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Technical Specification

Broadband Radio Access Networks (BRAN);
HiperMAN;
Conformance Testing for WiMAX/HiperMAN 1.2.1;
Part 2: Test Suite Structure and
Test Purposes (TSS&TP)

Reference

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Keywords

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Foreword

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

The present document is part 2 of a multi-part deliverable covering Broadband Radio Access Networks (BRAN); HiperMAN; Conformance Testing for WiMAX/HiperMAN 1.2.1, as identified below:

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

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

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

1   Scope

The present document contains the Test Suite Structure (TSS) and Test Purposes (TP) to test the BRAN HiperMAN 1.2.1 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 [5] and ISO/IEC 9646-2 [6]) as well as the ETSI rules for conformance testing (ETS 300 406 [4]) are used as a basis for the test methodology.

2   References

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.

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

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2.1   Normative references

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

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

[2]   IEEE 802.16-2004: " IEEE Standard for Local and Metropolitan Area Networks - Part 16: Air Interface for Fixed Broadband Wireless Access Systems".

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

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

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

NOTE: See also ITU-T Recommendation X.290 (1991).

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

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

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

[9]   IEEE 802.3: "IEEE Standard for Information Technology - Telecommunications and Information Exchange between Systems - Local and Metropolitan Area Networks - Specific requirements - Part 3: Carrier Sense Multiple Access with Collision Detection (CSMA/CD) Access Method and Physical Layer Specifications".

2.2   Informative references

The following referenced documents are not essential to the use of the present document but they assist the user with regard to a particular subject area. For non-specific references, the latest version of the referenced document (including any amendments) applies.

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

3   Definitions and abbreviations

3.1   Definitions

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

3.2   Abbreviations

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

ACK	ACKnowledgment
AES	Advanced Encryption Standard
AK	Authorization Key
ATM	Asynchronous Transfer Mode
BE	Best Effort
BPSK	Binary Phase Shift Keying
BSN	Block Sequence Number
BW	BandWidth
BWA	BandWidth Allocation and polling
CA	Certification Authority
CBC	Cipher Block Chaining
CDC	Channel Descriptor Change
CDM	Channel Descriptors and Maps
CDS	Classifier DSx Signaling
CID	Connection IDentifier
CINR	Carrier to noise and INterference Ratio

CLS	CLaSsification
CRC	Cyclic Redundancy Check
CS	Convergence Sublayer
DCD	Downlink Channel Descriptor
DES	Data Encryption Standard
DIUC	Downlink Interval Usage Code
DLC	Data Link Control layer
DSA	Dynamic Service Addition
DSC	Dynamic Service Change
DSD	Dynamic Service Deletion
DSx	Dynamic Service addition, change or deletion
ECB	Electronic Control Block
EKS	Encryption and Key Scheduling
FC	Frame Count
FDD	Frequency Division Duplexing
FPC	Fast Power Control
FSM	Finite State Machine
FWA	Fixed Wireless Access
HMAC	Hashed Message Authentication Code
HT	Header Type
IE	Information Element
IPC	IP Connectivity
IUT	Implantation Under Test
KEK	Key Encryption Key
KU	Key Usage
MAC	Medium Access Control
MIB	Management Information Base
NACK	Negative ACKnowledgment
OFDM	Orthogonal Frequency Division Multiplexing
OFDMA	Orthogonal Frequency Division Multiple Access
PCU	Packet CS Usage
PDU	Protocol Data Unit
PHS	Payload Header Suppression
PHSI	Payload Header Suppression Index
PHSV	Payload Header Suppression Verify
PHY	PHYsical layer
PMP	Point-to-MultiPoint
PRNG	Periodic Ranging
QoS	Quality of Service
RER	REset and Re-registration
RNG	RaNGing
RSP	ReSPonse
RXD	Receive Data
SA	Security Association
SAID	Security Association IDentity
SAM	Security Association Management
SAP	Service Access Point
SDU	Service Data Unit
SNMP	Simple Network Management Protocol
TDD	Time Division Duplexing
TFTP	Trivial File Transfer Protocol
TLV	Type, Length, Value
TP	Test Purposes
TSS	Test Suite Structure
Tx	Transmit
TXD	Transmit Data
UCD	Uplink Channel Descriptor
UGS	Unsolicited Grant Service

