.) The TE does not send an ACK for the discarded BSN_n.
Test purpose	Check that the IUT: After ARQ_RETRY_TIMEOUT expiry, repeatedly retransmits the ARQ DISCARD message, and restarts ARQ_RETRY_TIMEOUT until receiving an ACK for the discarded BSN_n.

5.3.2.2.4   CRC Use (CRC)

TP ID	SS/MS/MP/CRC/BV-000
Reference	Clauses 6.3.1.1, 6.3.3.5
Selection criteria	
Initial condition	
Test purpose	Check that the IUT: Includes a CRC as defined in IEEE 802.3 in each generic MAC header (HT set to 0). The CRC shall cover the generic MAC header and MAC PDU payload. The CRC shall cover the payload after encryption, if it is encrypted.

TP ID	SS/MS/MP/CRC/BV-001
Reference	Clause 6.3.2.3
Selection criteria	
Initial condition	
Test purpose	Check that the IUT: Enables CRC usage for the Initial Ranging, Broadcast, Basic, and Primary Management connections.

TP ID	SS/MS/MP/CRC/BV-002
Reference	Clause 6.3.3.5
Selection criteria	
Initial condition	
Test purpose	Check that the IUT: For every bandwidth request header (HT set to 1), the MAC PDU is not protected by a CRC.

5.3.2.2.5   Encryption (EN)

TP ID	SS/MS/MP/EN/BV-000
Reference	Clause 6.3.3.6
Selection criteria	
Initial condition	
Test purpose	Check that the IUT: Never encrypts the generic (HT set to 0) MAC header.

TP ID	SS/MS/MP/EN/BV-001
Reference	Clause 6.3.3.6
Selection criteria	
Initial condition	IUT is operational. The TE transmits an unencrypted MAC DATA PDU mapped to an SA requiring encryption.
Test purpose	Check that the IUT: Discards the MAC PDU.

TP ID	SS/MS/MP/EN/BV-002
Reference	Clause 7.1.1
Selection criteria	
Initial condition	
Test purpose	Check that the IUT: Having exchanged the key parameters successfully, continues to send the MAC Management messages in clear.

TP ID	SS/MS/MP/EN/BV-003
Reference	Clause 7.3.1
Selection criteria	
Initial condition	Operational. The tester has sent a valid SA Add message.
Test purpose	Check that the IUT: Transmits a valid Key Request message and ultimately establishes encryption/decryption of MAC DATA PDUs for the new SAID.

5.3.2.2.5.1   SS Reauthorization (SSR)

TP ID	SS/MS/MP/EN/SSR/BV-000
Reference	Clause 7.2.5.5 3-B
Selection criteria	
Initial condition	The IUT is encrypting. The tester has transmitted a Tek Invalid message. The IUT transmits Key Request messages to which the tester does not reply. The IUT then transmits an Auth Request to re-authorize. (The IUT is now in Op Reauth Wait state.)
Test purpose	Check that the IUT: Transmits no additional message.
Parameter values	This test is possible using the timer values in table 342. Using other values may cause both TEKs' lifetime to expire prior to receiving the Auth Request for re-authorization.

TP ID	SS/MS/MP/EN/SSR/BV-001
Reference	Clause 7.2.5.5 3-B, 4-C
Selection criteria	
Initial condition	The IUT is encrypting. The tester has transmitted a Tek Invalid message. The IUT transmits Key Request messages to which the tester does not reply. The IUT then transmits an Auth Request to re-authorize. (The IUT is now in Op Reauth Wait state.) The tester then transmits a valid Auth Reply.
Test purpose	Check that the IUT: Transmits a valid Key Request message.
Parameter values	This test is possible using the timer values in table 342. Using other values may cause both TEKs' lifetime to expire prior to receiving the Auth Request for re-authorization.

TP ID	SS/MS/MP/EN/SSR/BV-002
Reference	Clause 7.2.5.5 3-E
Selection criteria	
Initial condition	The IUT is encrypting. The IUT has sent a Key Request to rekey. The tester does not reply to any Key Request causing the IUT to periodically sending Key Requests.
Test purpose	Check that the IUT: Transmits an Auth Request (T_AKlifetime – T_AuthGrace) seconds after the previous authorization but less than T_AKlifetime seconds after the same authorization. The IUT also stops transmitting Key Requests after transmitting the Auth Request. (The IUT is in the Rekey Reauth Wait state.) Encryption of MAC DATA PDU Payloads continues throughout the transaction.
Note	This test is possible using the timer values in table 342. Using other values may cause both TEKs' lifetime to expire prior to receiving the Auth Request for re-authorization.

TP ID	SS/MS/MP/EN/SSR/BV-003
Reference	Clause 7.2.5.5 4-F
Selection criteria	
Initial condition	The IUT is encrypting. The IUT has sent a Key Request to rekey. The tester does not reply to any Key Request causing the IUT to periodically sending Key Requests. The IUT then transmits an Auth Request to re-authorize. The tester then transmits a valid Auth Reply. (The IUT is now in the Reauthorization complete state.)
Test purpose	Check that the IUT: Transmits a valid Key Request. Encryption of MAC DATA PDU Payloads continues throughout the transaction.
Parameter values	This test is possible using the timer values in table 342. Using other values may cause both TEKs' lifetime to expire prior to receiving the Auth Request for re-authorization.

TP ID	SS/MS/MP/EN/SSR/BV-004
Reference	Clause 7.2.5.5 1-D
Selection criteria	
Initial condition	The IUT is encrypting for an SAID. The IUT has transmitted an Auth Request for reauthorization. The tester has then transmitted an Auth Reply that does not include the SAID.
Test purpose	Check that the IUT: Does not encrypt any further MAC DATA PDUs and does not send any additional Key messages for the SAID.

TP ID	SS/MS/MP/EN/SSR/BV-005
Reference	Clause 7.2.5.5 1-E
Selection criteria	
Initial condition	The IUT is encrypting for an SAID. The IUT has transmitted a Key Request for refresh. The tester has then transmitted an Auth Reply that does not include the SAID.
Test purpose	Check that the IUT: Does not encrypt any further MAC DATA PDUs and does not send any additional Key messages for the SAID.

TP ID	SS/MS/MP/EN/SSR/BV-006
Reference	Clause 7.2.5.5 1-F
Selection criteria	
Initial condition	The IUT is encrypting. The IUT has sent a Key Request to rekey. The tester does not reply to any Key Request causing the IUT to periodically send Key Requests. The IUT then transmits an Auth Request to re-authorize. (The IUT is now in the Rekey Reauth state.) The tester then transmits an Auth Reply that does not include an SAID that was active before the reauthorization.
Test purpose	Check that the IUT: Does not encrypt any further MAC DATA PDUs and does not send any additional Key Request messages for the missing SAID.
Parameter values	This test is possible using the timer values in table 342. Using other values may cause both TEKs' lifetime to expire prior to receiving the Auth Request for re-authorization.

TP ID	SS/MS/MP/EN/SSR/BV-007
Reference	Clause 7.2.5.5 1-C
Selection criteria	
Initial condition	The IUT is encrypting. The tester has transmitted a TEK Invalid message. The IUT has then transmitted multiple Key Request messages until it transmits an Auth Request message to reauthorize. The tester then transmits an Auth Reply that does not include an SAID that was active before the reauthorization.
Test purpose	Check that the IUT: Does not encrypt any further MAC DATA PDUs and does not send any additional Key Request messages for the missing SAID.
Parameter values	This test is possible using the timer values in table 342. Using other values may cause both TEKs' lifetime to expire prior to receiving the Auth Request for re-authorization.

5.3.2.2.5.2   TEK Update (TKU)

TP ID	SS/MS/MP/EN/TKU/BV-000
Reference	Clause 6.3.3.6
Selection criteria	
Initial condition	IUT is operational and transmitting MAC data PDUs.
Test purpose	Check that the IUT: Discards an unencrypted MAC data PDU received on a connection mapped to an SA requiring encryption.

TP ID	SS/MS/MP/EN/TKU/BV-001
Reference	Clauses 6.3.3.6, 7.2.5.5 8-B
Selection criteria	
Initial condition	IUT has just become authorized. Only one SAID (for the Basic CID) is established. The IUT has transmitted a valid Key Request message. The tester has responded with a valid Key Reply message.
Test purpose	Check that the IUT: Encrypts the MAC DATA PDU Payload according to the SA keying material.

TP ID	SS/MS/MP/EN/TKU/BV-002
Reference	Clauses 6.3.3.6, 7.2.5, 7.2.5.5 8-B
Selection criteria	
Initial condition	IUT has just become authorized. The SAID for the Basic CID and several SAIDs for Static SAs are established. The IUT has transmitted a valid Key Request message for each SAID. The tester has responded with a valid Key Reply message for each SAID.
Test purpose	Check that the IUT: Encrypts each MAC DATA PDU Payload according to the SA keying material for each SAID.

TP ID	SS/MS/MP/EN/TKU/BV-003
Reference	Clause 7.2.5.5 8-E
Selection criteria	
Initial condition	IUT is encrypting. Only one SAID (for the Basic CID) is established. IUT has transmitted a valid Key Request to refresh keys. Tester has transmitted a valid Key Reply with 2 keys.
Test purpose	Check that the IUT: Encrypts the MAC DATA PDU Payload according to the refreshed SA keying material. Encryption of MAC DATA PDU Payloads continues throughout the transaction.

TP ID	SS/MS/MP/EN/TKU/BV-004
Reference	Clause 7.2.5, 7.2.5.5 8-E
Selection criteria	
Initial condition	IUT is encrypting. The SAID for the Basic CID and several SAIDs for Static SAs are established. IUT has transmitted a one valid Key Request for each SAID to refresh keys. Tester has transmitted a valid Key Reply with 2 keys for each SAID.
Test purpose	Check that the IUT: Encrypts the MAC DATA PDU Payloads according to the refreshed SA keying material for each SAID.

TP ID	SS/MS/MP/EN/TKU/BV-005
Reference	Clause 7.1.3
Selection criteria	
Initial condition	IUT is operational. The current keying material has expired before a new set of keying material has been received.
Test purpose	Check that the IUT: Performs network entry.

TP ID	SS/MS/MP/EN/TKU/BV-006
Reference	Clause 7.4.2.3, figure 134
Selection criteria	
Initial condition	IUT is operational and encrypting uplink MAC DATA PDUs. Given that one TEK is active.
Test purpose	Check that the IUT: Encrypts the uplink MAC DATA PDUs using the active TEK.

TP ID	SS/MS/MP/EN/TKU/BV-007
Reference	Clause 7.4.2.3, figure 134
Selection criteria	
Initial condition	IUT is operational and encrypting uplink MAC DATA PDUs. Given that two TEKs are active.
Test purpose	Check that the IUT: Encrypts the uplink MAC DATA PDUs using the newer TEK.

TP ID	SS/MS/MP/EN/TKU/BV-008
Reference	Clause 7.4.2.3, figure 134
Selection criteria	
Initial condition	IUT is operational and decrypting downlink MAC DATA PDUs. Given that one TEK is active.
Test purpose	Check that the IUT: Decrypts the downlink MAC DATA PDUs using the active TEK.

TP ID	SS/MS/MP/EN/TKU/BV-009
Reference	Clause 7.4.2.3, figure 134
Selection criteria	
Initial condition	IUT is operational and decrypting downlink MAC DATA PDUs. The downlink MAC DATA PDUs are encrypted using the newer of the two active TEKs.
Test purpose	Check that the IUT: Decrypts the MAC DATA PDUs.

TP ID	SS/MS/MP/EN/TKU/BV-010
Reference	Clause 7.4.2.3, figure 134
Selection criteria	
Initial condition	IUT is operational and decrypting downlink MAC DATA PDUs. The downlink MAC DATA PDUs are encrypted using the older of the two active TEKs.
Test purpose	Check that the IUT: Decrypts the MAC DATA PDUs.

TP ID	SS/MS/MP/EN/TKU/BV-011
Reference	Clause 11.9.4
Selection criteria	
Initial condition	IUT is encrypting. IUT has transmitted a valid Key Request to refresh keys. Tester has transmitted a valid Key Reply with 2 keys. One of the key's TEK Parameters indicates a key lifetime of zero.
Test purpose	Check that the IUT: Encrypts the MAC DATA PDU Payload according to the TEK parameters whose key lifetime is not zero. Encryption of MAC DATA PDU Payloads continues throughout the transaction.

5.3.2.2.5.3   TEK Exchange (TKX)

TP ID	SS/MS/MP/EN/TKX/BV-000
Reference	Clause 7.2.5.5 7-D, table 342
Selection criteria	
Initial condition	IUT is operational. Only (one SAID for the Basic CID) is established. The IUT has transmitted a valid Key Request message and started T_TEKGrace and T_TEKlifetime. The tester has responded with a valid Key Reply message.
Test purpose	Check that the IUT: Requests key refresh by transmitting a valid Key Request message in the interval between (T_TEKlifetime – T_TEKGrace) and T_TEKGrace. Protocol testing timer values are used from table 342. Encryption of MAC DATA PDU Payloads continues throughout the transaction.

TP ID	SS/MS/MP/EN/TKX/BV-001
Reference	Clauses 7.2.5.4, 7.2.5.5 7-D
Selection criteria	
Initial condition	IUT is operational. Only (one SAID for the Basic CID) is established. Tester has transmitted a non-default value for T_TEKgrace in Auth Reply. The IUT has transmitted a valid Key Request message and started T_TEKGrace and T_TEKlifetime according to the values in Auth Reply. The tester has responded with a valid Key Reply message.
Test purpose	Check that the IUT: Requests key refresh by transmitting a valid Key Request message in the interval between (T_TEKlifetime – T_TEKgrace) and T_TEKgrace.

TP ID	SS/MS/MP/EN/TKX/BV-002
Reference	Clause 7.2.5.5 6-E
Selection criteria	
Initial condition	The IUT is encrypting. The IUT has sent a Key Request to rekey and has started T_RekeyWait. The tester does not reply to the Key Request.
Test purpose	Check that the IUT: Re-transmits the Key Request after T_RekeyWait expires. Encryption of MAC DATA PDU Payloads continues throughout the transaction.

TP ID	SS/MS/MP/EN/TKX/BV-003
Reference	Clause 7.2.5.5 6-E
Selection criteria	
Initial condition	The IUT is encrypting. The IUT has sent a Key Request to rekey and has started T_RekeyWait. The tester does not reply to any Key Request.
Test purpose	Check that the IUT: Re-transmits a Key Request and re-starts T_RekeyWait each time after T_RekeyWait expires. Encryption of MAC DATA PDU Payloads continues throughout the transaction.

TP ID	SS/MS/MP/EN/TKX/BV-004
Reference	Clause 7.2.5.5 5-D
Selection criteria	
Initial condition	The IUT is encrypting (operational state). The tester has transmitted a TEK Invalid message.
Test purpose	Check that the IUT: Transmits a valid Key Request message and stops using the SAID keying material.

TP ID	SS/MS/MP/EN/TKX/BV-005
Reference	Clause 7.2.5.5 5-D, 6-B
Selection criteria	
Initial condition	The IUT is encrypting (operational state). The tester has transmitted a TEK Invalid message. The IUT has then transmitted a valid Key Request message, stopped using the SAID keying material, and started T_OpWait. The tester does not respond to the Key Request message.
Test purpose	Check that the IUT: Retransmits a valid Key Request message after T_OpWait expires.

TP ID	SS/MS/MP/EN/TKX/BV-006
Reference	Clause 7.2.5.5 5-E
Selection criteria	
Initial condition	The IUT is encrypting (operational state). The IUT has transmitted a Key Request to refresh keys. (IUT is now in Rekey Wait state.) The tester has transmitted a TEK Invalid message.
Test purpose	Check that the IUT: Transmits a valid Key Request message and stops using the SAID keying material.

TP ID	SS/MS/MP/EN/TKX/BV-007
Reference	Clause 7.2.5.5 5-E, 6-B
Selection criteria	
Initial condition	The IUT is encrypting (operational state). The IUT has transmitted a Key Request to refresh keys. (IUT is now in Rekey Wait state.) The tester has transmitted a TEK Invalid message. The IUT has transmitted a valid Key Request message, stopped using the SAID keying material, and started T_OpWait. The tester does not respond to the Key Request message
Test purpose	Check that the IUT: Re-transmits a valid Key Request message after T_OpWait expires.

TP ID	SS/MS/MP/EN/TKX/BV-008
Reference	Clause 7.2.5.5 5-F
Selection criteria	
Initial condition	The IUT is encrypting. The IUT has sent a Key Request to rekey. The tester does not reply to any Key Request causing the IUT to periodically send Key Requests. The IUT then transmits an Auth Request to re-authorize. (The IUT is now in the Rekey Reauth state.) The tester then transmits a TEK Invalid message.
Test purpose	Check that the IUT: Stops using the SAID keying material. (For information only, the IUT is in the Op Reauth Wait state. The state is not included in the test.)
Parameter values	This test is possible using the timer values in table 342. Using other values may cause both TEKs' lifetime to expire prior to receiving the Auth Request for re-authorization.

TP ID	SS/MS/MP/EN/TKX/BV-009
Reference	Clause 7.2.5.5 3-B, 4-C
Selection criteria	
Initial condition	The IUT is encrypting. The tester has transmitted a Tek Invalid message. The IUT transmits Key Request messages to which the tester does not reply. The IUT then transmits an Auth Request to re-authorize. (The IUT is now in Op Reauth Wait state.) The tester then transmits a valid Auth Reply. The IUT then transmits a valid Key Request message and started T_OpWait. The tester does not respond to the Key Request.
Test purpose	Check that the IUT: Re-transmits the Key Request message after T_OpWait expires.
Parameter values	This test is possible using the timer values in table 342. Using other values may cause both TEKs' lifetime to expire prior to receiving the Auth Request for re-authorization.

TP ID	SS/MS/MP/EN/TKX/BV-010
Reference	Clause 7.2.5.5 9-E
Selection criteria	
Initial condition	The IUT is encrypting. The IUT has sent a valid Key Request message. (The IUT is in the Rekey Wait state). The tester has then transmitted a Key Reject message.
Test purpose	Check that the IUT: Does not send additional Key messages for the SAID in the Key Reject message.

5.3.2.2.6   Fragmentation (FR)

TP ID	SS/MS/MP/FR/BV-000
Reference	Clause 6.3.3.3
Selection criteria	
Initial condition	The maximum size of a fragment has been negotiated during connection establishment. The pending bandwidth allocation is larger than the negotiated maximum and, hence, would accept a larger fragment.
Test purpose	Check that the IUT: Forms fragments whose length is less than or equal to the negotiated maximum size.