4 Test Suite Structure (TSS)

4.1 Structure

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

Group	Function	Sub-function
	Map and frame Structure	
		Initialization
		Operational
		Relevance
	Channel Descriptors	
	Channel Descriptor Change	
		Uplink
		Downlink
Radio Link Control		
	Initial Ranging	
	Periodic Ranging	
	Downlink Burst Profile Management	
		To a Less Robust Profile
		To a More Robust Profile
	Negotiate Basic Capabilities	
Registration, IP connectivity and TFTP		
	Registration	
	IP Connectivity	
Privacy and Key Management		
	Authentication/ Authorization	
		Initialization
		Operational
	TEK	
		Initialization
		Operational
	Security Association Management	
	Encryption and Key Scheduling	
		Key Usage
		Encryption
		Decryption
	Certificates	
Dynamic Services		
	Dynamic Service Addition	
	Dynamic Service Change	
	Dynamic Service Deletion	
	QoS Parameter Sets	
Bandwidth Allocation and Polling		
	Request/Grant	
	Multicast Polling	
Reset and Re-registration		
Clock Comparison		
MAC PDU		
	Packing	
	Fragmentation	
	PDU concatenation	
	CRC	
	ARQ	
		Setup
		Reset
		Receive Data
		Transmit Data
Packet CS		
	Packet CS Usage	
	Classifier DSx Signaling	
	Classification	

Group	Function	Sub-function
		IPv4 and IPv6
		Ethernet
		VLAN
		IP over Ethernet
		IP over VLAN
	Payload Header Suppression	
Service Flow Control		
Adaptive Antenna Support		

Figure 1: TSS for HiperMAN DLC

The test suite is structured as a tree with the root defined as DLC-BS or DLC-SS representing the protocol groups "DLC for BS" or "DLC for SS". The tree is of rank 3 with the first rank a Group, the second a Function, and the third a sub-function. The third rank is broken down into the standard ISO conformance test categories CA, BV, BI, BO and TI as defined in clause 4.2.2.

4.2 Test groups

Each test group has a total of three levels. The first level is the protocol services. The second level separates the protocol services into the various functional areas. The third level are the sub-functional areas. The fourth level, if required, is used to indicate the initiator (BS or SS) or the direction of communication (DL or UL). This fourth level is not shown in figure 1.

4.2.1 Protocol services

The protocol groups identify the DLC protocol services given in TS 102 178 [1] and IEEE 802.16-2004 [2].

4.2.1.1 Channel descriptors and maps

This protocol group contains the test purposes for the DCD, UCD, DL-MAP, and UL-MAP messages that provide channel parameters and burst mapping. Such functions as Scanning for the Downlink Channel and Obtaining Uplink Parameter are included.

4.2.1.2 Radio Link Control (RLC)

This protocol group contains the test purposes for Initial Ranging/Automatic Adjustments, Negotiating Basic Capabilities, Periodic Ranging, and Downlink Profile management.

4.2.1.3 Registration, IP connectivity, and TFTP

This protocol group includes the test purposes for Registration during Initialization, IP Connectivity during Initializations, Time of Day Establishment, and the Transfer of Operational Parameters.

4.2.1.4 Privacy and key management

The functions included in this protocol group are Authentication/Authorization, Certification, Reauthorization, TEK Exchange, TEK Update, TEK Scheduling, Security Association Management, Encryption, and Decryption.

4.2.1.5 Dynamic services

Dynamic service addition, change, and deletion for both BS-Initiated and DS-Initiated behaviour are in this protocol group.

4.2.1.6 Bandwidth allocation and polling

This protocol group includes the bandwidth request/grant functions for stand-alone, piggyback and focused contention.

4.2.1.7 Reset and re-registration

Reset and re-registration functions are included in this protocol group.

4.2.1.8 Clock comparison

The clock comparison function in this group is used in network systems with service flows carrying information that requires the SSs to reconstruct their network clock signals, e.g. DS1 and DS3.

4.2.1.9 MAC PDU Construction

The functions included in this protocol group are PDU Packing, Fragmentation, Concatenation, CRC Use, ARQ Reset, ARQ Receive, and ARQ Transmit.

4.2.1.10 Packet convergence sublayer

The service specific packet 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.

4.2.1.11 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 Invalid Behaviour (BI) tests

This test sub group shall verify that the IUT reacts in conformity with the base specifications after receipt of a syntactically invalid PDU.

4.2.2.3 inOpportune Behaviour (BO) tests

This test sub group shall verify that the IUT reacts in conformity with the base specifications after receipt of a syntactically correct PDU not expected in the actual message exchange.

4.2.2.4 TImer and counter (TI) tests

This test group shall verify that the IUT reacts in conformity with the base specifications after expiry of a defined timer or counter.

5   Test Purposes (TP)

5.1   Introduction

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 the clause below.
IEEE 802.16 [2] Reference	A pointer to the base specification requirement from which the TP is derived (specification reference, clause, and paragraph).
PICS Item	The PICS item(s) associated with this TP.
Initial Condition	The IUT's state to which the TP is applied.
Expected behaviour	Definition of the events that are expected from the IUT pursuant to the base specification given a certain stimulus.
Notes	Additional optional information provided to the TP reader.

5.1.2   TP Identifier naming conventions

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

Table 2: TP naming convention

Identifier:	TP/<st>/<pg>/<fg>/<sg>/<ini>/<x>-H<nnn>		
	<st> = side type	BS	Base Station
		SS	Subscriber Station
	<pg> = protocol group	CDM	Channel Descriptors and Maps
		RLC	Radio Link Control
		INI	Registration, IP Connectivity, and Parameter Transfer
		PKM	Privacy and Key Management
		DS	Dynamic Services
		BWA	BandWidth Allocation and Polling
		RER	REset and Re-registration
		CCC	CloCk Comparison
		MAC	MAC PDU Construction
		PCS	Packet CS
		SF	Service Flow control
		AAS	Adaptive Antenna Support
	<fg> = function group	MAP	MAp and frame structure
		CD	Channel Descriptors
		CDC	Channel Descriptor Change
		IRNG	Initial RangiNG
		PRNG	Periodic RangiNG
		DBPC	Downlink Burst Profile Management
		SBC	Negotiate Basic Capabilities
		REG	REGistration
		IPC	IP Connectivity
		AUTH	AUTHentication/AUTHorization
		TEK	Encryption Key Transfer
		SAM	Security Association Management
		EKS	Encryption and Key Scheduling
		CERT	CERTificates
		DSA	Dynamic Service Addition
		DSC	Dynamic Service Change
		DSD	Dynamic Service Deletion

Identifier:	TP/<st>/<pg>/<fg>/<sg>/<ini>/<x>-H<nnn>		
		QPS	QoS Parameter Sets
		REQ	REQuest/Grant
		MCP	MultiCast Polling
		PACK	PACKing
		FRAG	FRAGmentation
		CAT	PDU ConcATenation
		CRC	Cyclic Redundancy Check (CRC)
		ARQ	ARQ
		PCU	Packet CS Usage
		CDS	Classifier DSx Signaling
		CLS	CLaSsification
		PHS	Payload Header Suppression
	<sg> = subfunction group	INIT	INITialization
		OPN	OPeratioN
		RLV	ReLeVance
		UL	UpLink
		DL	DownLink
		KU	Key Usage
		ENC	ENCryption
		DEC	DECryption
		LRP	To a Less Robust Profile
		MRP	To a More Robust Profile
		SET	SETup
		RE	REset
		RXD	Receive Data
		TXD	Transmit Data
		IP	IPv4 and IPv6
		ENET	EtherNET
		VLAN	VLAN
		IPoE	IP over Ethernet
		IPoV	IP over VLAN
	<ini> = initiator of procedure or direction of flow	BsIni	Procedure is initiated by BS
		SsIni	Procedure is initiated by SS
		DL	DownLink
		UL	UpLink
	<x> = type of testing	BV	Valid Behaviour tests
		BI	Invalid Syntax or Behaviour Tests
		BO	Inopportune Behaviour Tests
		TI	TImer and counter tests
	<nnn> = sequential number	Hnnn	(H000, H001, …)