TP ID	SS/MS/MP/FR/BV-001
Reference	Clause 6.3.3.3.1
Selection criteria	Non-ARQ connection
Initial condition	
Test purpose	Check that the IUT: Transmits fragments once and in sequence.

TP ID	SS/MS/MP/FR/BV-002
Reference	Clause 6.3.3.3.1
Selection criteria	
Initial condition	Non-ARQ connection. The TE transmits fragments in sequence but one fragment is missing.
Test purpose	Check that the IUT: Discards all MAC PDUs on the connection until a new first fragment is detected.

TP ID	SS/MS/MP/FR/BV-003
Reference	Clause 6.3.3.3.1
Selection criteria	
Initial condition	Non-ARQ connection. The TE transmits fragments in sequence but one fragment is missing.
Test purpose	Check that the IUT: Discards all MAC PDUs on the connection until a non-fragmented MAC PDU is detected.

TP ID	SS/MS/MP/FR/BV-004
Reference	Clause 6.3.3.3.2
Selection criteria	
Initial condition	ARQ-enabled connection.
Test purpose	Check that the IUT: Forms fragments for transmission by concatenating sets of ARQ blocks with adjacent sequence numbers.

TP ID	SS/MS/MP/FR/BV-005
Reference	Clause 6.3.3.4.1.2
Selection criteria	
Initial condition	The IUT has established a non-ARQ connection (Extended Type bit in generic MAC header set to 0) for variable-length SDUs.
Test purpose	Check that the IUT: Includes fragmentation information for individual MAC SDUs or MAC SDU fragments in the Packing subheader when packing is used.

TP ID	SS/MS/MP/FR/BV-006
Reference	Clause 6.3.3.4.1.2
Selection criteria	
Initial condition	The IUT has established a non-ARQ connection (Extended Type bit in generic MAC header set to 0) for variable-length SDUs.
Test purpose	Check that the IUT: When no Packing subheader is present, places the fragmentation information for individual MAC SDU fragments in the corresponding Fragmentation subheader.

TP ID	SS/MS/MP/FR/BV-007
Reference	Clause 6.3.3.4.2
Selection criteria	
Initial condition	The IUT has established an ARQ connection (Extended Type bit in generic MAC header set to 1) for variable-length SDUs on the connection.
Test purpose	Check that the IUT: Includes fragmentation information for individual MAC SDUs or MAC SDU fragments in the Packing subheader when packing is used.

TP ID	SS/MS/MP/FR/BV-008
Reference	Clause 6.3.3.4.2
Selection criteria	
Initial condition	The IUT has established an ARQ connection (Extended Type bit in generic MAC header set to 1) for variable-length SDUs on the connection.
Test purpose	Check that the IUT: When no Packing subheader is present, places the fragmentation information for individual MAC SDU fragments in the corresponding Fragmentation subheader.

5.3.2.2.7   Packing (PK)

TP ID	SS/MS/MP/PK/BV-000
Reference	Clause 6.3.2.2.3
Selection criteria	
Initial condition	
Test purpose	Check that the IUT: When packing variable-length MAC SDUs, precedes each one with a Packing subheader.

TP ID	SS/MS/MP/PK/BV-001
Reference	Clause 6.3.3.4
Selection criteria	
Initial condition	Packing has been negotiated/turned on for a connection.
Test purpose	Check that the IUT: Transmits each MAC SDU into a separate PDU for each, or packs a group of MAC SDUs into a single MAC PDU.
Note	Packing is not mandatory even if negotiated for a connection.

TP ID	SS/MS/MP/PK/BV-002
Reference	Clause 6.3.3.4.1.1
Selection criteria	
Initial condition	The IUT has established a non-ARQ connection (Extended Type bit in generic MAC header set to 0) for fixed-length SDUs.
Test purpose	Check that the IUT: For packing fixed length blocks, the Request/Transmission policy is set to allow packing and prohibit fragmentation.

TP ID	SS/MS/MP/PK/BV-003
Reference	Clause 6.3.3.4.1.1
Selection criteria	
Initial condition	The IUT has established a non-ARQ connection (Extended Type bit in generic MAC header set to 0) for fixed-length SDUs.
Test purpose	Check that the IUT: Includes the SDU size in the DSA-REQ message when establishing the connection.

TP ID	SS/MS/MP/PK/BV-004
Reference	Clause 6.3.3.4.1.2
Selection criteria	
Initial condition	The IUT has established a non-ARQ connection (Extended Type bit in generic MAC header set to 0) for variable-length SDUs.
Test purpose	Check that the IUT: Attaches a Packing subheader to each MAC SDU in the MAC PDU.

TP ID	SS/MS/MP/PK/BV-005
Reference	Clause 6.3.3.4.2
Selection criteria	
Initial condition	The IUT has established an ARQ connection (Extended Type bit in generic MAC header set to 1) for variable-length SDUs.
Test purpose	Check that the IUT: Attaches a Packing subheader to each MAC SDU in the MAC PDU.

TP ID	SS/MS/MP/PK/BV-006
Reference	Clause 6.3.3.4.2
Selection criteria	
Initial condition	ARQ and packing enabled on the connection. TE transmits a MAC SDU broken into multiple fragments that are then packed into the same MAC PDU.
Test purpose	Check that the IUT: Unpacks and de-fragments the MAC PDU to form the MAC SDU.

5.3.2.2.8   Privacy Key Management (PKM)

TP ID	SS/MS/MP/PKM/BV-000
Reference	Clause 6.3.2.3.9
Selection criteria	
Initial condition	IUT is operational.
Test purpose	Check that the IUT: On receiving a PKM-RSP MAC message with an invalid PKM packet type code, Does nothing and remains in the same state.

TP ID	SS/MS/MP/PKM/BV-001
Reference	Clause 6.3.2.3.9
Selection criteria	
Initial condition	IUT is operational.
Test purpose	Check that the IUT: On transmitting a new PKM message, Increments (modulo 256) the Identifier field.

TP ID	SS/MS/MP/PKM/BV-002
Reference	Clause 6.3.2.3.9
Selection criteria	
Initial condition	IUT is operational.
Test purpose	Check that the IUT: On retransmitting a PKM message, Keeps the Identifier field the same value as that for the PKM message.

TP ID	SS/MS/MP/PKM/BV-003
Reference	Clause 6.3.2.3.9
Selection criteria	
Initial condition	IUT is operational.
Test purpose	Check that the IUT: On transmitting at PKM-REQ Auth Info message, Sets the Identifier field to 0.

TP ID	SS/MS/MP/PKM/BV-004
Reference	Clause 6.3.2.3.9
Selection criteria	
Initial condition	IUT is has negotiated basic capabilities and transmitted a PKM-REQ Auth Req message.
Test purpose	Check that the IUT: On receiving a PKM-RSP Auth Reply message with an Identifier field not matching that of the Auth Req message, Does not transmit a message and remains in the same state.

TP ID	SS/MS/MP/PKM/BV-005
Reference	Clause 6.3.2.3.9
Selection criteria	
Initial condition	IUT is has negotiated basic capabilities and transmitted a PKM-REQ Auth Req message.
Test purpose	Check that the IUT: On receiving a PKM-RSP Auth Reject message with an Identifier field not matching that of the Auth Req message, Does not transmit a message and remains in the same state.

TP ID	SS/MS/MP/PKM/BV-006
Reference	Clause 6.3.2.3.9
Selection criteria	
Initial condition	IUT has negotiated basic capabilities and begun TEK exchange.
Test purpose	Check that the IUT: On receiving a PKM-RSP Key Reply message with an Identifier field not matching that of the Key Req message, Does not transmit a message and remains in the same state

TP ID	SS/MS/MP/PKM/BV-007
Reference	Clause 6.3.2.3.9
Selection criteria	
Initial condition	IUT is has negotiated basic capabilities and begun TEK exchange.
Test purpose	Check that the IUT: On receiving a PKM-RSP Key Reject message with an Identifier field not matching that of the Key Req message, Does not transmit a message and remains in the same state

TP ID	SS/MS/MP/PKM/BV-008
Reference	Clause 6.3.2.3.9
Selection criteria	
Initial condition	IUT is operational. Given different ordering of PKM-RSP message attributes and the HMAC-Digest attribute, if any, is correctly placed,
Test purpose	Check that the IUT: Remains operational.

TP ID	SS/MS/MP/PKM/BV-009
Reference	Clauses 6.3.2.3.9, 11.9
Selection criteria	
Initial condition	IUT has negotiated basic capabilities and SS authorization and key exchange has started.
Test purpose	Check that the IUT: On receiving a PKM_RSP message with unknown attributes, Ignores the unknown attributes and recognizes the valid attributes.

TP ID	SS/MS/MP/PKM/BV-010
Reference	Clause 6.3.2.3.9
Selection criteria	
Initial condition	IUT has negotiated basic capabilities and SS authorization and key exchange has started.
Test purpose	Check that the IUT: On receiving a PKM_RSP message with missing required attributes, Does not transmit a message and stays in the same state.

5.3.2.2.9   Reports (RR)

TP ID	SS/MS/MP/RR/BV-000
Reference	Clause 6.3.2.3.33
Selection criteria	
Initial condition	The IUT is operational. The TE transmits a valid REP-REQ message.
Test purpose	Check that the IUT: Transmits a valid REP-RSP message.

5.3.2.2.10   Reset (RE)

TP ID	SS/MS/MP/RE/BV-000
Reference	Clause 6.3.2.3.22
Selection criteria	
Initial condition	The IUT is operational. The TE transmits a RES-CMD message on the Basic CID.
Test purpose	Check that the IUT: Resets itself, reinitializes the MAC sublayer, and repeats initial system access.

5.3.2.2.11   Uplink Scheduling (US)

TP ID	SS/MS/MP/US/BV-000
Reference	Clause 6.3.5.2.4
Selection criteria	
Initial condition	BE scheduling in use for this connection.
Test purpose	Check that the IUT: To obtain uplink transmission opportunities on this connection, uses only unicast request opportunities; or Unsolicited Data Grant Burst Types, or Contention request opportunities.

5.3.2.3   Message Behaviour for PMP (PMP)

5.3.2.3.1   Network Entry and Initialization (NE)

5.3.2.3.1.1   Initial Ranging (IR)

TP ID	SS/MS/PMP/NE/IR/BV-000
Reference	Clauses 6.3.2.3.5, 6.3.9.5
Selection criteria	
Initial condition	Wait for Initial Maintenance opportunity
Test purpose	Check that the IUT: Sends a RNG-REQ with a MAC header containing the HT bit set to 0 and the CID field set to zero.

TP ID	SS/MS/PMP/NE/IR/BV-001
Reference	Clauses 6.3.2.3.5, 6.3.9.5
Selection criteria	
Initial condition	Wait for RNG-REQ in Initial Ranging Contention Slot.
Test purpose	Check that the IUT: Sends a RNG-REQ containing the downlink Channel ID, the Requested Downlink Burst Profile, the SS MAC Address and the Mac Version.

TP	SS/MS/PMP/NE/IR/BV-002
Reference	Clauses 6.3.2.3.5-6, 6.3.9.5
Selection criteria	
Initial condition	Polled Initial Ranging
Test purpose	Check that the IUT: On receipt of a RNG-RSP containing the assigned Basic and Primary Management CIDs, sends a RNG-REQ containing the Basic CID in its MAC header.

TP ID	SS/MS/PMP/NE/IR/BV-003
Reference	Clauses 6.3.2.3.5-6, 6.3.9.5, table 365
Selection criteria	
Initial condition	Wait for RGN-RSP
Test purpose	Check that the IUT: Each time on receipt of a RNG-RSP containing a Ranging Status set to continue (1), sends a RNG-REQ containing the Basic CID in its MAC header until it receives a RNG-RSP containing a Ranging Status set to success (3).

TP ID	SS/MS/PMP/NE/IR/BV-004
Reference	Clauses 6.3.2.3.5-6, 6.3.9.5, table 365
Selection criteria	
Initial condition	Polled Initial Ranging
Test purpose	Check that the IUT: On receipt of a RNG-RSP containing a Ranging Status set to abort (2), reinitializes its MAC layer and sends a RNG-REQ with a MAC header containing the HT bit set to 0 and the CID field set to zero (Initial Ranging).

TP ID	SS/MS/PMP/NE/IR/BV-005
Reference	Clauses 6.3.2.3.5-6, 6.3.9.5
Selection criteria	
Initial condition	Polled Initial Ranging
Test purpose	Check that the IUT: On receipt of a RNG-RSP instructing to move to a new downlink frequency, sends a RNG-REQ containing the CID field set to zero in its MAC header.

TP ID	SS/MS/PMP/NE/IR/BV-006
Reference	Clauses 6.3.2.3.5-6, 6.3.9.5
Selection criteria	
Initial condition	Polled Initial Ranging
Test purpose	Check that the IUT: On receipt of a RNG-RSP instructing to move to a new uplink channel ID, sends a RNG-REQ containing the CID field set to zero in its MAC header.

TP ID	SS/MS/PMP/NE/IR/BV-007
Reference	Clause 11.1.3
Selection criteria	PIC_SS_conforms_802.16-2001
Initial condition	Negotiate Basic Capabilities. The IUT transmits a RNG-REQ indicating conformance with MAC version value = 3. The TE responds with MAC version value = 1 (conformance with IEEE 802.16-2001).
Test purpose	Check that the IUT: If PIC_SS_conforms_802.16-2001 is TRUE, conforms with 802.16-2001, else disables any attempt for uplink transmission.

TP ID	SS/MS/PMP/NE/IR/BV-008
Reference	Clause 11.1.3
Selection criteria	PIC_SS_conforms_802.16c-2002
Initial condition	Negotiate Basic Capabilities. The IUT transmits a RNG-REQ indicating conformance with MAC version value = 3. The TE responds with MAC version value = 2 (conformance with IEEE 802.16c-2002).
Test purpose	Check that the IUT: If PIC_SS_conforms_802.16c-2002 is TRUE, conforms with both 802.16-2001 and 802.16c-2002 and continues operation in conformance with 802.16c-2002, else disables any attempt for uplink transmission.

TP ID	SS/MS/PMP/NE/IR/BV-009
Reference	Clause 11.5, table 362 (row 3)
Selection criteria	
Initial condition	Polled Initial Ranging. The IUT transmits a valid RNG-REQ. The TE transmits a RNG-RSP message with a power level increase and Ranging Status = Continue (1). This behaviour is repeated for each subsequent RNG-REQ that the IUT transmits.
Test purpose	Check that the IUT: Eventually transmits a RNG-REQ message with a Ranging Anomalies TLV with Bit #0 set (SS already at maximum power).

TP ID	SS/MS/PMP/NE/IR/BV-010
Reference	Clause 11.5, table 362 (row 3)
Selection criteria	
Initial condition	Polled Initial Ranging. The IUT transmits a valid RNG-REQ. The TE transmits a RNG-RSP message with a power level decrease and Ranging Status = Continue (1). This behaviour is repeated for each subsequent RNG-REQ that the IUT transmits.
Test purpose	Check that: The IUT eventually transmits a RNG-REQ message with a Ranging Anomalies TLV with Bit #1 set (SS already at minimum power).

TP ID	SS/MS/PMP/NE/IR/BV-011
Reference	Table 365 (row 2)
Selection criteria	
Initial condition	Polled Initial Ranging. The IUT transmits a valid RNG-REQ. The TE transmits a RNG-RSP message with a power level decrease and Ranging Status = Continue (1).
Test purpose	Check that the IUT: Transmits a RNG-REQ message at the decreased power level.

TP ID	SS/MS/PMP/NE/IR/BV-012
Reference	Table 365 (row 2)
Selection criteria	
Initial condition	Polled Initial Ranging. The IUT transmits a valid RNG-REQ. The TE transmits a RNG-RSP message with a power level increase and Ranging Status = Continue (1).
Test purpose	Check that the IUT: Transmits a RNG-REQ message at the increased power level.

TP ID	SS/MS/PMP/NE/IR/BV-013
Reference	Table 365 (row 3)
Selection criteria	
Initial condition	Polled Initial Ranging. The IUT transmits a valid RNG-REQ. The TE transmits a RNG-RSP message with a negative Offset Frequency Adjustment and Ranging Status = Continue (1).
Test purpose	Check that the IUT: Transmits a RNG-REQ message at the lower frequency.

TP ID	SS/MS/PMP/NE/IR/BV-014
Reference	Table 365 (row 3)
Selection criteria	
Initial condition	Polled Initial Ranging. The IUT transmits a valid RNG-REQ. The TE transmits a RNG-RSP message with a positive Offset Frequency Adjustment and Ranging Status = Continue (1).
Test purpose	Check that the IUT: Transmits a RNG-REQ message at the higher frequency.

TP ID	SS/MS/PMP/NE/IR/TI-000
Reference	Clauses 6.3.2.3.5-6, 6.3.9.5, table 340 "Invited Ranging Retries"
Selection criteria	
Initial condition	Wait for RNG-REQ in Initial Ranging Contention Slot.
Test purpose	Check that the IUT: Having sent a RNG-REQ, on expiry of timer T3 and no action from the test equipment, resends a RNG-REQ n times.
Parameter values	$n \geq 15$

5.3.2.3.1.2   Negotiate Basic Capabilities (BC)

TP ID	SS/MS/PMP/NE/BC/BV-000
Reference	Clauses 6.3.2.3.23, 6.3.9.7
Selection criteria	
Initial condition	Completion of ranging, Negotiate Basic Capabilities
Test purpose	Check that the IUT: Sends a SBC-REQ with a MAC header containing the HT bit set to 0 and the Basic CID, the Physical Parameters Support, and the Bandwidth Allocation Support.

TP ID	SS/MS/PMP/NE/BC/BV-001
Reference	Clauses 6.3.2.3.23, 6.3.9.7
Selection criteria	
Initial condition	Wait for SBC-RSP
Test purpose	Check that the IUT: On receipt of a SBC-RSP containing the Physical Parameters set to an invalid value, re-sends a SBC-REQ containing the Physical Parameters Support and the Bandwidth Allocation Support.

TP ID	SS/MS/PMP/NE/BC/BV-002
Reference	Clause 11.1.1
Selection criteria	
Initial condition	
Test purpose	Check that the IUT: When the current transmitted power is outside the range -64 dBm to 63.5 dBm, assigns the closest of these extremes to the Current Transmit Power TLV of the SBC-REQ.