5.1.3 Sources of TP definitions

All TPs are specified according to IEEE 802.16-2004 [2] as corrected by Corrigendum 1 of IEEE 802.16e-2005 [3] and supplemented by TS 102 178 [1]. In the event of conflict between these three references, the requirements of IEEE 802.16-2004 [2] were used. Unless otherwise noted, all references shown in the TPs are from to IEEE 802.16-2004 [2].

The scope of the present document was refined during its development and is now fixed as the subset of IEEE 802.16-2004 [2] that specifically concerns the current WiMAX and BRAN/HiperMAN concepts. 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).

- License-exempt operation.

- PHS.

- Excluded functionality:

  - Mesh mode.

  - ATM CS.

5.2   Test purposes for BS (BS)

5.2.1   Channel Descriptors and Maps (CDM)

5.2.1.1   Map and Frame Structure (MAP)

TP ID	TP/BS/CDM/MAP/BV-H000
IEEE 802.16 Reference	clauses 6.3.2.3.2 and 8.3.5.1 5
PICS Item	
Initial Condition	IUT is operating
Expected Behaviour	Check that: IUT transmits valid DL-MAP messages within Lost DL-MAP Interval.
Test strategy	Straightforward
Notes	OPN Group

TP ID	TP/BS/CDM/MAP/BV-H001
IEEE 802.16 Reference	clauses 6.3.2.3.4 and 8.3.5.1
PICS Item	
Initial Condition	IUT is operating
Expected Behaviour	Check that: When transmitting a UL-MAP, the IUT places the UL-MAP - either immediately following the DL-MAP (if one is present) or - immediately following the DLFP.
Test strategy	Straightforward. Can be done before TE synchronizes.
Notes	Follows directly from clause 8.3.5.1. INIT Group

TP ID	TP/BS/CDM/MAP/BV-H002
IEEE 802.16 Reference	clause 8.3.5.1
PICS Item	
Initial Condition	IUT is operating in TDD mode.
Expected Behaviour	Check that: The IUT correctly decodes UL messages whose sub frame start position has changed.
Test strategy	1) Establish a DS UL data flow. 2) Provoke BS to transmit DL and UL-MAPs that change the end of the DL sub frame and the start of the UL sub frame. 3) For each frame, TE sends UL data per the UL-MAP. 4) Assign PASS if UL data received by the IUT is the same as the data that was sent.
Notes	

TP ID	TP/BS/CDM/MAP/BV-H003
IEEE 802.16 Reference	clause 8.3.5.1
PICS Item	
Initial Condition	IUT is operating and transmits UL Maps.
Expected Behaviour	Check that: On transmitting UL grants for minimum relevance, the IUT process the received UL data according to minimum relevance.
Test strategy	
Notes	Requires a means of provoking the IUT to direct minimum relevance. RLV Group

TP ID	TP/BS/CDM/MAP/BV-H004
IEEE 802.16 Reference	clause 8.3.5.1
PICS Item	
Initial Condition	IUT is operating and transmits UL Maps.
Expected Behaviour	Check that: On transmitting UL grants for maximum relevance, the IUT process the received UL data according to maximum relevance.
Test strategy	
Notes	Requires a means of provoking the IUT to direct maximum relevance. RLV Group

TP ID	TP/BS/CDM/MAP/BV-H005
IEEE 802.16 Reference	clause 8.3.5.1
PICS Item	
Initial Condition	IUT is operating.
Expected Behaviour	Check that: When sending data to several SSs each having a different DL PHY mode, the IUT creates a correctly structured Frame Control Header and DL sub frame containing the multiple DL PHY modes.
Test strategy	
Notes	OPN Group

TP ID	TP/BS/CDM/MAP/BV-H006
IEEE 802.16 Reference	clause 6.3.2.3.4
PICS item	
Initial Condition	IUT is operating.
Expected Behaviour	Check that: For each UL-MAP message, the IUT generates at least one UL-MAP-IE that marks the end of the last allocated burst.
Test strategy	
Notes	OPN Group