TP ID	SS/MS/PMP/NE/BC/BV-003
Reference	Clause 11.8.3.2
Selection criteria	NOT PIC_QAM_64
Initial condition	
Test purpose	Check that the IUT: Transmits an SBC-REQ with the Maximum Power TLV byte 3 value set to 0x00 (QAM64 not supported).

TP ID	SS/MS/PMP/NE/BC/TI-000
Reference	Clauses 6.3.2.3.23, 6.3.9.7, table 340 "SBC Request Retries"
Selection criteria	
Initial condition	Wait for SBC-RSP
Test purpose	Check that the IUT: For each expiry of timer T18 and no action from the test equipment, sends a SBC-REQ containing the Basic CID in its MAC header n times.
Parameter values	$3 \leq n \leq 16$

TP ID	SS/MS/PMP/NE/BC/TI-001
Reference	Clauses 6.3.2.3.23, 6.3.9.7, figure 66
Selection criteria	
Initial condition	Wait for SBC-RSP
Test purpose	Check that: For each expiry of timer T18 and no action from the test equipment and the retries are exhausted, re-initializes the MAC.

5.3.2.3.1.3   Certification (CRT)

TP ID	SS/MS/PMP/NE/CRT/BV-000
Reference	Clause 7.6.1.1
Selection criteria	
Initial condition	Use of an X.509 Version 3 Certificate
Test purpose	Check that the IUT: Has an SS certificate with a validity period greater than the operational lifetime of the SS.

TP ID	SS/MS/PMP/NE/CRT/BV-001
Reference	Clause 7.6.1.1
Selection criteria	
Initial condition	Use of an X.509 Version 3 Certificate
Test purpose	Check that the IUT: Has an SS certificate with a validity period beginning at the date of the generation of the device's certificate.

TP ID	SS/MS/PMP/NE/CRT/BV-002
Reference	Clause 7.6.1.1
Selection criteria	
Initial condition	
Test purpose	Check that the IUT: Encodes validity periods as UTC to always include seconds including 0 seconds in the format YYMMDDHHMMSSZ.

TP ID	SS/MS/PMP/NE/CRT/BV-003
Reference	Clause 7.6.1.2
Selection criteria	
Initial condition	Use of an X.509 Version 3 Certificate
Test purpose	Check that the IUT: Has an SS certificate serial number larger than another SS's serial number if the IUT was manufactured before the other SS. The time of manufacturer is that given in the tbsCertificate.validity.notBefore field.

TP ID	SS/MS/PMP/NE/CRT/BV-004
Reference	Clause 7.6.1.3
Selection criteria	
Initial condition	Use of an X.509 Version 3 Certificate
Test purpose	Check that the IUT: Has assigned an ASN.1 value of NULL to the parameters component of the ASN.1 type AlgorithmIdentifier in the tbsCertificate.signature and signatureAlgorithm fields of the certificate.

TP ID	SS/MS/PMP/NE/CRT/BV-005
Reference	Clause 7.6.1.4
Selection criteria	
Initial condition	Use of an X.509 Version 3 Certificate
Test purpose	Check that the IUT: Uses ISO 3166 to assign the 2-character PrintableString countryName attribute of the tbsCertificate.issuer and tbsCertificate.subject fields.

TP ID	SS/MS/PMP/NE/CRT/BV-006
Reference	Clause 7.6.1.4
Selection criteria	
Initial condition	Use of an X.509 Version 3 Certificate
Test purpose	Check that the IUT: For all other character strings than the countryName in the tbsCertificate.issuer and tbsCertificate.subject fields, uses PrintableString encoding if the string contains only characters from the PrintableString set.

TP ID	SS/MS/PMP/NE/CRT/BV-007
Reference	Clause 7.6.1.4
Selection criteria	
Initial condition	Use of an X.509 Version 3 Certificate
Test purpose	Check that the IUT: For all other character strings than the countryName in the tbsCertificate.issuer and tbsCertificate.subject fields, uses T.61/TeletexString if the string contains characters other those in the PrintableString set.

TP ID	SS/MS/PMP/NE/CRT/BV-008
Reference	Clause 7.6.1.4
Selection criteria	
Initial condition	Use of an X.509 Version 3 Certificate
Test purpose	Check that the IUT: Assigns the following OIDs for the issuer and subject Names in PKM certificates: id-at OBJECT IDENTIFIER ::= {joint-iso-ccitt(2) ds(5) 4} id-at-commonName OBJECT IDENTIFIER ::= {id-at 3} id-at-countryName OBJECT IDENTIFIER ::= {id-at 6} id-at-localityName OBJECT IDENTIFIER ::= {id-at 7} id-at-stateOrProviceName OBJECT IDENTIFIER ::= {id-at 8} id-at-organizationName OBJECT IDENTIFIER ::= {id-at 10} id-at-organizationalUnitName OBJECT IDENTIFIER ::= {{id-at 11}

TP ID	SS/MS/PMP/NE/CRT/BV-009
Reference	Clause 7.6.1.4.1
Selection criteria	
Initial condition	Use of an X.509 Version 3 Manufacturer Certificate
Test purpose	Check that the IUT: Has a Manufacturer's Certificate with the following attributes and fields: countryName=<Country of Manufacturer> organizationName=<Company Name> organizationalUnitName=WirelessMAN (literal value) commonName=<Company Name>

TP ID	SS/MS/PMP/NE/CRT/BV-010
Reference	Clause 7.6.1.4.1
Selection criteria	
Initial condition	Use of an X.509 Version 3 Manufacturer Certificate
Test purpose	Check that the IUT: If the certificate has the organizationalUnitName representing the manufacturing location, that the organizationalUnit Name having the value "WirelessMAN" precedes it.

TP ID	SS/MS/PMP/NE/CRT/BV-011
Reference	Clause 7.6.1.4.1
Selection criteria	
Initial condition	Use of an X.509 Version 3 Manufacturer Certificate
Test purpose	Check that the IUT: Has a manufacturer's certificate with no other attributes than the following: countryName stateOrProvinceName OPTIONAL localityName OPTIONAL organizationName organizationalUnitName (possibly two times, one OPTIONAL) commonName

TP ID	**SS/MS/PMP/NE/CRT/BV-012**
Reference	Clause 7.6.1.4.2
Selection criteria	
Initial condition	Use of an X.509 Version 3 SS Certificate
Test purpose	Check that the IUT: Has an SS certificate with the following attributes and fields: countryName=<Country of Manufacturer> organizationName=<Company Name> organizationalUnitName=<manufacturing location> commonName=<Serial Number> commonName=<MAC Address> with the SS's MAC address expressed as six pairs of hexadecimal digits separated by colons and the alpha Hex characters (A-F) expressed in uppercase; and that there are no other attributes.

TP ID	**SS/MS/PMP/NE/CRT/BV-013**
Reference	Clause 7.6.1.6
Selection criteria	
Initial condition	Use of an X.509 Version 3 Certificate
Test purpose	Check that the IUT: Omits the issuerUniqueID and subjectUniqueID in fields for both certificate types (SS and Manufacturer's).

TP ID	**SS/MS/PMP/NE/CRT/BV-014**
Reference	Clause 7.6.1.7.1
Selection criteria	
Initial condition	Use of an X.509 Version 3 SS Certificate
Test purpose	Check that the IUT: Does not have critical extensions in the SS certificate.

TP ID	**SS/MS/PMP/NE/CRT/BV-015**
Reference	Clause 7.6.1.7.1
Selection criteria	
Initial condition	Use of an X.509 Version 3 SS Certificate
Test purpose	Check that the IUT: When the KeyUsage noncritical extension is present, turns on the keyAgreement and keyEncipherment bits and turns off the keyCertSign, cRLSign, and all other bits.

TP ID	**SS/MS/PMP/NE/CRT/BV-016**
Reference	Clause 7.6.1.7.2
Selection criteria	
Initial condition	Use of an X.509 Version 3 Manufacturer's Certificate
Test purpose	Check that the IUT: Does not have critical extensions in the Manufacturer's certificate other than the OPTIONAL Basic Constraints extension.

TP ID	**SS/MS/PMP/NE/CRT/BV-017**
Reference	Clause 7.6.1.7.2
Selection criteria	
Initial condition	Use of an X.509 Version 3 Manufacturer's Certificate
Test purpose	Check that the IUT: When the KeyUsage noncritical extension is present, turns on the keyCertSign bit and turns off all other bits.

TP ID	**SS/MS/PMP/NE/CRT/BV-018**
Reference	Clause 7.6.1.8
Selection criteria	
Initial condition	Use of an X.509 Version 3 Certificate
Test purpose	Check that the IUT: Inputs the ASN.1 DER encoded tbsCertificate into the RSA signature function and ASN.1 encodes the result as a bit string in the Certificate's signatureValue field.

TP ID	SS/MS/PMP/NE/CRT/BV-019
Reference	Clause 7.6.2
Selection criteria	
Initial condition	Use of an X.509 Version 3 SS Certificate
Test purpose	Check that the IUT: Stores the Manufacturer-issued SS certificate in SS permanent, write-once memory.

TP ID	SS/MS/PMP/NE/CRT/BV-020
Reference	Clause 7.6.2
Selection criteria	
Initial condition	Use of an X.509 Version 3 SS Certificate
Test purpose	Check that the IUT: Has factory-installed SS certificates if it also has factory-installed RSA private/public key pairs.

TP ID	SS/MS/PMP/NE/CRT/BV-021
Reference	Clause 7.6.2
Selection criteria	
Initial condition	Use of an X.509 Version 3 SS Certificate
Test purpose	Check that the IUT: Relying upon internal algorithms to generate an RSA key pair supports a mechanism for installing a manufacturer-issued SS certificate following key generation.

TP ID	SS/MS/PMP/NE/CRT/BV-022
Reference	Clause 7.6.2
Selection criteria	
Initial condition	Use of an X.509 Version 3 Manufacturer's Certificate
Test purpose	Check that the IUT: Has the Manufacturer CA certificate embedded in the SS's software.

TP ID	SS/MS/PMP/NE/CRT/BV-23
Reference	Clause 7.6.2
Selection criteria	
Initial condition	Use of an X.509 Version 3 Manufacturer's Certificate
Test purpose	Check that the IUT: SS's software include all of the manufacturer's CA certificates issued with the SS certificates and that the specific Manufacturer CA certificate installed by the SS shall be that identifying the issuer of device's SS certificate.

5.3.2.3.1.4   Authorization and Key Exchange (AK)

TP ID	SS/MS/PMP/NE/AK/BV-000
Reference	Clause 7.1.3
Selection criteria	
Initial condition	Negotiating Basic Capabilities is complete.
Test purpose	Check that the IUT: Establishes an exclusive Primary Security Association with the SAID equal to the IUT's Basic CID.

TP ID	SS/MS/PMP/NE/AK/BV-001
Reference	Clause 7.1.5
Selection criteria	
Initial condition	IUT has begun SS authorization.
Test purpose	Check that the IUT: Supports at least one of the Cryptographic Suites in table 376.

TP ID	SS/MS/PMP/NE/AK/BV-002
Reference	Clause 7.2.4.5 1-A
Selection criteria	
Initial condition	Negotiate Basic Capabilities is completed.
Test purpose	Check that the IUT: Transmits a valid Auth Info message followed by a valid Auth Request message.

TP ID	SS/MS/PMP/NE/AK/BV-003
Reference	Clause 7.2.4.5, 3-B
Selection criteria	
Initial condition	Negotiate Basic Capabilities is completed.
Test purpose	The IUT has transmitted a valid Auth Info message followed by a valid Auth Request message. It has then received an Auth Reject message with a failure due to a permanent error condition. Check that the IUT: Disables all forwarding of traffic and responds to management messages.

TP ID	SS/MS/PMP/NE/AK/BV-004
Reference	Clause 7.2.4, table 131
Selection criteria	
Initial condition	Negotiating Basic Capabilities is completed. The IUT has transmitted a valid Auth Request message and started T_AuthWait. The tester has then transmitted an Auth Invalid message.
Test purpose	Check that the IUT: Transmits no message and re-transmits a valid Auth Request after T_AuthWait expiry.

TP ID	SS/MS/PMP/NE/AK/BV-005
Reference	Clause 7.2.4, table 131
Selection criteria	
Initial condition	Basic Capabilities Negotiation is completed. The IUT has transmitted a valid Auth Info message followed by a valid Auth Request message. The tester then transmitted an Auth Reject message not due to a permanent error condition. (The IUT is now in the Auth Reject Wait State.) T_AuthRejectWait is running. The tester then transmits another Auth Invalid message.
Test purpose	Check that the IUT: Transmits no message, does not change T_ AuthRejectWait, waits for T_AuthRejectWait expiry, and then retransmits a valid Auth Info message followed by a valid Auth Request message.

TP ID	SS/MS/PMP/NE/AK/BV-006
Reference	Clause 7.2.4, table 131
Selection criteria	
Initial condition	Basic Capabilities Negotiation is completed. The IUT has transmitted a valid Auth Info message followed by a valid Auth Request message. The tester then transmitted an Auth Reject message not due to a permanent error condition. (The IUT is now in the Auth Reject Wait State.) T_AuthRejectWait is running. The tester then transmits a Permanent Auth Reject message.
Test purpose	Check that the IUT: Transmits no message, does not change T_ AuthRejectWait, waits for T_AuthRejectWait expiry, and then retransmits a valid Auth Info message followed by a valid Auth Request message.

TP ID	SS/MS/PMP/NE/AK/BV-007
Reference	Clause 7.2.4, table 131
Selection criteria	
Initial condition	Basic Capabilities Negotiation is completed. The IUT has transmitted a valid Auth Info message followed by a valid Auth Request message. The tester then transmitted an Auth Reject message not due to a permanent error condition. (The IUT is now in the Auth Reject Wait State.) T_AuthRejectWait is running. The tester then transmits an Auth Reply message.
Test purpose	Check that the IUT: Transmits no message, does not change T_ AuthRejectWait, waits for T_AuthRejectWait expiry, and then retransmits a valid Auth Info message followed by a valid Auth Request message.

TP ID	SS/MS/PMP/NE/AK/BV-008
Reference	Clause 7.2.4, table 131
Selection criteria	
Initial condition	Basic Capabilities Negotiation is completed. The IUT has transmitted a valid Auth Info message followed by a valid Auth Request message. The tester then transmitted an Auth Reject message not due to a permanent error condition. (The IUT is now in the Auth Reject Wait State.) T_AuthRejectWait is running. The tester then transmits an Auth Invalid message.
Test purpose	Check that the IUT: Transmits no message, does not change T_ AuthRejectWait, waits for T_AuthRejectWait expiry, and then retransmits a valid Auth Info message followed by a valid Auth Request message.

TP ID	SS/MS/PMP/NE/AK/BV-009
Reference	Clause 7.2.4, table 131
Selection criteria	
Initial condition	Basic Capabilities Negotiation is completed. The IUT has transmitted a valid Auth Info message followed by a valid Auth Request message. The tester then transmitted an Auth Reject message due to a permanent error condition. (The IUT is now in the Silent state.) The tester then transmitted an Auth Reject.
Test purpose	Check that the IUT: Transmits no message and responds to management messages.

TP ID	SS/MS/PMP/NE/AK/BV-010
Reference	Clause 7.2.4, table 131
Selection criteria	
Initial condition	Basic Capabilities Negotiation is completed. The IUT has transmitted a valid Auth Info message followed by a valid Auth Request message. The tester then transmitted an Auth Reject message due to a permanent error condition. (The IUT is now in the Silent state.) The tester then transmitted a Permanent Auth Reject.
Test purpose	Check that the IUT: Transmits no message and responds to management messages.

TP ID	SS/MS/PMP/NE/AK/BV-011
Reference	Clause 7.2.4, table 131
Selection criteria	
Initial condition	Basic Capabilities Negotiation is completed. The IUT has transmitted a valid Auth Info message followed by a valid Auth Request message. The tester then transmitted an Auth Reject message due to a permanent error condition. (The IUT is now in the Silent state.) The tester then transmitted an Auth Reply.
Test purpose	Check that the IUT: Transmits no message and responds to management messages.

TP ID	SS/MS/PMP/NE/AK/BV-012
Reference	Clause 7.2.4, table 131
Selection criteria	
Initial condition	Basic Capabilities Negotiation is completed. The IUT has transmitted a valid Auth Info message followed by a valid Auth Request message. The tester then transmitted an Auth Reject message due to a permanent error condition. (The IUT is now in the Silent state.) The tester then transmitted an Auth Invalid.
Test purpose	Check that the IUT: Transmits no message and responds to management messages.

TP ID	SS/MS/PMP/NE/AK/BV-013
Reference	Clause 7.2.4, table 131
Selection criteria	
Initial condition	Basic Capabilities Negotiation is in process. Assume that the Authorization FSM is in the start state. During the Basic Capabilities Negotiation, the tester transmits an Auth Reject message.
Test purpose	Check that the IUT: Ignores the Auth Reject message and continues the Basic Capabilities Negotiation.

TP ID	SS/MS/PMP/NE/AK/BV-014
Reference	Clause 7.2.4, table 131
Selection criteria	
Initial condition	Basic Capabilities Negotiation is in process. Assume that the Authorization FSM is in the start state. During the Basic Capabilities Negotiation, the tester transmits a Permanent Auth Reject message.
Test purpose	Check that the IUT: Ignores the Auth Reject message and continues the Basic Capabilities Negotiation.

TP ID	SS/MS/PMP/NE/AK/BV-015
Reference	Clause 7.2.4, table 131
Selection criteria	
Initial condition	Basic Capabilities Negotiation is in process. Assume that the Authorization FSM is in the start state. During the Basic Capabilities Negotiation, the tester transmits an Auth Reply message.
Test purpose	Check that the IUT: Ignores the Auth Reply message and continues the Basic Capabilities Negotiation.

TP ID	SS/MS/PMP/NE/AK/BV-016
Reference	Clause 7.2.4, table 131
Selection criteria	
Initial condition	Basic Capabilities Negotiation is in process. Assume that the Authorization FSM is in the start state. During the Basic Capabilities Negotiation, the tester transmits an Auth Invalid message.
Test purpose	Check that the IUT: Ignores the Auth Invalid message and continues the Basic Capabilities Negotiation.

TP ID	SS/MS/PMP/NE/AK/BV-017
Reference	Clause 7.2.3
Selection criteria	
Initial condition	Negotiating Basic Capabilities is completed. Static services are provisioned for the IUT. The tester has transmitted a static SA Descriptor in the Auth Reply that the SS does not support.
Test purpose	Check that the IUT: Does not initiate any TEK functions or message exchanges because the service is cancelled.

TP ID	SS/MS/PMP/NE/AK/BV-018
Reference	Clause 7.2.5.5 2-A
Selection criteria	
Initial condition	IUT has just become authorized. Only (one SAID for the Basic CID) is established.
Test purpose	Check that the IUT: Transmits a Key Request message for the SAID.

TP ID	SS/MS/PMP/NE/AK/BV-019
Reference	Clauses 7.2.5, 7.2.5.5 2-A
Selection criteria	
Initial condition	IUT has just become authorized. The SAID for the Basic CID and several SAIDs for Static SAs are established.
Test purpose	Check that the IUT: Transmits a separate Key Request message for each of the SAIDs.

TP ID	SS/MS/PMP/NE/AK/BV-020
Reference	Clause 7.2.4.5, 5-B
Selection criteria	IUT is operational.
Initial condition	
Test purpose	Check that the IUT: Repeats the cycle of sending a valid Auth Info message followed by a valid Auth Request message and waiting the default T_AuthWait duration until receiving an Auth Reply message.

TP ID	SS/MS/PMP/NE/AK/BV-021
Reference	Clause 7.2.5.5 6-B
Selection criteria	
Initial condition	IUT has just become authorized. Only (one SAID for the Basic CID) is established. The IUT has transmitted a valid Key Request message for the SAID and started T_OpWait. The tester does not respond.
Test purpose	Check that the IUT: The IUT re-transmits the Key Request message after T_OpWait expires.

TP ID	SS/MS/PMP/NE/AK/BV-022
Reference	Clause 7.2.5.5 6-B
Selection criteria	
Initial condition	IUT has just become authorized. Only (one SAID for the Basic CID) is established. The IUT has transmits a valid Key Request message for the SAID and started T_OpWait. The tester does not respond.
Test purpose	Check that the IUT: The IUT re-transmits the Key Request message and re-starts T-OpWait each time after T_OpWait expires.

TP ID	SS/MS/PMP/NE/AK/BV-023
Reference	Clause 7.2.5.5 9-B
Selection criteria	
Initial condition	The IUT is authorized. The IUT has sent a valid Key Request message. (The IUT is in the Op Wait state). The tester has then transmitted a Key Reject message.
Test purpose	Check that the IUT: Does not send additional Key messages for the SAID in the Key Reject message.

TP ID	SS/MS/PMP/NE/AK/BV-024
Reference	Clause 7.2.5.5 1-B
Selection criteria	
Initial condition	Basic Capabilities Negotiation is completed. The IUT has transmitted an Auth Request message. The tester then transmits an Auth Reply that does not include an SAID that was in the Auth Request.
Test purpose	Check that the IUT: Does not encrypt any MAC DATA PDUs and does not send any Key Request messages for the missing SAID.

5.3.2.3.1.4.1   Timers (TI)

TP ID	SS/MS/PMP/NE/AK/TI-000
Reference	Clauses 7.2.4.3, 7.2.4.5 2-B, 5-E
Selection criteria	
Initial condition	Negotiate Basic Capabilities is completed. The IUT has transmitted a valid Auth Info message followed by a valid Auth Request message. It has then received an Auth Reject message with a failure not due to a permanent error condition.
Test purpose	Check that the IUT: Waits more than the default duration of T_AuthRejectWait, and then retransmits a valid Auth Info message followed by a valid Auth Request message.

5.3.2.3.1.5   Node Registration (NR)

TP ID	SS/MS/PMP/NE/NR/BV-000
Reference	Clauses 6.3.2.3.7, 6.3.9.9
Selection criteria	
Initial condition	IUT is authorized, Register with BS
Test purpose	Check that the IUT: On receipt of a SBC-RSP, sends a REG-REQ with a MAC header containing the HT bit set to 0, the Primary CID, the SS Management Support, the IP Management Mode, the UL CID Support, and the HMAC tuple.

TP ID	SS/MS/PMP/NE/NR/BV-001
Reference	Clauses 6.3.2.3.7, 6.3.9.9
Selection criteria	PIC_managed_SS
Initial condition	IUT is authorized, Register with BS
Test purpose	Check that the IUT: On receipt of a SBC-RSP, sends a REG-REQ with a MAC header containing the HT bit set to 0, the Primary CID, the SS Management Support indicating a secondary management connection, the IP Management Mode, the UL CID Support, and the HMAC tuple.

TP ID	SS/MS/PMP/NE/NR/BV-002
Reference	Clauses 6.3.2.3.7, 6.3.9.9
Selection criteria	
Initial condition	Wait for REG-RSP
Test purpose	Check that the IUT: On receipt of a REG-RSP containing an invalid HMAC tuple, re-sends a REG-REQ containing the UL CID Support and the HMAC tuple.

TP ID	SS/MS/PMP/NE/NR/BV-003
Reference	Clauses 6.3.2.3.7, 6.3.9.9
Selection criteria	PMP operation
Initial condition	IUT is authorized, Register with BS
Test purpose	Check that the IUT: Sends a REG-REQ containing the UL CID Support, the Vendor ID Encoding, the SS Capabilities Encodings, the Convergence Sublayer Capabilities and the HMAC tuple.

TP ID	SS/MS/PMP/NE/NR/BV-004
Reference	Clauses 6.3.2.3.7, 6.3.9.9
Selection criteria	PMP operation AND OFDM PHY
Initial condition	IUT is authorized, Register with BS
Test purpose	Check that the IUT: Sends a REG-REQ containing the UL CID Support, the Vendor ID Encoding, the SS Capabilities Encodings, the Convergence Sublayer Capabilities, the HMAC tuple and the following additional parameter: ArqSupportTLV.

TP ID	SS/MS/PMP/NE/NR/BV-005
Reference	Clause 11.1.5
Selection criteria	PIC_VENDOR_ID
Initial condition	IUT is authorized, Register with BS. The IUT transmits a REG-REQ with a Vendor ID TLV.
Test purpose	Check that: The ID in the Vendor ID TLV is that assigned to the IUT's vendor.

TP ID	SS/MS/PMP/NE/NR/BV-006
Reference	Clause 11.1.6
Selection criteria	PIC_VENDOR_ID
Initial condition	IUT is authorized, Register with BS. The IUT transmits a REG-REQ with a Vendor ID TLV. The TE then transmits a REG-RSP with a Vendor-specific Information TLV. The first TLV inside this TLV is not of Vendor ID type.
Test purpose	Check that the IUT: Discards the Vendor-specific Information TLV.
Note	Requires an Upper Tester.

TP ID	SS/MS/PMP/NE/NR/TI-000
Reference	Clauses 6.3.2.3.7, 6.3.9.9, table 340 "Registration Request Values"
Selection criteria	
Initial condition	Wait for REG-RSP
Test purpose	Check that the IUT: For each expiry of timer T6 and no action from the test equipment, sends a REG-REQ containing the UL CID Support and the HMAC tuple n times.
Parameter values	n ≥ 3

TP ID	SS/MS/PMP/NE/NR/TI-001
Reference	Clauses 6.3.2.3.7, 6.3.9.9, table 340 "Registration Request Values"
Selection criteria	
Initial condition	Wait for REG-RSP
Test purpose	Check that the IUT: For each receipt of a REG-RSP containing an invalid HMAC tuple, sends a REG-REQ containing the UL CID Support and the HMAC tuple n times.
Parameter values	$n \geq 3$

TP ID	SS/MS/PMP/NE/NR/TI-002
Reference	Clauses 6.3.2.3.7, 6.3.9.9, table 340 "Registration Request Values"
Selection criteria	
Initial condition	Wait for REG-RSP
Test purpose	Check that the IUT: On expiry of timer T6 and no action from the test equipment for the nth time, resets and sends a RNG-REQ containing the CID field set to zero in its MAC header.
Parameter values	$n \geq 3$

TP ID	SS/MS/PMP/NE/NR/TI-003
Reference	Clauses 6.3.2.3.7, 6.3.9.9, table 340 "Registration Request Values"
Selection criteria	
Initial condition	Wait for REG-RSP
Test purpose	Check that the IUT: On receipt of a REG-RSP containing an invalid HMAC tuple for the nth. time, resets and sends a RNG-REQ containing the CID field set to zero in its MAC header.
Parameter values	$n \geq 3$

5.3.2.3.1.6   Establish IP Connectivity (IP)

TP ID	SS/MS/PMP/NE/IP/BV-000
Reference	Clauses 6.3.9.10, 11.7.6
Selection criteria	PIC_managed_SS
Initial condition	Wait for REG-RSP
Test purpose	Check that the IUT: On receipt of a REG-RSP, invokes the DHCP mechanisms with the DHCP server on the Secondary Management Connection.

5.3.2.3.1.7   Establish Time of Day (DY)

TP ID	SS/MS/PMP/NE/DY/BV-000
Reference	Clause 6.3.9.11
Selection criteria	PIC_managed_SS
Initial condition	Establish IP Connectivity
Test purpose	Check that the IUT: Invokes the Time Protocol above UDP with the Time Server on the Secondary Management Connection.

5.3.2.3.1.8   Transfer Operation Parameters (TOP)

TP ID	SS/MS/PMP/NE/TOP/BV-000
Reference	Clause 6.3.9.12
Selection criteria	PIC_managed_SS
Initial condition	Initiate TFTP Get protocol
Test purpose	Check that the IUT: Downloads the SS Configuration file at the TFTP server on the Secondary Management Connection.

TP ID	SS/MS/PMP/NE/TOP/BV-001
Reference	Clause 6.3.9.12
Selection criteria	PIC_managed_SS
Initial condition	Inform BS of completion
Test purpose	Check that the IUT: Sends a TFTP-CPLT message with a MAC header containing the HT bit set to 0, the Primary CID, and the HMAC tuple.

TP ID	SS/MS/PMP/NE/TOP/BV-002
Reference	Clause 9.2.1
Selection criteria	PIC_managed_SS
Initial condition	Initiate TFTP Get protocol. The IUT downloads the SS Configuration file at the TFTP server on the Secondary Management Connection. The file contains configuration settings that the IUT cannot interpret.
Test purpose	Check that the IUT: Ignores the configurations settings that cannot be interpreted.

TP ID	SS/MS/PMP/NE/TOP/BV-003
Reference	Clause 9.2.1
Selection criteria	PIC_managed_SS
Initial condition	Initiate TFTP Get protocol. The IUT downloads the SS Configuration file at the TFTP server on the Secondary Management Connection.
Test purpose	Check that the IUT: Supports at a minimum an 8 192 byte configuration file.

TP ID	SS/MS/PMP/NE/TOP/BV-004
Reference	Clauses 9.2.2, 11.2
Selection criteria	PIC_managed_SS
Initial condition	Initiate TFTP Get protocol. The IUT downloads the SS Configuration file at the TFTP server on the Secondary Management Connection.
Test purpose	Check that the IUT: Supports the following Configuration File Settings: SS MIC Configuration Setting TSTP Server Timestamp Software Upgrade Filename Configuration Setting Software Server IP Address Vendor-specific configuration settings

TP ID	SS/MS/PMP/NE/TOP/BV-005
Reference	Clause 9.2.3.1
Selection criteria	PIC_managed_SS
Initial condition	Initiate TFTP Get protocol. The IUT downloads the SS Configuration file at the TFTP server on the Secondary Management Connection. The file contains configuration an incorrect SS MIC configuration setting.
Test purpose	Check that the IUT: Discards the configuration file.

TP ID	SS/MS/PMP/NE/TOP/TI-000
Reference	Clauses 6.3.2.3.28-29, 6.3.9.12, table 340 "TFTP Request Retries"
Selection criteria	PIC_managed_SS
Initial condition	Inform BS of completion
Test purpose	Check that the IUT: For each expiry of timer T26 and no action from the test equipment, sends a TFTP-CPLT message containing the HMAC tuple n times.
Parameter values	n ≥ 16

5.3.2.3.2   Dynamic Services (DS)

5.3.2.3.2.1   Addition (AD)

5.3.2.3.2.1.1   SS-Initiated (SS-INI)

TP ID	SS/MS/PMP/DS/AD/SS-INI/BV-000
Reference	Clauses 6.3.2.3.10, 6.3.14.7.1.1, 6.3.14.9.3, 11.13
Selection criteria	Explicitly including all traffic parameters
Initial condition	IUT is authorized and registered, DSA-Local Begin
Test purpose	Check that the IUT: When it wishes to create an uplink or downlink Service flow, or both, sends a DSA-REQ with a MAC header containing the HT bit set to 0 and the Primary CID, the Transaction ID, the Service Flow Parameters, the Convergence Sublayer Parameters Encodings, and the HMAC Tuple.
Parameter values	Type 24/25 = PIXIT QoSParamSet = PIXIT

TP ID	SS/MS/PMP/DS/AD/SS-INI/BV-001
Reference	Clauses 6.3.2.3.10-12, 6.3.14.7.1.1, 6.3.14.9.3, 11.13
Selection criteria	Explicitly including all traffic parameters
Initial condition	DSA-Local DSA-RSP Pending
Test purpose	Check that the IUT: On receipt of a DSX-RVD and then a DSA-RSP containing the Confirmation Code set to OK/success, sends a DSA-ACK containing the associated Transaction ID, the Confirmation Code set to OK/success and the HMAC tuple.
Parameter values	Type 24/25 = PIXIT QoSParamSet = PIXIT

TP ID	SS/MS/PMP/DS/AD/SS-INI/BV-002
Reference	Clauses 6.3.2.3.10-12, 6.3.14.7.1.1, 6.3.14.9.3, 11.13
Selection criteria	Explicitly including all traffic parameters
Initial condition	DSA-Local DSA-RSP Pending
Test purpose	Check that the IUT: On receipt of a DSX-RVD containing the Confirmation Code set to reject-other, sends a DSA-ACK containing the associated Transaction ID, the Confirmation Code set to OK/success and the HMAC tuple.
Parameter values	Type 24/25 = PIXIT QoSParamSet = PIXIT

TP ID	SS/MS/PMP/DS/AD/SS-INI/BV-003
Reference	Clauses 6.3.2.3.10-12, 6.3.14.7.1.1, 6.3.14.9.3, 11.13
Selection criteria	Explicitly including all traffic parameters
Initial condition	DSA-Local DSA-RSP Pending
Test purpose	Check that the IUT: On receipt of a DSX-RVD and then a DSA-RSP containing the Confirmation Code set to reject-other and the Error Service Flow Parameters, sends a DSA-ACK containing the associated Transaction ID, the Confirmation Code set to OK/success, the associated Service Flow Error Parameters and the HMAC tuple.
Parameter values	Type 24/25 = PIXIT QoSParamSet = PIXIT

TP ID	SS/MS/PMP/DS/AD/SS-INI/BV-004
Reference	Clauses 6.3.2.3.10-12, 6.3.14.7.1.1, 6.3.14.9.3, 11.13
Selection criteria	Explicitly including all traffic parameters
Initial condition	DSA-Local DSA-RSP Pending
Test purpose	Check that the IUT: On receipt of a DSA-RSP containing the Confirmation Code set to OK/success, sends a DSA-ACK containing the associated Transaction ID, the Confirmation Code set to OK/success and the HMAC tuple.
Parameter values	Type 24/25 = PIXIT QoSParamSet = PIXIT

TP ID	SS/MS/PMP/DS/AD/SS-INI/BV-005
Reference	Clauses 6.3.2.3.10-12, 6.3.14.7.1.1, 6.3.14.9.3, 11.13
Selection criteria	Explicitly including all traffic parameters
Initial condition	DSA-Local DSA-RSP Pending
Test purpose	Check that the IUT: On receipt of a DSA-RSP containing the Confirmation Code set to reject-other and the Service Flow Error Parameters, sends a DSA-ACK containing the associated Transaction ID, the Confirmation Code set to OK/success, the associated Service Flow Error Parameters and the HMAC tuple.
Parameter values	Type 24/25 = PIXIT QoSParamSet = PIXIT

TP ID	SS/MS/PMP/DS/AD/SS-INI/BV-006
Reference	Clauses 6.3.2.3.10-12, 6.3.14.7.1.1, 6.3.14.9.3, 11.13
Selection criteria	Explicitly including all traffic parameters
Initial condition	DSA-Local Holding Down
Test purpose	Check that the IUT: On receipt of a DSA-RSP containing the Confirmation Code set to OK/success, sends a DSA-ACK containing the associated Transaction ID, the Confirmation Code set to OK/success and the HMAC tuple.
Parameter values	Type 24/25 = PIXIT QoSParamSet = PIXIT

TP ID	SS/MS/PMP/DS/AD/SS-INI/TI-000
Reference	Figure 107, table 340 "DSx Request Retries"
Selection criteria	Explicitly including all traffic parameters
Initial condition	IUT is authorized and registered, DSA-Local Begin
Test purpose	Check that the IUT: For an IUT initiated DSA procedure, when each time timer T14 expires and no reply is received, re-sends a DSA-REQ n times and stops the initiated procedure.
Parameter values	n defaults to 3. Type 24/25 = PIXIT QoSParamSet = PIXIT

TP ID	SS/MS/PMP/DS/AD/SS-INI/TI-001
Reference	Figure 109, table 340 "DSx Response Retries"
Selection criteria	Explicitly including all traffic parameters
Initial condition	IUT is authorized and registered, DSA-Local Begin
Test purpose	Check that the IUT: For an IUT initiated DSA procedure, when n-1 times no reply is received, at the nth time, before the expiry of timer T10, on receipt of a DSX-RVD and then a DSA-RSP containing the Confirmation Code set to OK/success, sends a DSA-ACK containing the associated Transaction ID, the Confirmation Code set to OK/success and the HMAC tuple.
Parameter values	n defaults to 3. Type 24/25 = PIXIT QoSParamSet = PIXIT

TP ID	SS/MS/PMP/DS/AD/SS-INI/TI-002
Reference	Figure 109, table 340 "DSx Response Retries"
Selection criteria	Explicitly including all traffic parameters
Initial condition	IUT is authorized and registered, DSA-Local Begin
Test purpose	Check that the IUT: For an IUT initiated DSA procedure, when n-1 times no reply is received, at the nth time, before the expiry of timer T10, on receipt of a DSX-RVD and then a DSA-RSP containing the Confirmation Code set to reject-other and the Service Flow Error Parameters, sends a DSA-ACK containing the associated Transaction ID, the Confirmation Code set to OK/success, the associated Service Flow Error Parameters and the HMAC tuple.
Parameter values	n defaults to 3. Type 24/25 = PIXIT QoSParamSet = PIXIT

5.3.2.3.2.1.2   BS-Initiated (BS-INI)

TP ID	SS/MS/PMP/DS/AD/BS-INI/BV-000
Reference	Clauses 6.3.2.3.10-11, 6.3.2.3.28-29, 6.3.9.12, 6.3.14.9.3
Selection criteria	
Initial condition	Wait for TFTP-RSP
Test purpose	Check that the IUT: On receipt of a TFTP-RSP with a valid HMAC tuple and then a DSA-REQ message, sends a DSA-RSP containing the associated Transaction ID, the Confirmation Code set to OK/success and the HMAC tuple.

TP ID	SS/MS/PMP/DS/AD/BS-INI/BV-001
Reference	Clauses 6.3.2.3.28-29, 6.3.9.12
Selection criteria	
Initial condition	Wait for TFTP-RSP
Test purpose	Check that the IUT: On receipt only of a DSA-REQ message, sends a DSA-RSP containing the associated Transaction ID, the Confirmation Code set to OK/success and the HMAC tuple.

TP ID	SS/MS/PMP/DS/AD/BS-INI/BV-002
Reference	Clauses 6.3.2.3.10-11, 6.3.14.7.1.2, 6.3.14.9.3, 11.13
Selection criteria	Explicitly including all traffic parameters
Initial condition	IUT has authorized and registered the test equipment, DSA-Remote Begin
Test purpose	Check that the IUT: On receipt of a DSA-REQ containing the Transaction ID, the Service Flow Parameters, the Convergence Sublayer Parameters Encodings and the HMAC Tuple, sends a DSA-RSP with a MAC header containing the HT bit set to 0 and the associated Primary CID, the associated Transaction ID, the Confirmation Code set to OK/success and the HMAC tuple.
Parameter values	Type 24/25 = PIXIT QoSParamSet = PIXIT

TP ID	SS/MS/PMP/DS/AD/BS-INI/BV-003
Reference	Clauses 6.3.2.3.10-11, 6.3.14.7.1.2, 6.3.14.9.3, 11.13
Selection criteria	Explicitly including all traffic parameters
Initial condition	IUT has authorized and registered the test equipment, DSA-Remote Begin
Test purpose	Check that the IUT: On receipt of a DSA-REQ containing the Service Flow Parameters set to an unsupported value, sends a DSA-RSP containing the associated Transaction ID, the Confirmation Code set to any reject reason, the Service Flow Error Parameters reflecting the unsupported value and the HMAC tuple.
Parameter values	Type 24/25 = PIXIT QoSParamSet = PIXIT

TP ID	SS/MS/PMP/DS/AD/BS-INI/BV-004
Reference	Clauses 6.3.2.3.12, 6.3.14.7.1.2, 6.3.14.9.3, 11.13
Selection criteria	Explicitly including all traffic parameters
Initial condition	DSA-Remote DSA-ACK pending
Test purpose	Check that the IUT: On receipt of a DSA-ACK containing the associated Transaction ID, the Confirmation Code set to OK/success and the HMAC tuple, accepts this message.
Parameter values	Type 24/25 = PIXIT QoSParamSet = PIXIT

TP ID	SS/MS/PMP/DS/AD/BS-INI/BV-005
Reference	Clauses 6.3.2.3.12, 6.3.14.7.1.2, 6.3.14.9.3, 11.13
Selection criteria	Explicitly including all traffic parameters
Initial condition	DSA-Remote DSA-ACK pending
Test purpose	Check that the IUT: On receipt of a DSA-ACK containing the associated Transaction ID, the Confirmation Code set to reject-other and the HMAC tuple, accepts this message.
Parameter values	Type 24/25 = PIXIT QoSParamSet = PIXIT

TP ID	SS/MS/PMP/DS/AD/BS-INI/BV-006
Reference	Clauses 6.3.2.3.12, 6.3.14.7.1.2, 6.3.14.9.3, 11.13
Selection criteria	Explicitly including all traffic parameters
Initial condition	DSA-Remote Holding down
Test purpose	Check that the IUT: On receipt of a DSA-ACK containing the associated Transaction ID, the Confirmation Code set to OK/success and the HMAC tuple, takes no action.
Parameter values	Type 24/25 = PIXIT QoSParamSet = PIXIT

TP ID	SS/MS/PMP/DS/AD/BS-INI/BV-007
Reference	Clauses 6.3.2.3.12, 6.3.14.7.1.2, 6.3.14.9.3, 11.13
Selection criteria	Explicitly including all traffic parameters
Initial condition	DSA-Remote Holding down
Test purpose	Check that the IUT: On receipt of a DSA-ACK containing the associated Transaction ID, the Confirmation Code set to reject-other and the HMAC tuple, takes no action.
Parameter values	Type 24/25 = PIXIT QoSParamSet = PIXIT

TP ID	SS/MS/PMP/DS/AD/BS-INI/TI-000
Reference	Figure 112, table 340 "DSx Request Retries"
Selection criteria	Explicitly including all traffic parameters
Initial condition	DSA-Remote DSA-ACK pending
Test purpose	Check that the IUT: Before expiry of timer T8 and on receipt of a DSA-REQ for n times, sends a DSA-RSP for each DSA-REQ.
Parameter values	n defaults to 3. Type 24/25 = PIXIT QoSParamSet = PIXIT

TP ID	SS/MS/PMP/DS/AD/BS-INI/TI-001
Reference	Figure 112, table 340 "DSx Request Retries"
Selection criteria	Explicitly including all traffic parameters
Initial condition	DSA-Remote DSA-ACK pending
Test purpose	Check that the IUT: Before expiry of timer T8 and on receipt of a DSA-REQ for more than n times, takes no action.
Parameter values	n defaults to 3. Type 24/25 = PIXIT QoSParamSet = PIXIT

TP ID	SS/MS/PMP/DS/AD/BS-INI/TI-002
Reference	Figure 112, table 340 "DSx Response Retries"
Selection criteria	Explicitly including all traffic parameters
Initial condition	DSA-Remote DSA-ACK pending
Test purpose	Check that the IUT: On expiry of timer T8 and on no action from the test equipment, sends for n times the DSP-RSP.
Parameter values	n defaults to 3. Type 24/25 = PIXIT QoSParamSet = PIXIT

5.3.2.3.2.2   Change (CH)

5.3.2.3.2.2.1   SS-Initiated (SS-INI)

TP ID	SS/MS/PMP/DS/CH/SS-INI/BV-000
Reference	Clauses 6.3.2.3.13, 6.3.14.9.4, 11.13
Selection criteria	Explicitly including all traffic parameters
Initial condition	IUT is authorized and registered, DSC-Local Begin
Test purpose	Check that the IUT: When it wishes to delete an uplink or downlink Service flow, or both, sends a DSC-REQ with a MAC header containing the HT bit set to 0 and the Primary CID, the Transaction ID, the Service Flow Parameters, and the HMAC Tuple.
Parameter values	Type 24/25 = PIXIT Bit Rate = PIXIT

TP ID	SS/MS/PMP/DS/CH/SS-INI/BV-001
Reference	Clauses 6.3.2.3.13-15, 6.3.14.9.4, 11.13
Selection criteria	Explicitly including all traffic parameters
Initial condition	DSC-Local DSC-RSP Pending
Test purpose	Check that the IUT: On receipt of a DSX-RVD and then a DSC-RSP containing the Confirmation Code set to OK/success, sends a DSC-ACK containing the associated Transaction ID, the Confirmation Code set to OK/success and the HMAC tuple.
Parameter values	Type 24/25 = PIXIT Bit Rate = PIXIT

TP ID	SS/MS/PMP/DS/CH/SS-INI/BV-002
Reference	Clauses 6.3.2.3.13-15, 6.3.14.9.4, 11.13
Selection criteria	Explicitly including all traffic parameters
Initial condition	DSC-Local DSC-RSP Pending
Test purpose	Check that the IUT: On receipt of a DSX-RVD containing the Confirmation Code set to reject-other, sends a DSC-ACK containing the associated Transaction ID, the Confirmation Code set to OK/success and the HMAC tuple.
Parameter values	Type 24/25 = PIXIT Bit Rate = PIXIT

TP ID	SS/MS/PMP/DS/CH/SS-INI/BV-003
Reference	Clauses 6.3.2.3.13-15, 6.3.14.9.4, 11.13
Selection criteria	Explicitly including all traffic parameters
Initial condition	DSC-Local DSC-RSP Pending
Test purpose	Check that the IUT: On receipt of a DSX-RVD and then a DSC-RSP containing the Confirmation Code set to reject-other and the Error Service Flow Parameters, sends a DSC-ACK containing the associated Transaction ID, the Confirmation Code set to OK/success, the associated Service Flow Error Parameters and the HMAC tuple.
Parameter values	Type 24/25 = PIXIT Bit Rate = PIXIT

TP ID	SS/MS/PMP/DS/CH/SS-INI/BV-004
Reference	Clauses 6.3.2.3.13-15, 6.3.14.9.4, 11.13
Selection criteria	Explicitly including all traffic parameters
Initial condition	DSC-Local DSC-RSP Pending
Test purpose	Check that the IUT: On receipt of a DSC-RSP containing the Confirmation Code set to OK/success, sends a DSC-ACK containing the associated Transaction ID, the Confirmation Code set to OK/success and the HMAC tuple.
Parameter values	Type 24/25 = PIXIT Bit Rate = PIXIT

TP ID	SS/MS/PMP/DS/CH/SS-INI/BV-005
Reference	Clauses 6.3.2.3.13-15, 6.3.14.9.4, 11.13
Selection criteria	Explicitly including all traffic parameters
Initial condition	DSC-Local DSC-RSP Pending
Test purpose	Check that the IUT: On receipt of a DSC-RSP containing the Confirmation Code set to reject-other and the Service Flow Error Parameters, sends a DSC-ACK containing the associated Transaction ID, the Confirmation Code set to OK/success, the associated Service Flow Error Parameters and the HMAC tuple.
Parameter values	Type 24/25 = PIXIT Bit Rate = PIXIT

TP ID	SS/MS/PMP/DS/CH/SS-INI/BV-006
Reference	Clauses 6.3.2.3.13-15, 6.3.14.9.4, 11.13
Selection criteria	Explicitly including all traffic parameters
Initial condition	DSC-Local Holding Down
Test purpose	Check that the IUT: On receipt of a DSC-RSP containing the Confirmation Code set to OK/success, sends a DSC-ACK containing the associated Transaction ID, the Confirmation Code set to OK/success and the HMAC tuple.
Parameter values	Type 24/25 = PIXIT Bit Rate = PIXIT

TP ID	SS/MS/PMP/DS/CH/SS-INI/BV-007
Reference	Clauses 6.3.14.9.4, 11.13
Selection criteria	Explicitly including all traffic parameters
Initial condition	DSC-Local DSC-RSP Pending
Test purpose	Check that the IUT: On receipt of a DSX-RVD, a DSC-RSP containing the Confirmation Code set to OK/success and then a DSC-REQ, respects the priority of the Service Flow, does not send a DSC-ACK (aborting its transaction), instead sends a DSC-RSP containing the associated Transaction ID, the Confirmation Code set to OK/success and the HMAC tuple.
Parameter values	Type 24/25 = PIXIT Bit Rate = PIXIT

TP ID	SS/MS/PMP/DS/CH/SS-INI/BV-008
Reference	Clauses 6.3.14.9.4, 11.13
Selection criteria	Explicitly including all traffic parameters
Initial condition	DSC-Local DSC-RSP Pending
Test purpose	Check that the IUT: On receipt of a DSC-REQ, respects the priority of the Service Flow, does not wait for a DSX-RVD (aborting its transaction), instead sends a DSC-RSP containing the associated Transaction ID, the Confirmation Code set to OK/success and the HMAC tuple.
Parameter values	Type 24/25 = PIXIT Bit Rate = PIXIT

TP ID	SS/MS/PMP/DS/CH/SS-INI/TI-000
Reference	Figure 116, table 340 "DSx Request Retries"
Selection criteria	Explicitly including all traffic parameters
Initial condition	IUT is authorized and registered, DSC-Local Begin
Test purpose	Check that the IUT: For an IUT initiated DSC procedure, when each time timer T14 expires and no reply is received, re-sends a DSC-REQ n times and stops the initiated procedure.
Parameter values	n defaults to 3. Type 24/25 = PIXIT Bit Rate = PIXIT

TP ID	SS/MS/PMP/DS/CH/SS-INI/TI-001
Reference	Figure 118, table 340 "DSx Response Retries"
Selection criteria	Explicitly including all traffic parameters
Initial condition	IUT is authorized and registered, DSC-Local Begin
Test purpose	Check that the IUT: For an IUT initiated DSC procedure, when n-1 times no reply is received, at the nth time, before the expiry of timer T10, on receipt of a DSX-RVD and then a DSC-RSP containing the Confirmation Code set to OK/success, sends a DSC-ACK containing the associated Transaction ID, the Confirmation Code set to OK/success and the HMAC tuple.
Parameter values	n defaults to 3. Type 24/25 = PIXIT Bit Rate = PIXIT

TP ID	SS/MS/PMP/DS/CH/SS-INI/TI-002
Reference	Figure 118, table 340 "DSx Response Retries"
Selection criteria	Explicitly including all traffic parameters
Initial condition	IUT is authorized and registered, DSC-Local Begin
Test purpose	Check that the IUT: For an IUT initiated DSC procedure, when n-1 times no reply is received, at the nth time, before the expiry of timer T10, on receipt of a DSX-RVD and then a DSC-RSP containing the Confirmation Code set to reject-other and the Service Flow Error Parameters, sends a DSC-ACK containing the associated Transaction ID, the Confirmation Code set to OK/success, the associated Service Flow Error Parameters and the HMAC tuple.
Parameter values	n defaults to 3. Type 24/25 = PIXIT Bit Rate = PIXIT

5.3.2.3.2.2.2   BS-Initiated (BS-INI)

TP ID	SS/MS/PMP/DS/CH/BS-INI/BV-000
Reference	Clauses 6.3.2.3.13-14, 6.3.14.7.1.2, 6.3.14.9.4, 11.13
Selection criteria	Explicitly including all traffic parameters
Initial condition	IUT has authorized and registered the test equipment, DSC-Remote Begin
Test purpose	Check that the IUT: On receipt of a DSC-REQ containing the Transaction ID, the Service Flow Parameters and the HMAC Tuple, sends a DSC-RSP with a MAC header containing the HT bit set to 0 and the associated Primary CID, the associated Transaction ID, the Confirmation Code set to OK/success, and the HMAC tuple.
Parameter values	Type 24/25 = PIXIT QoSParamSet = PIXIT

TP ID	SS/MS/PMP/DS/CH/BS-INI/BV-002
Reference	Clauses 6.3.2.3.13-14, 6.3.14.7.1.2, 6.3.14.9.4, 11.13
Selection criteria	Explicitly including all traffic parameters
Initial condition	IUT has authorized and registered the test equipment, DSC-Remote Begin
Test purpose	Check that the IUT: On receipt of a DSC-REQ containing the Service Flow Parameters set to an unsupported value, sends a DSC-RSP containing the associated Transaction ID, the Confirmation Code set to any reject reason, the Service Flow Error Parameters reflecting the unsupported value and the HMAC tuple.
Parameter values	Type 24/25 = PIXIT QoSParamSet = PIXIT

TP ID	SS/MS/PMP/DS/CH/BS-INI/BV-003
Reference	Clauses 6.3.2.3.15, 6.3.14.7.1.2, 6.3.14.9.4, 11.13
Selection criteria	Explicitly including all traffic parameters
Initial condition	DSC-Remote DSC-ACK pending
Test purpose	Check that the IUT: On receipt of a DSC-ACK containing the associated Transaction ID, the Confirmation Code set to OK/success and the HMAC tuple, accepts this message.
Parameter values	Type 24/25 = PIXIT QoSParamSet = PIXIT

TP ID	SS/MS/PMP/DS/CH/BS-INI/BV-004
Reference	Clauses 6.3.2.3.15, 6.3.14.7.1.2, 6.3.14.9.4, 11.13
Selection criteria	Explicitly including all traffic parameters
Initial condition	DSC-Remote DSC-ACK pending
Test purpose	Check that the IUT: On receipt of a DSC-ACK containing the associated Transaction ID, the Confirmation Code set to reject-other and the HMAC tuple, accepts this message.
Parameter values	Type 24/25 = PIXIT QoSParamSet = PIXIT

TP ID	SS/MS/PMP/DS/CH/BS-INI/BV-005
Reference	Clauses 6.3.2.3.15, 6.3.14.7.1.2, 6.3.14.9.4, 11.13
Selection criteria	Explicitly including all traffic parameters
Initial condition	DSC-Remote Holding down
Test purpose	Check that the IUT: On receipt of a DSC-ACK containing the associated Transaction ID, the Confirmation Code set to OK/success and the HMAC tuple, takes no action.
Parameter values	Type 24/25 = PIXIT QoSParamSet = PIXIT

TP ID	SS/MS/PMP/DS/CH/BS-INI/BV-006
Reference	Clauses 6.3.2.3.15, 6.3.14.7.1.2, 6.3.14.9.4, 11.13
Selection criteria	Explicitly including all traffic parameters
Initial condition	DSC-Remote Holding down
Test purpose	Check that the IUT: On receipt of a DSC-ACK containing the associated Transaction ID, the Confirmation Code set to reject-other and the HMAC tuple, takes no action.
Parameter values	Type 24/25 = PIXIT QoSParamSet = PIXIT

TP ID	SS/MS/PMP/DS/CH/BS-INI/BV-007
Reference	Clauses 6.3.14.9.4, 11.13
Selection criteria	Explicitly including all traffic parameters
Initial condition	DSC-Local Begin
Test purpose	Check that the IUT: On receipt of a DSC-REQ containing the Service Flow Parameters with the Service Flow Identifier and a null ActiveQoSParamSet, deactivates the referenced Service Flow.
Parameter values	Type 24/25 = PIXIT

TP ID	SS/MS/PMP/DS/CH/BS-INI/BO-000
Reference	Clause 11.13
Selection criteria	Explicitly including all traffic parameters
Initial condition	DSC-Local Begin
Test purpose	Check that the IUT: On receipt of a DSC-REQ containing the Service Flow Parameters with the Service Flow Identifier and only an AdmitQoSParamSet, deactivates the referenced Service Flow.
Parameter values	Type 24/25 = PIXIT

TP ID	SS/MS/PMP/DS/CH/BS-INI/BO-001
Reference	Clause 11.13
Selection criteria	Explicitly including all traffic parameters
Initial condition	DSC-Local Begin
Test purpose	Check that the IUT: On receipt of a DSC-REQ containing the Service Flow Parameters with the Service Flow Identifier, a null AdmitQoSParamSet and null ActiveQoSParamSet, deadmits the referenced Service Flow.
Parameter values	Type 24/25 = PIXIT

TP ID	SS/MS/PMP/DS/CH/BS-INI/TI-000
Reference	Figure 121, figure 118, table 340 "DSx Request Retries"
Selection criteria	Explicitly including all traffic parameters
Initial condition	DSC-Remote DSC-ACK pending
Test purpose	Check that the IUT: Before expiry of timer T8 and on receipt of a DSC-REQ for n times, sends a DSC-RSP for each DSC-REQ.
Parameter values	n defaults to 3. Type 24/25 = PIXIT QoSParamSet = PIXIT

TP ID	SS/MS/PMP/DS/CH/BS-INI/TI-001
Reference	Figure 121, table 340 "DSx Request Retries"
Selection criteria	Explicitly including all traffic parameters
Initial condition	DSC-Remote DSC-ACK pending
Test purpose	Check that the IUT: Before expiry of timer T8 and on receipt of a DSC-REQ for more than n times, takes no action.
Parameter values	n defaults to 3. Type 24/25 = PIXIT QoSParamSet = PIXIT

TP ID	SS/MS/PMP/DS/CH/BS-INI/TI-002
Reference	Figure 121, table 340 "DSx Response Retries"
Selection criteria	Explicitly including all traffic parameters
Initial condition	DSC-Remote DSC-ACK pending
Test purpose	Check that the IUT: On expiry of timer T8 and on no action from the test equipment, sends for n times the DSP-RSP.
Parameter values	n defaults to 3. Type 24/25 = PIXIT QoSParamSet = PIXIT

5.3.2.3.2.3   Release (RL)

5.3.2.3.2.3.1   SS-Initiated (SS-INI)

TP ID	SS/MS/PMP/DS/RL/SS-INI/BV-000
Reference	Clauses 6.3.2.3.16, 6.3.14.9.5, 11.13
Selection criteria	
Initial condition	IUT is authorized and registered, DSD-Local Begin
Test purpose	Check that the IUT: When it wishes to delete an uplink or downlink Service flow, or both, sends a DSD-REQ with a MAC header containing the HT bit set to 0 and the Primary CID, the Service Flow Identifier, the Transaction ID, and the HMAC Tuple.
Parameter values	Type 24/25 = PIXIT

TP ID	SS/MS/PMP/DS/RL/SS-INI/BV-001
Reference	Clauses 6.3.2.3.16-17, 6.3.14.9.5, 11.13
Selection criteria	
Initial condition	DSD-Local DSD-RSP Pending
Test purpose	Check that the IUT: On receipt of a DSD-RSP containing the Service Flow Identifier, the Transaction ID, the Confirmation Code set to OK/success and the HMAC Tuple, accepts it.
Parameter values	Type 24/25 = PIXIT

TP ID	SS/MS/PMP/DS/RL/SS-INI/BV-002
Reference	Clauses 6.3.2.3.16-17, 6.3.14.9.5, 11.13
Selection criteria	
Initial condition	DSD-Local Holding Down
Test purpose	Check that the IUT: On receipt of a DSD-RSP containing the Confirmation Code set to OK/success, accepts it.
Parameter values	Type 24/25 = PIXIT

TP ID	SS/MS/PMP/DS/RL/SS-INI/TI-000
Reference	Figure 125, table 340 "DSx Request Retries"
Selection criteria	
Initial condition	IUT is authorized and registered, DSD-Local Begin
Test purpose	Check that the IUT: For an IUT initiated DSD procedure, when each time timer T7 expires and no reply is received, re-sends a DSD-REQ n times and stops the initiated procedure.
Parameter values	n defaults to 3. Type 24/25 = PIXIT

5.3.2.3.2.3.2   BS-Initiated (BS-INI)

TP ID	SS/MS/PMP/DS/RL/BS-INI/BV-000
Reference	Clauses 6.3.2.3.16-17, 6.3.14.9.5, 11.13
Selection criteria	
Initial condition	IUT has authorized and registered the test equipment, DSD-Remote Begin
Test purpose	Check that the IUT: On receipt of a DSD-REQ containing the Service Flow Identifier, the Transaction ID and the HMAC Tuple, sends a DSD-RSP with a MAC header containing the HT bit set to 0 and the associated Primary CID, the associated Service Flow Identifier, the associated Transaction ID, the Confirmation Code set to OK/success, and the HMAC tuple.
Parameter values	Type 24/25 = PIXIT

5.3.2.3.2.4   Periodic Ranging (PR)

TP ID	SS/MS/PMP/DS/PR/BV-000
Reference	Clauses 6.3.2.3.5-6, 6.3.10
Selection criteria	
Initial condition	Operational
Test purpose	Check that the IUT: Sends a RNG-REQ with a MAC header containing the HT bit set to 0 and the Basic CID, the downlink Channel ID, the Pending Until Complete, the Requested Downlink Burst Profile, the SS MAC Address, and the Ranging Anomalies.

TP ID	SS/MS/PMP/DS/PR/BV-001
Reference	Clauses 6.3.2.3.5-6, 6.3.10
Selection criteria	
Initial condition	Operational
Test purpose	Check that the IUT: On receipt of a RNG-RSP, sends a RNG-REQ within the next T4 s.

TP ID	SS/MS/PMP/DS/PR/BV-002
Reference	Clauses 6.3.2.3.5-6, 6.3.10
Selection criteria	
Initial condition	Operational
Test purpose	Check that the IUT: On receipt of a RNG-RSP containing the Ranging Status set to 2, reinitializes its MAC layer and sends a RNG-REQ with a MAC header containing the HT bit set to 0 and the CID field set to zero (Initial Ranging).

TP ID	SS/MS/PMP/DS/PR/BV-003
Reference	Clauses 6.3.2.3.5-6, 6.3.10
Selection criteria	
Initial condition	Operational
Test purpose	Check that the IUT: On receipt of a RNG-RSP containing the Ranging Status set to 4, reinitializes its MAC layer and sends a RNG-REQ with a MAC header containing the HT bit set to 0 and the CID field set to zero (Initial Ranging).

TP ID	SS/MS/PMP/DS/PR/BV-004
Reference	Clauses 6.3.2.3.5-6, 6.3.10
Selection criteria	
Initial condition	Operational
Test purpose	Check that the IUT: Without receiving a Periodic Ranging opportunity and on expiry of timer T4, reinitializes its MAC layer and sends a RNG-REQ with a MAC header containing the HT bit set to 0 and the CID field set to zero (Initial Ranging).

TP ID	SS/MS/PMP/DS/PR/TI-000
Reference	Clauses 6.3.2.3.5-6, 6.3.10, table 340 "Invited Ranging Retries"
Selection criteria	
Initial condition	Operational
Test purpose	Check that the IUT: Having sent a RNG-REQ, and on expiry of timer T3 and no action from the test equipment, resends a RNG-REQ n times.
Parameter values	n ≥ 16 assuming that the "Invited Ranging Retries" item is correct. Clarification requested.

5.3.2.3.3   Adaptive Antenna Support (AA)

TP ID	SS/MS/PMP/AA/BV-000
Reference	Clause 6.3.7.6.4
Selection criteria	PIC_AAS
Initial condition	IUT is operating. The TE transmits with enough power so that the IUT can decode DL-MAP and DCD messages.
Test purpose	Check that the IUT: Conducts the same network entry process as that for a non-AAS SS.

TP ID	SS/MS/PMP/AA/BV-001
Reference	Clause 6.3.7.6.4
Selection criteria	PIC_AAS
Initial condition	IUT is operating and synchronized to the downlink. The TE transmits un-decodable DL-MAP and DCD messages.
Test purpose	Check that the IUT: Attempts initial ranging on the AAS-alert-slots using all available contention slots.

TP ID	SS/MS/PMP/AA/BV-002
Reference	Clause 6.3.7.6.4
Selection criteria	PIC_AAS
Initial condition	IUT is operating and synchronized to the downlink. The TE transmits un-decodable DL-MAP and DCD messages. The IUT then Attempts initial ranging on the AAS-alert-slots using all available contention slots. The TE then transmits decodable private DL-MAP and private DCD messages.
Test purpose	Check that the IUT: Continues the same network entry process as that for a non-AAS SS.

TP ID	SS/MS/PMP/AA/BV-003
Reference	Clauses 6.3.7.6.4, 6.3.8
Selection criteria	PIC_AAS
Initial condition	IUT is operating and synchronized to the downlink. The TE transmits un-decodable DL-MAP and DCD messages. The IUT then Attempts initial ranging on the AAS-alert-slots using all available contention slots. The TE does not respond with private DL-MAP and private DCD messages.
Test purpose	Check that the IUT: Alerts the TE of its presence in a following frame, such frame within the limits of the same exponential backoff algorithm used for initial ranging by non-AAS SS.

TP ID	SS/MS/PMP/AA/BV-004
Reference	Clause 6.3.7.6.6
Selection criteria	PIC_AAS
Initial condition	The IUT is operational. The TE does not broadcast Contention-based bandwidth opportunities.
Test purpose	Check that the IUT: Transmits a RNG-REQ message with AAS Broadcast Capability field set to 0x01 (SS cannot receive broadcast messages).

TP ID	SS/MS/PMP/AA/BV-005
Reference	Clause 6.3.7.6.6
Selection criteria	PIC_AAS
Initial condition	The IUT is operational. The TE broadcasts Contention-based bandwidth opportunities.
Test purpose	Check that the IUT: Transmits a RNG-REQ message with AAS Broadcast Capability field set to 0x00 (SS can receive broadcast messages).

5.3.2.3.4   Channel Descriptors (CD)

TP ID	SS/MS/PMP/CD/BV-000
Reference	Clause 6.3.11, table 121
Selection criteria	
Initial condition	IUT is operating and transmitting data using Configuration Change Count = i. The TE transmits UCD changing the uplink channel descriptor with a Configuration Change Count = (i + 1 MOD 256).
Test purpose	Check that the IUT: Transmits data using the burst profiles defined in the UCD with Configuration Change Count = i.

TP ID	SS/MS/PMP/CD/BV-001
Reference	Clause 6.3.11, table 121
Selection criteria	
Initial condition	IUT is operating and transmitting data using Configuration Change Count = i. The TE transmits UCD changing the uplink channel descriptor with a Configuration Change Count = (i + 1 MOD 256). The IUT then transmits data using the burst profiles defined in the UCD with Configuration Change Count = i. The TE transmits another UCD changing the uplink channel descriptor with a Configuration Change Count = (i + 1 MOD 256).
Test purpose	Check that the IUT: Transmits data using the burst profiles defined in the UCD with Configuration Change Count = i.

TP ID	SS/MS/PMP/CD/BV-002
Reference	Clause 6.3.11, table 121
Selection criteria	
Initial condition	IUT is operating and transmitting data using Configuration Change Count = i. The TE transmits UCD changing the uplink channel descriptor with a Configuration Change Count = (i + 1 MOD 256). The IUT then transmits data using the burst profiles defined in the UCD with Configuration Change Count = i. The TE transmits another UCD changing the uplink channel descriptor with a Configuration Change Count = (i + 1 MOD 256). The IUT continues to transmit the data using the burst profiles defined in the UCD with Configuration Change Count = i. The TE then transmits an UL-MAP with the UCD count = i.
Test purpose	Check that the IUT: Transmits data using the burst profiles defined in the UCD with Configuration Change Count = i.

TP ID	SS/MS/PMP/CD/BV-003
Reference	Clause 6.3.11, table 121
Selection criteria	
Initial condition	IUT is operating and transmitting data using Configuration Change Count = i. The TE transmits UCD changing the uplink channel descriptor with a Configuration Change Count = (i + 1 MOD 256). The IUT then transmits data using the burst profiles defined in the UCD with Configuration Change Count = i. The TE transmits another UCD changing the uplink channel descriptor with a Configuration Change Count = (i + 1 MOD 256). The IUT continues to transmit the data using the burst profiles defined in the UCD with Configuration Change Count = i. The TE then transmits an UL-MAP with the UCD count = i. The IUT continues to transmits data using the burst profiles defined in the UCD with Configuration Change Count = i. The TE then transmits a UL-MAP message with UCD Count = (i + 1 MOD 256).
Test purpose	Check that the IUT: Transmits data using the burst profiles defined in the UCD with Configuration Change Count = (i + 1 MOD 256).

TP ID	SS/MS/PMP/CD/BV-004
Reference	Clause 6.3.11, table 122
Selection criteria	
Initial condition	IUT is operating and receiving downlink data Configuration Change Count = i. The TE transmits a DCD message with Configuration Change Count = (i + 1 MOD 256) followed by DL-MAP messages with DCD Count = I and data with Configuration Change Count = i.
Test purpose	Check that the IUT: Continues to process the downlink data.

TP ID	SS/MS/PMP/CD/BV-005
Reference	Clause 6.3.11, table 122
Selection criteria	
Initial condition	IUT is operating and receiving downlink data Configuration Change Count = i. The TE transmits a DCD message with Configuration Change Count = (i + 1 MOD 256) followed by DL-MAP messages with DCD Count = I and data with Configuration Change Count = i. The IUT continues to process the downlink data. The TE transmits another DCD message with Configuration Change Count = (i + 1 MOD 256) followed by DL-MAP messages with DCD Count = i and data with Configuration Change Count = i.
Test purpose	Check that the IUT: Continues to process the downlink data.

TP ID	SS/MS/PMP/CD/BV-006
Reference	Clause 6.3.11, table 122
Selection criteria	
Initial condition	IUT is operating and receiving downlink data Configuration Change Count = i. The TE transmits a DCD message with Configuration Change Count = (i + 1 MOD 256) followed by DL-MAP messages with DCD Count = I and data with Configuration Change Count = i. The IUT continues to process the downlink data. The TE transmits another DCD message with Configuration Change Count = (i + 1 MOD 256) followed by DL-MAP messages with DCD Count = i and data with Configuration Change Count = i. The IUT continues to process the downlink data. The TE then transmits a DL-MAP message with DCD Count = (i + 1 MOD 256) and data with Configuration Change Count = (i + 1 MOD 256).
Test purpose	Check that the IUT: Process the downlink data with burst profiles associated with the new channel descriptor.

5.3.2.3.5   Clock Comparison (CLK)

TP ID	SS/MS/PMP/CLK/BV-000
Reference	Clause 6.3.2.3.25
Selection criteria	PIC_SS_reconstruct_clock
Initial condition	The IUT is operational. The TE beacons the CLK-CMP message every 50 ms.
Test purpose	Check that the IUT: Reconstructs clock signals DS1 and DS3 according to the information in the CLK-CMP message.

5.3.2.3.6   Contention Resolution (CR)

TP ID	SS/MS/MP/CR/BV-000
Reference	Clause 6.3.6.1
Selection criteria	
Initial condition	The IUT is operational. The TE reduces the IUT's allocated bandwidth to the point that the IUT needs uplink bandwidth allocation.
Test purpose	Check that the IUT: Transmits during the Request IE interval or in any Data Grant Burst Type IE a bandwidth request as either a bandwidth request header or as a Piggyback Request on a grant management subheader.

TP ID	SS/MS/MP/CR/BV-001
Reference	Clause 6.3.6.1
Selection criteria	
Initial condition	The IUT is operational. The TE reduces the IUT's allocated bandwidth to the point that the IUT needs uplink bandwidth allocation.
Test purpose	Check that the IUT: Periodically uses aggregate Bandwidth Requests.

TP ID	SS/MS/MP/CR/BV-002
Reference	Clause 6.3.8
Selection criteria	
Initial condition	The IUT is operational. The TE reduces the IUT's allocated bandwidth to the point that the IUT needs uplink bandwidth allocation and transmits Request Intervals in the UL-MAP.
Test purpose	Check that the IUT: Randomly defers the number of contention transmission opportunities before transmitting the Bandwidth Request.

TP ID	SS/MS/MP/CR/BV-003
Reference	Clause 6.3.8
Selection criteria	
Initial condition	The IUT is operational. The TE reduces the IUT's allocated bandwidth to the point that the IUT needs uplink bandwidth allocation and transmits Request Intervals in the UL-MAP. The IUT transmits the Bandwidth Request. The TE then transmits a Data Grant Burst Type IE granting the request in its entirety.
Test purpose	Check that the IUT: Either uses the Data Grant to transmit the data or Does nothing. In either case, the IUT does not make an additional Bandwidth Request.

TP ID	SS/MS/MP/CR/BV-004
Reference	Clause 6.3.8
Selection criteria	
Initial condition	The IUT is operational. The TE reduces the IUT's allocated bandwidth to the point that the IUT needs uplink bandwidth allocation and transmits Request Intervals in the UL-MAP. The IUT transmits the Bandwidth Request and starts T16. The TE does not transmit a Data Grant Burst Type.
Test purpose	Check that the IUT: Retransmits the Bandwidth Request placed randomly in the Request Intervals in the UL-MAP. The average backoff is twice as much as the average backoff for the initial bandwidth request.

TP ID	SS/MS/MP/CR/BV-005
Reference	Clause 6.3.8
Selection criteria	
Initial condition	The IUT is operational. The TE reduces the IUT's allocated bandwidth to the point that the IUT needs uplink bandwidth allocation and transmits Request Intervals in the UL-MAP. The IUT transmits the Bandwidth Request and starts T16. The TE does never transmit a Data Grant Burst Type.
Test purpose	Check that the IUT: Retransmits the Bandwidth Request placed randomly in the Request Intervals in the UL-MAP for PXT_contention_retries. (The average backoff is double the average backoff for the previous bandwidth request up to the maximum backoff window.) The IUT then no longer requests the bandwidth.
Note	PXT_contention_retries

TP ID	SS/MS/MP/CR/BV-006
Reference	Clause 6.3.8
Selection criteria	
Initial condition	The IUT is operational. The IUT is in contention and deferring to transmit a Bandwidth Request for the CID. The TE transmits a unicast Request IE.
Test purpose	Check that the IUT: Transmits using the opportunity in the unicast Request IE and does not continue Contention Resolution by transmitting Bandwidth Requests.

TP ID	SS/MS/MP/CR/BV-007
Reference	Clause 6.3.8
Selection criteria	
Initial condition	The IUT is operational. The IUT is in contention and deferring to transmit a Bandwidth Request for the CID. The TE transmits a Data Grant Burst Type IE.
Test purpose	Check that the IUT: Transmits using the opportunity in the unicast Request IE and does not continue Contention Resolution by transmitting Bandwidth Requests.

5.3.2.3.7   DL Burst Profile Management (PM)

TP ID	SS/MS/PMP/PM/BV-000
Reference	Clause 6.3.10.1, table 360 (row 2)
Selection criteria	
Initial condition	IUT is operational. The TE transmits at a CINR below the allowed operational range and grants an allocation to the IUT's Basic CID.
Test purpose	Check that the IUT: Transmits a DBPC-REQ using the Basic CID for a more robust profile.

TP ID	SS/MS/PMP/PM/BV-001
Reference	Clause 6.3.10.1, table 360 (row 3)
Selection criteria	
Initial condition	IUT is operational. The TE transmits at a CINR above the allowed operational range and grants an allocation to the IUT's Basic CID.
Test purpose	Check that the IUT: Transmits a DBPC-REQ using the Basic CID for a less robust profile.

TP ID	SS/MS/PMP/PM/BV-002
Reference	Clause 6.3.10.1, figure 80, table 360 (row 2)
Selection criteria	
Initial condition	IUT is operational. The TE transmits at a CINR below the allowed operational range and grants an allocation to the IUT's Basic CID. The IUT transmits a DBPC-REQ using the Basic CID for a more robust burst profile. The TE continues transmitting with the weaker profile.
Test purpose	Check that the IUT: Continues monitoring the DL data on the weaker profile.

TP ID	SS/MS/PMP/PM/BV-003
Reference	Clause 6.3.10.1, figure 80, table 360 (row 2)
Selection criteria	
Initial condition	IUT is operational. The TE transmits at a CINR below the allowed operational range and grants an allocation to the IUT's Basic CID. The IUT transmits a DBPC-REQ using the Basic CID for a more robust burst profile. The TE starts transmitting with the stronger profile and does not transmit a DBPC-RSP accepting the request.
Test purpose	Check that the IUT: Monitors the DL data on the stronger profile.

TP ID	SS/MS/PMP/PM/BV-004
Reference	Clause 6.3.10.1, figure 80, table 360 (row 2)
Selection criteria	
Initial condition	IUT is operational. The TE transmits at a CINR below the allowed operational range and grants an allocation to the IUT's Basic CID. The IUT transmits a DBPC-REQ using the Basic CID for a more robust burst profile. The TE continues transmitting with the weaker profile and then transmits a DBPC-RSP accepting the request, but continues transmitting with the weaker profile.
Test purpose	Check that the IUT: Stops monitoring the DL data on the weaker profile after receiving the DBPC-RSP.

TP ID	SS/MS/PMP/PM/BV-005
Reference	Clause 6.3.10.1, figure 80, table 360 (Row 3)
Selection criteria	
Initial condition	IUT is operational. The TE transmits at a CINR above the allowed operational range and grants an allocation to the IUT's Basic CID. The IUT transmits a DBPC-REQ using the Basic CID for a less robust burst profile. The TE stops transmitting with the stronger profile and then transmits a DBPC-RSP accepting the request, and then continues transmitting but with the weaker profile.
Test purpose	Check that the IUT: Monitors the DL data on the weaker profile after receiving the DBPC-RSP.

TP ID	SS/MS/PMP/PM/BV-006
Reference	Clause 6.3.10.1, figure 80, table 360 (Row 3)
Selection criteria	
Initial condition	IUT is operational. The TE transmits at a CINR above the allowed operational range and grants an allocation to the IUT's Basic CID. The IUT transmits a DBPC-REQ using the Basic CID for a less robust burst profile. The TE stops transmitting with the stronger profile and starts transmitting with the weaker profile.
Test purpose	Check that the IUT: Monitors the DL data on the weaker profile.

TP ID	SS/MS/PMP/PM/BV-007
Reference	Clause 6.3.10.1, table 360 (Row 2)
Selection criteria	
Initial condition	IUT is operational. The TE transmits at a CINR below the allowed operational range and no allocation grant is available on the IUT's Basic CID.
Test purpose	Check that the IUT: Transmits a RNG-REQ in an Initial Ranging interval for a more robust profile.

TP ID	SS/MS/PMP/PM/BV-008
Reference	Clause 6.3.10.1, figure 80, table 360 (Row 2)
Selection criteria	
Initial condition	IUT is operational. The TE transmits at a CINR below the allowed operational range and does not grant an allocation to the IUT's Basic CID. The IUT transmits a RNG-REQ in the Initial Ranging interval for a more robust burst profile. The TE continues transmitting with the weaker profile.
Test purpose	Check that the IUT: Continues monitoring the DL data on the weaker profile.

TP ID	SS/MS/PMP/PM/BV-009
Reference	Clause 6.3.10.1, figure 80, table 360 (Row 2)
Selection criteria	
Initial condition	IUT is operational. The TE transmits at a CINR below the allowed operational range and does not grant an allocation to the IUT's Basic CID. The IUT transmits a RNG-REQ in the Initial Ranging interval for a more robust burst profile. The TE starts transmitting with the stronger profile and does not transmit RNG-RSP accepting the request.
Test purpose	Check that the IUT: Monitors the DL data on the stronger profile.

TP ID	SS/MS/PMP/PM/BV-010
Reference	Clause 6.3.10.1, figure 80, table 360 (Row 2)
Selection criteria	
Initial condition	IUT is operational. The TE transmits at a CINR below the allowed operational range and does not grant an allocation to the IUT's Basic CID. The IUT transmits a RNG-REQ in the Initial Ranging interval for a more robust burst profile. The TE continues transmitting with the weaker profile and then transmits a RNG-RSP accepting the request, but continues transmitting with the weaker profile.
Test purpose	Check that the IUT: Stops monitoring the DL data on the weaker profile after receiving the RNG-RSP.

5.3.2.3.8   Deregistration (DR)

TP ID	SS/MS/PMP/DR/BV-000
Reference	Clause 6.3.2.3.26
Selection criteria	
Initial condition	The IUT is operational and can access two data channels. The TE transmits a DREG-CMD with an action code of 0x00.
Test purpose	Check that the IUT: Leaves the current channel and accesses the other channel.

TP ID	SS/MS/PMP/DR/BV-001
Reference	Clause 6.3.2.3.26
Selection criteria	
Initial condition	The IUT is operational and can access two data channels. The TE transmits a DREG-CMD with an action code of 0x01.
Test purpose	Check that the IUT: Listens on the current channel and does not transmit.

TP ID	SS/MS/PMP/DR/BV-002
Reference	Clause 6.3.2.3.26
Selection criteria	
Initial condition	The IUT is operational and can access two data channels. The TE transmits a DREG-CMD with an action code of 0x01. The IUT then listens on the current channel and does not transmit. The TE then transmits a RES-CMD message.
Test purpose	Check that the IUT: Resumes transmission.

TP ID	SS/MS/PMP/DR/BV-003
Reference	Clause 6.3.2.3.26
Selection criteria	
Initial condition	The IUT is operational and can access two data channels. The TE transmits a DREG-CMD with an action code of 0x01. The IUT then listens on the current channel and does not transmit. The TE then transmits a DREG-CMD message with Action Code = 0x00.
Test purpose	Check that the IUT: Resumes transmission.

TP ID	SS/MS/PMP/DR/BV-004
Reference	Clauses 6.3.2.3.26, 11.7.6
Selection criteria	PIC_managed_SS
Initial condition	The IUT is operational and can access two data channels. The TE transmits a DREG-CMD with an action code of 0x02.
Test purpose	Check that the IUT: Listens on the current channel and only transmits on the Basic and Primary Management Connections. If PIC_managed_SS is TRUE, the IUT also transmits on the Secondary Management Connection.

TP ID	SS/MS/PMP/DR/BV-005
Reference	Clauses 6.3.2.3.26, 11.7.6
Selection criteria	PIC_managed_SS
Initial condition	The IUT is operational and can access two data channels. The TE transmits a DREG-CMD with an action code of 0x02. The IUT then listens on the current channel and only transmits on the Basic and Primary Management Connections. If PIC_managed_SS is TRUE, the IUT also transmits on the Secondary Management Connection. The TE then transmits a DREG-CMD with an action code of 0x03.
Test purpose	Check that the IUT: Returns to normal operation and transmits on any of its active connections.

5.3.2.3.9   Encryption (EN)

5.3.2.3.9.1   Dynamic Service Addition (AD)

TP ID	SS/MS/PMP/EN/AD/BV-000
Reference	Clause 7.1.4
Selection criteria	
Initial condition	IUT is operational and adding a Dynamic Service (DSA) for each of several data transport connections.
Test purpose	Check that the IUT: Maps all transport connections to an existing SA.

TP ID	SS/MS/PMP/EN/AD/BV-001
Reference	Clause 7.1.4
Selection criteria	
Initial condition	IUT is operational and adding a Dynamic Service (DSA) for each of several multicast data transport connections.
Test purpose	Check that the IUT: Maps the multicast transport connections to any Static or Dynamic SA.

5.3.2.3.10   Multicast (MC)

TP ID	SS/MS/PMP/MC/BV-000
Reference	Clause 6.3.12, figure 91
Selection criteria	
Initial condition	IUT is operational. The TE transmits an MCA-REQ message with Assignment field set to 0x01 (Join Multicast Group).
Test purpose	Check that the IUT: Transmits an MCA-RSP message.

TP ID	SS/MS/PMP/MC/BV-001
Reference	Clause 6.3.12, figure 91
Selection criteria	
Initial condition	IUT is operational. The TE transmits an MCA-REQ message with Assignment field set to 0x01 (Join Multicast Group). The IUT then transmits an MCA-RSP message with the Confirmation Code set to 0x00 (Successful). The TE then grants opportunities for the multicast CID in the MCA-REQ message.
Test purpose	Check that the IUT: Transmits data on the multicast CID.

TP ID	SS/MS/PMP/MC/BV-002
Reference	Clause 6.3.12, figure 91
Selection criteria	
Initial condition	IUT is operational. The TE transmits an MCA-REQ message with Assignment field set to 0x01 (Join Multicast Group). The IUT then transmits an MCA-RSP message with the Confirmation Code set to 0xFF (Unsuccessful). The TE then grants opportunities for the multicast CID in the MCA-REQ message.
Test purpose	Check that the IUT: Transmits no data on the multicast CID.

TP ID	SS/MS/PMP/MC/BV-003
Reference	Clause 6.3.12, figure 91
Selection criteria	
Initial condition	IUT is operational. The TE transmits an MCA-REQ message with Assignment field set to 0x01 (Join Multicast Group). The IUT then transmits an MCA-RSP message with the Confirmation Code set to 0x00 (Successful). The IUT is transmitting data on the multicast CID. The TE then transmits a MCA-REQ message with the Assignment field set to 0x00 (Leave Multicast Group).
Test purpose	Check that the IUT: Transmits an MCA-RSP message.

TP ID	SS/MS/PMP/MC/BV-004
Reference	Clause 6.3.12, figure 91
Selection criteria	
Initial condition	IUT is operational. The TE transmits an MCA-REQ message with Assignment field set to 0x01 (Join Multicast Group). The IUT then transmits an MCA-RSP message with the Confirmation Code set to 0x00 (Successful). The IUT is transmitting data on the multicast CID. The TE then transmits a MCA-REQ message with the Assignment field set to 0x00 (Leave Multicast Group). The IUT transmits an MCA-RSP message with the Confirmation Code set to 0x00 (OK). The TE transmits transmission opportunity grants for the Multicast CID in the MCA-REQ message.
Test purpose	Check that the IUT: Does not transmit on the Multicast CID.

TP ID	**SS/MS/PMP/MC/BV-005**
Reference	Clause 6.3.12, figure 91
Selection criteria	
Initial condition	IUT is operational. The TE transmits an MCA-REQ message with Assignment field set to 0x01 (Join Multicast Group). The IUT then transmits an MCA-RSP message with the Confirmation Code set to 0x00 (Successful). The IUT is transmitting data on the multicast CID. The TE then transmits a MCA-REQ message with the Assignment field set to 0x00 (Leave Multicast Group). The IUT transmits an MCA-RSP message with the Confirmation Code set to 0xF0 (reject). The TE transmits transmission opportunity grants for the Multicast CID in the MCA-REQ message.
Test purpose	Check that the IUT: Continues to transmit on the Multicast CID.

5.3.2.3.11   PHY Layer Support (PHY)

TP ID	**SS/MS/PMP/PHY/BV-000**
Reference	Clause 6.3.7.4.1
Selection criteria	
Initial condition	The IUT is operating. The IUT transmits a periodic RNG-REQ message. The TE transmits a RNG-RSP message with different uplink Timing Adjustments.
Test purpose	Check that the IUT: Changes the uplink timing according to the Timing Adjustments in the RNG-RSP message.

TP ID	**SS/MS/PMP/PHY/BV-001**
Reference	Clause 6.3.7.4.3.1
Selection criteria	
Initial condition	The IUT is operating and requires bandwidth. The TE transmits a bandwidth Request IE on the broadcast CID.
Test purpose	Check that the IUT: Transmits a contention request for bandwidth using the contention algorithm.

TP ID	**SS/MS/PMP/PHY/BV-002**
Reference	Clause 6.3.7.4.3.1
Selection criteria	
Initial condition	The IUT is operating and requires bandwidth for a connection. The TE transmits a bandwidth Request IE for the connection's CID.
Test purpose	Check that the IUT: Transmits a valid bandwidth request using the MAC Bandwidth Request Header on the connection.

TP ID	**SS/MS/PMP/PHY/BV-003**
Reference	Clause 6.3.7.4.3.2
Selection criteria	
Initial condition	IUT is ranging. The TE transmits an Initial Ranging IE in the UL-MAP.
Test purpose	Check that the IUT: Transmits a valid RNG-REQ message.

TP ID	**SS/MS/PMP/PHY/BV-004**
Reference	Clause 6.3.7.4.3.5
Selection criteria	
Initial condition	IUT is operational. The TE transmits a Gap IE in the UL-MAP.
Test purpose	Check that the IUT: Does not transmit during the gap indicated in the IE.

5.3.2.3.12   Polling (PO)

TP ID	SS/MS/PMP/PO/BV-000
Reference	Clauses 6.3.6.3, 6.3.7.4
Selection criteria	Unicast polling
Initial condition	IUT is authorized and registered
Test purpose	Check that the IUT: When it wishes to request bandwidth, on receipt of a unicast UL-MAP containing the Basic CID and indicating an uplink interval with the Request IE, sends a Bandwidth Request Header containing the HT bit set to 1.

TP ID	SS/MS/PMP/PO/BV-001
Reference	Clauses 6.3.6.3, 6.3.7.4
Selection criteria	Unicast polling
Initial condition	IUT is authorized and registered
Test purpose	Check that the IUT: When it does not wish to request bandwidth, on receipt of a broadcast UL-MAP containing the Basic CID and indicating an uplink interval with the Request IE, sends stuff bytes (0xFF) during the indicated interval using the associated burst profile.

TP ID	SS/MS/PMP/PO/BV-002
Reference	Clauses 6.3.6.3, 6.3.7.4
Selection criteria	Unicast polling + Normal request
Initial condition	IUT is authorized and registered
Test purpose	Check that the IUT: When it wishes to request bandwidth, on receipt of a unicast UL-MAP containing the Basic CID and indicating an uplink interval with the Request IE, sends a Bandwidth Request Header during the indicated interval containing the individual CID and using the associated Request IE burst profile.

TP ID	SS/MS/PMP/PO/BV-003
Reference	Clauses 6.3.6.3, 6.3.7.4
Selection criteria	Unicast polling + Normal request
Initial condition	IUT is authorized and registered
Test purpose	Check that the IUT: When it wishes to request bandwidth, on receipt of a unicast UL-MAP containing the Basic CID and indicating an uplink interval with the Data Grant Burst Type IE, sends a Bandwidth Request Header during the indicated interval containing the individual CID and using the associated Data Grant Burst Type IE burst profile.

TP ID	SS/MS/PMP/PO/BV-004
Reference	Clauses 6.3.6.3, 6.3.7.4
Selection criteria	Unicast polling + PiggyBack request
Initial condition	IUT is authorized and registered
Test purpose	Check that the IUT: When it wishes to request bandwidth, on receipt of a unicast UL-MAP containing the Basic CID and indicating an uplink interval with the Request IE, sends a Generic MAC Header containing the individual CID and a Grant Management Subheader (PiggyBack request) during the indicated interval and using the associated Request IE burst profile.

TP ID	SS/MS/PMP/PO/BV-005
Reference	Clauses 6.3.6.3, 6.3.7.4
Selection criteria	Unicast polling + PiggyBack request
Initial condition	IUT is authorized and registered
Test purpose	Check that the IUT: When it wishes to request bandwidth, on receipt of a unicast UL-MAP containing the Basic CID and indicating an uplink interval with the Data Grant Burst Type IE, sends a Generic MAC Header containing the individual CID and a Grant Management Subheader (PiggyBack request) during the indicated interval and using the associated Data Grant Burst Type IE burst profile.

TP ID	SS/MS/PMP/PO/BV-006
Reference	Clauses 6.3.6.3, 6.3.7.4
Selection criteria	Multicast polling + Normal request
Initial condition	IUT is authorized and registered
Test purpose	Check that the IUT: When it wishes to request bandwidth, on receipt of a multicast UL-MAP containing the Multicast CID and indicating an uplink interval with the Request IE, sends a Bandwidth Request Header containing the Multicast CID during the indicated interval using the associated Request IE burst profile.

TP ID	SS/MS/PMP/PO/BV-007
Reference	Clauses 6.3.6.3, 6.3.7.4
Selection criteria	Multicast polling + PiggyBack request
Initial condition	IUT is authorized and registered
Test purpose	Check that the IUT: When it wishes to request bandwidth, on receipt of a multicast UL-MAP containing the Multicast CID and indicating an uplink interval with the Request IE, sends a Generic MAC Header containing the Multicast CID and a Grant Management Subheader (PiggyBack request) during the indicated interval and using the associated Request IE burst profile.

TP ID	SS/MS/PMP/PO/BV-008
Reference	Clauses 6.3.6.3, 6.3.7.4
Selection criteria	Broadcast polling + Normal request
Initial condition	IUT is authorized and registered
Test purpose	Check that the IUT: When it wishes to request bandwidth, on receipt of a broadcast UL-MAP containing the Broadcast CID and indicating an uplink interval with the Request IE, sends a Bandwidth Request Header during the indicated interval containing the Broadcast CID and using the associated Request IE burst profile.

TP ID	SS/MS/PMP/PO/BV-009
Reference	Clauses 6.3.6.3, 6.3.7.4
Selection criteria	Broadcast polling + PiggyBack request
Initial condition	IUT is authorized and registered
Test purpose	Check that the IUT: When it wishes to request bandwidth, on receipt of a broadcast UL-MAP containing the Broadcast CID and indicating an uplink interval with the Request IE, sends a Generic MAC Header containing the Broadcast CID and a Grant Management Subheader (PiggyBack request) during the indicated interval and using the associated Request IE burst profile.

TP ID	SS/MS/MP/PO/BV-010
Reference	Clauses 6.3.6.3.1, 6.3.3.7
Selection criteria	
Initial condition	The IUT is operational. The TE transmits a unicast poll with a Data Grant IE on the TE's Basic CID. The IUT does not have any data to transmit.
Test purpose	Check that the IUT: Pads the data allocation.

TP ID	SS/MS/MP/PO/BV-011
Reference	Clause 6.3.6.3.2
Selection criteria	
Initial condition	The IUT is operational and is not transmitting on any active connection. The TE is simulating active SSs and the BS. The TE polls the IUT on the broadcast CID. The IUT does not require bandwidth.
Test purpose	Check that the IUT: Does not transmit a bandwidth request.

TP ID	SS/MS/MP/PO/BV-012
Reference	Clause 6.3.6.3.2
Selection criteria	
Initial condition	The IUT is operational and is not transmitting on any active connection. The TE is simulating active SSs and the BS. The TE polls the IUT on a multicast CID. The IUT does not require bandwidth.
Test purpose	Check that the IUT: Does not transmit a bandwidth request.

TP ID	SS/MS/MP/PO/BV-013
Reference	Clauses 6.3.6.3.2, 6.3.8
Selection criteria	
Initial condition	The IUT is operational and is not transmitting on any active connection. The TE is simulating active SSs and the BS. The TE polls the IUT on the broadcast CID. The IUT requires bandwidth.
Test purpose	Check that the IUT: Transmits a bandwidth request using the contention resolution algorithm.

TP ID	SS/MS/MP/PO/BV-014
Reference	Clauses 6.3.6.3.2, 6.3.8
Selection criteria	
Initial condition	The IUT is operational and is not transmitting on any active connection. The TE is simulating active SSs and the BS. The TE polls the IUT on a multicast CID. The IUT requires bandwidth.
Test purpose	Check that the IUT: Transmits a bandwidth request using the contention resolution algorithm.

TP ID	SS/MS/MP/PO/BV-015
Reference	Clauses 6.3.6.3.2, 6.3.8, table 347
Selection criteria	
Initial condition	The IUT is operational and is not transmitting on any active connection. The TE is simulating active SSs and the BS. The TE polls the IUT on the broadcast CID. The IUT requires bandwidth. The IUT transmits a bandwidth request and starts PXT_contention_timeout. The TE does not respond. After expiry of PXT_contention_timeout, the TE transmits a broadcast opportunity.
Test purpose	Check that the IUT: Retransmits the bandwidth request continuing to use the contention resolution algorithm.
Note	PXT_contention_timeout

TP ID	SS/MS/MP/PO/BV-016
Reference	Clauses 6.3.6.3.2, 6.3.8, table 347
Selection criteria	
Initial condition	The IUT is operational and is not transmitting on any active connection. The TE is simulating active SSs and the BS. The TE polls the IUT on the multicast CID. The IUT requires bandwidth. The IUT transmits a bandwidth request and starts PXT_contention_timeout. The TE does not respond. After expiry of PXT_contention_timeout, the TE transmits a multicast opportunity.
Test purpose	Check that the IUT: Retransmits the bandwidth request continuing to use the contention resolution algorithm.
Note	PXT_contention_timeout

TP ID	SS/MS/MP/PO/BV-017
Reference	Clauses 6.3.6.3.2, 6.3.8, table 347
Selection criteria	
Initial condition	The IUT is operational and is not transmitting on any active connection. The TE is simulating active SSs and the BS. The TE polls the IUT on the broadcast CID. The IUT requires bandwidth. The IUT transmits a bandwidth request and starts PXT_contention_timeout. The TE does not respond. After expiry of PXT_contention_timeout, the TE transmits a Data Grant IE on the Basic CID.
Test purpose	Check that the IUT: Retransmits the bandwidth request on the Basic CID.
Note	PXT_contention_timeout

TP ID	SS/MS/MP/PO/BV-018
Reference	Clause 6.3.6.3.3, figure 40
Selection criteria	
Initial condition	The IUT is operational and transmitting on a UGS connection. Piggybacking and bandwidth stealing are exhausted.
Test purpose	Check that the IUT: To request bandwidth for requirements in addition to the UGS connection, sets the PM bit to 0x1 in the Grant Management subheader.

5.3.2.3.13   Service Flow (SF)

TP ID	SS/MS/PMP/SF/BV-000
Reference	Clause 6.3.14.6.2
Selection criteria	
Initial condition	IUT is operational. A downlink service flow is admitted. The TE transmits DSA-REQ for additional service flows that will eventually exceed the provisioned QoS.
Test purpose	Check that the IUT: Transmits DSA-RSP allowing the additional service flows and reserving the service flow already admitted.

TP ID	SS/MS/PMP/SF/BV-001
Reference	Clause 6.3.14.6.2
Selection criteria	
Initial condition	IUT is operational. A downlink service flow is active. The TE transmits a DSC-REQ with an AdmittedQoSParameterSet that is a subset of the previous AdmittedQoSParameterSet used in activating the service flow. The ActiveQoSParameterSet remains a subset of the newer AdmittedQoSParameterSet.
Test purpose	Check that the IUT: Transmits a DSC-RSP accepting the newer AdmittedQoSParameterSet.

TP ID	SS/MS/PMP/SF/BV-002
Reference	Clause 6.3.14.6.2
Selection criteria	
Initial condition	IUT is operational. A downlink service flow is active. The TE transmits a DSC-REQ with an AdmittedQoSParameterSet that is a subset of the previous AdmittedQoSParameterSet used in activating the service flow. The ActiveQoSParameterSet is no longer a subset of the newer AdmittedQoSParameterSet.
Test purpose	Check that the IUT: Transmits a DSC-RSP rejecting the newer AdmittedQoSParameterSet.

TP ID	SS/MS/PMP/SF/BV-003
Reference	Clause 6.3.14.8
Selection criteria	
Initial condition	IUT is operational. An uplink service flow is active. The TE transmits a DSC-REQ message with only an Admitted QoS parameters set. The DSC transaction is successful.
Test purpose	Check that the IUT: Deactivates the uplink service flow.

TP ID	SS/MS/PMP/SF/BV-004
Reference	Clause 6.3.14.8
Selection criteria	
Initial condition	IUT is operational. An uplink service flow is active. The TE transmits a DSC-REQ message with neither an Active QoS parameters set nor an Admitted QoS parameters set. The DSC transaction is successful. The TE then transmits a DSC-REQ message with only an Active QoS parameters set.
Test purpose	Check that the IUT: Deactivates the uplink service flow and does not reactivate it after the second DSC transaction completion.

TP ID	SS/MS/PMP/SF/BV-005
Reference	Clause 6.3.14.8
Selection criteria	
Initial condition	IUT is operational. An uplink service flow is active. The TE transmits a DSC-REQ message with both an Active QoS parameters set and an Admitted QoS parameters set. The DSC transaction is successful.
Test purpose	Check that the IUT: Implements the QoS for the newer Admitted and Active QoS parameter sets for the service flow.

TP ID	SS/MS/PMP/SF/BV-006
Reference	Clause 6.3.14.8
Selection criteria	
Initial condition	IUT is operational. An uplink service flow is active. The TE transmits a DSC-REQ message with both an Active QoS parameters set and an Admitted QoS parameters set. The Active QoS parameters set is not a subset of the Admitted QoS parameters set.
Test purpose	Check that the IUT: Causes the DSC transaction to fail and leaves QoS unchanged.

TP ID	SS/MS/PMP/SF/BV-007
Reference	Clause 6.3.14.9.4
Selection criteria	
Initial condition	IUT is operational. An uplink service flow is active. The TE transmits a DSC-REQ for the Basic Management connection with a null ActiveQoSParamSet.
Test purpose	Check that the IUT: Transmits a valid DSC-RSP and, upon receiving the DSC-ACK message, re-registers.

TP ID	SS/MS/PMP/SF/BV-008
Reference	Clause 6.3.14.9.4
Selection criteria	
Initial condition	IUT is operational. An uplink service flow is active. The TE transmits a DSC-REQ for the Primary Management connection with a null ActiveQoSParamSet.
Test purpose	Check that the IUT: Transmits a valid DSC-RSP and, upon receiving the DSC-ACK message, re-registers.

TP ID	SS/MS/PMP/SF/BV-009
Reference	Clauses 6.3.14.9.4, 11.7.6
Selection criteria	PIC_managed_SS
Initial condition	IUT is operational. An uplink service flow is active. The TE transmits a DSC-REQ for the Secondary Management connection with a null ActiveQoSParamSet.
Test purpose	Check that the IUT: Transmits a valid DSC-RSP and, upon receiving the DSC-ACK message, re-registers.

TP ID	SS/MS/PMP/SF/BV-010
Reference	Clauses 11.13.4, 6.3.14.2
Selection criteria	
Initial condition	IUT is operational. A service flow is preprovisioned.
Test purpose	Check that the IUT: Has a service flow encoding that specifies a ProvisionedQoSParamSet.

TP ID	SS/MS/PMP/SF/BV-011
Reference	Clauses 11.13.4, 6.3.14.2
Selection criteria	
Initial condition	IUT is operational. A service flow is provisioned after SS initialization.
Test purpose	Check that the IUT: Has a service flow encoding that specifies a ProvisionedQoSParamSet.

TP ID	SS/MS/PMP/SF/BV-012
Reference	Clause 11.13.5
Selection criteria	
Initial condition	IUT is operational. Two service flows are established. The IUT uses contention requests to request additional bandwidth for both service flows.
Test purpose	Check that the IUT: Selects contention request opportunities for the service flow with the highest Traffic Priority.

TP ID	SS/MS/PMP/SF/BV-013
Reference	Clause 11.13.6
Selection criteria	
Initial condition	IUT is operational. One uplink service flow is established.
Test purpose	Check that the IUT: The uplink QoS conforms to the Maximum Sustained Traffic Rate on the average, over time.

TP ID	SS/MS/PMP/SF/BV-014
Reference	Clause 11.13.6
Selection criteria	
Initial condition	IUT is operational. One uplink service flow is established. The Maximum Sustained Traffic Rate is set to zero.
Test purpose	Check that the IUT: The uplink QoS is not constrained to any maximum rate.

TP ID	SS/MS/PMP/SF/BV-015
Reference	Clause 11.13.6
Selection criteria	
Initial condition	IUT is operational. One uplink service flow is established. The Maximum Sustained Traffic Rate is omitted.
Test purpose	Check that the IUT: The uplink QoS is not constrained to any maximum rate.

TP ID	SS/MS/PMP/SF/BV-016
Reference	Clause 11.13.7
Selection criteria	
Initial condition	IUT is operational. One service flow is established
Test purpose	Check that the IUT: Provides the maximum burst size for this service flow.

TP ID	SS/MS/PMP/SF/BV-017
Reference	Clause 11.13.10
Selection criteria	
Initial condition	IUT is operational. A service flow is established. The TE transmits a DSC-REQ message with a Vendor-specific QoS Parameters TLV. The first TLV inside this TLV is not of Vendor ID Type.
Test purpose	Check that: The IUT discards the Vendor-specific QoS Parameters TLV and that the service flow remains unchanged.
Note	Requires an Upper Tester.

TP ID	BS/MS/PMP/SF/BV-018
Reference	Clause 11.13.12
Selection criteria	
Initial condition	IUT is operational. The TE transmits a DSA-REQ message to establish an uplink service flow with the Request/transmission Policy Bit #0 set to 1 and all other of its bits set to 0.
Test purpose	Check that: The IUT provides the rtPS uplink scheduling service.

TP ID	SS/MS/MP/SF/BV-019
Reference	Clauses 6.3.5.2.1, 11.13.12
Selection criteria	
Initial condition	UGS scheduling in use for this connection. The TE initiates a DSA uplink transaction by setting the Request/Transmission Policy to prohibit the IUT from using contention request opportunities on this connection (Bit #0). The IUT accepts the service flow addition. The service flow is established.
Test purpose	Check that the IUT: Does not use broadcast bandwidth request opportunities for this service flow.

TP ID	SS/MS/MP/SF/BV-020
Reference	Clause 11.13.12
Selection criteria	
Initial condition	IUT is operational. The TE initiates a DSA uplink transaction by setting the Request/Transmission Policy to prohibit piggybacking requests with data (Bit #2). The IUT accepts the service flow addition. The service flow is established.
Test purpose	Check that the IUT: Does not piggyback requests with data for this service flow.

TP ID	SS/MS/MP/SF/BV-021
Reference	Clause 11.13.12
Selection criteria	
Initial condition	IUT is operational. The TE initiates a DSA uplink transaction by setting the Request/Transmission Policy to prohibit data fragmentation (Bit #3). The IUT accepts the service flow addition. The service flow is established.
Test purpose	Check that the IUT: Does not fragment data for this service flow.

TP ID	SS/MS/MP/SF/BV-022
Reference	Clause 11.13.12
Selection criteria	
Initial condition	IUT is operational. The TE initiates a DSA uplink transaction by setting the Request/Transmission Policy to prohibit payload header suppression (Bit #4). The IUT accepts the service flow addition. The service flow is established.
Test purpose	Check that the IUT: Does not suppress payload headers for this service flow.

TP ID	SS/MS/MP/SF/BV-023
Reference	Clause 11.13.12
Selection criteria	
Initial condition	IUT is operational. The TE initiates a DSA uplink transaction by setting the Request/Transmission Policy to prohibit packing multiple SDUs (or fragments) into single MAC PDUs (Bit #5). The IUT accepts the service flow addition. The service flow is established.
Test purpose	Check that the IUT: Does not pack multiple SDUs (or fragments) into single MAC PDUs for this service flow.

TP ID	SS/MS/MP/SF/BV-024
Reference	Clause 11.13.12
Selection criteria	
Initial condition	IUT is operational. The TE initiates a DSA uplink transaction by setting the Request/Transmission Policy to exclude the CRC in the MAC DATA PDUs (Bit #6). The IUT accepts the service flow addition. The service flow is established.
Test purpose	Check that the IUT: Excludes the CRC in the MAC DATA PDUs for this service flow.

TP ID	SS/MS/MP/SF/BV-025
Reference	Clause 11.13.14
Selection criteria	
Initial condition	IUT is operational. The TE initiates a DSA downlink transaction with a Maximum Latency parameter requirement. This service flow does not exceed the minimum downlink reserved rate. The IUT accepts the service flow addition. The service flow is established.
Test purpose	Check that the IUT: Satisfies the maximum latency requirement for this service flow.

5.3.2.3.14   Uplink Scheduling (US)

TP ID	SS/MS/MP/US/BV-000
Reference	Clause 6.3.5.2.1
Selection criteria	
Initial condition	UGS scheduling in use for this connection. The IUT has detected that the service flow exceeds its transmit queue size.
Test purpose	Check that the IUT: Sets to 1 the Slip Indicator bit in the Grant Management field.

TP ID	SS/MS/MP/US/BV-001
Reference	Clause 6.3.5.2.1
Selection criteria	
Initial condition	UGS scheduling in use for this connection. The IUT detected that the service flow exceeded its transmit queue size and set the Slip Indicator bit in the Grant Management field. The IUT then detected that service flow is back within the queue's limits.
Test purpose	Check that the IUT: Clears to 0 the Slip Indicator bit in the Grant Management field.

TP ID	SS/MS/MP/US/BV-002
Reference	Clause 6.3.5.2.2
Selection criteria	
Initial condition	rtPS scheduling in use for this connection.
Test purpose	Check that the IUT: To obtain uplink transmission opportunities on this connection, uses only unicast request opportunities, or Unsolicited Data Grant Burst Types.

TP ID	SS/MS/MP/US/BV-003
Reference	Clause 6.3.5.2.2
Selection criteria	
Initial condition	nrtPS scheduling in use for this connection.
Test purpose	Check that the IUT: To obtain uplink transmission opportunities on this connection, uses only unicast request opportunities, or Unsolicited Data Grant Burst Types, or Contention request opportunities.

5.3.2.4   Message Behaviour for Mesh Mode (MM)

5.3.2.4.1   Additional Privacy Features (AP)

5.3.2.4.1.1   Cryptography (CRY)

5.3.2.4.1.1.1   Downlink (DL)

TP ID	SS/MS/MM/AP/CRY/DL/BV-000
Reference	Clause 7.5.4.1
Selection criteria	
Initial condition	The IUT is decrypting payloads using DES.
Test purpose	Check that the IUT: Ignores the least significant bit of each byte in the 8-byte DES keys.

5.3.2.4.1.1.2   Uplink (UL)

TP ID	SS/MS/MM/AP/CRY/UL/BV-000
Reference	Clauses 7.5.3, 7.5.4.3
Selection criteria	Mesh Mode only
Initial condition	The IUT is authenticating the Key Request message with HMAC-Digest.
Test purpose	Check that the IUT: Uses HMAC_KEY_S to calculate the HMAC-Digest over the entire MAC management message with the exception of the HMAC-Digest and HMAC Tuple attributes.

TP ID	SS/MS/MM/AP/CRY/UL/BV-001
Reference	Clause 7.5.6
Selection criteria	
Initial condition	
Test purpose	Check that the IUT: Uses the RSA Signature Algorithm[PKCS #1] with SHA-1 and a public exponent of 65 337 for its SS-Certificate digital signature.

TP ID	SS/MS/MM/AP/CRY/UL/BV-002
Reference	Clause 7.5.6
Selection criteria	
Initial condition	
Test purpose	Check that the IUT: Uses the RSA Signature Algorithm[PKCS #1] with SHA-1, a public exponent of 65 337, and signature key modulus lengths of at least 1 024 bits but not greater than 2 048 bits for the CA-Certificate digital signature.

5.3.2.4.2 Node Entry and Initialization (NE)

5.3.2.4.2.1 Node Registration (NR)

TP ID	SS/MS/MM/NE/NR/BV-000
Reference	Clauses 6.3.2.3.7, 6.3.9.9
Selection criteria	Mesh Mode
Initial condition	IUT is authorized, Register with BS
Test purpose	Check that the IUT: Sends a REG-REQ containing the UL CID Support, the SS MAC Address, the MAC Version and the HMAC tuple.

Annex A (informative):
Bibliography

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History

Document history		
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