TP ID	TP/BS/CDM/MAP/BV-H007
IEEE 802.16 Reference	clause 6.3.2.3.4
PICS item	
Initial Condition	IUT is operating.
Expected Behaviour	Check that: The IUT transmits the UL-MAP IEs in strict chronological order for each UL-MAP message.
Test strategy	
Notes	OPN Group

TP ID	TP/BS/CDM/MAP/BV-H008
IEEE 802.16 Reference	clause 6.3.2.3.4
PICS item	
Initial Condition	IUT is operating.
Expected Behaviour	Check that: The IUT includes an Uplink Burst Profile in the UCD for each UIUC used in the UL-MAP message.
Test strategy	
Notes	OPN Group

TP ID	TP/BS/CDM/MAP/BV-H009
IEEE 802.16 Reference	clause 6.3.7.4.3.2
PICS item	
Initial Condition	The IUT is ranging.
Expected Behaviour	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.
Test strategy	
Notes	

TP ID	TP/BS/CDM/MAP/BV-H010
IEEE 802.16 Reference	clause 6.3.2.3.2
PICS item	
Initial Condition	IUT has terminated Network entry procedures.
Expected Behaviour	Check that: The IUT's Base Station ID is programmable.
Test strategy	
Notes	

5.2.1.2 Channel Descriptors (CD)

TP ID	TP/BS/CDM/CD/BV-H000
IEEE 802.16 Reference	clauses 6.3.2.3.1 and 10.1 (DCD Interval)
PICS Item	
Initial Condition	IUT is operating.
Expected Behaviour	Check that: The IUT transmits with period DCD Interval seconds DCD messages containing correct parameters and downlink burst profile(s).
Test strategy	Straightforward.
Notes	

TP ID	TP/BS/CDM/CD/BV-H001
IEEE 802.16 Reference	clauses 6.3.2.3.3 and 10.1 (UCD Interval)
PICS Item	
Initial Condition	IUT is operating.
Expected Behaviour	Check that: The IUT periodically transmits valid UCD messages with period UCD Interval seconds.
Test strategy	Straightforward.
Notes	If license-exempt operation then Frequency (Type =3) is not part of UCD. (clause 6.3.15.7)

TP ID	TP/BS/CDM/CD/BV-H002
IEEE 802.16 Reference	clauses 6.3.15.7 and 10.1 (DCD Interval)
PICS Item	
Initial Condition	IUT is operating license-exempt.
Expected Behaviour	Check that: The IUT transmits with period DCD Interval seconds DCD messages containing correct license-exempt parameters and downlink burst profile(s).
Test strategy	Straightforward.
Notes	1) License-exempt parameters for DCD are Channel Number and Channel Switch Frame Number from DCD Channel Encoding table in clause 11.4.1. 2) DCD requires other non license-exempt specific parameters as well. See same table.

TP ID	TP/BS/CDM/CD/BV-H003
IEEE 802.16 Reference	clauses 6.3.2.3.3 and 10.1 (UCD Interval)
PICS Item	
Initial Condition	IUT is operating.
Expected Behaviour	Check that: The IUT periodically transmits valid UCD messages with period UCD Interval seconds, and this UCD is addressed to the MAC Broadcast Address.
Test strategy	
Notes	

TP ID	TP/BS/CDM/CD/BV-H004
IEEE 802.16 Reference	clauses 6.3.2.3.3 and 10.1 (UCD Interval)
PICS Item	
Initial Condition	IUT is operating with several SSs. The current Configuration Change Count is i.
Expected Behaviour	Check that: To change the uplink channel descriptor, the IUT regularly transmits at least once to each SS a UCD message with the Configuration Change Count = (i + 1 MOD 256).
Test strategy	
Notes	

TP ID	TP/BS/CDM/CD/BV-H005
IEEE 802.16 Reference	clauses 6.3.2.3.3 and 10.1 (UCD Interval)
PICS Item	
Initial Condition	IUT is operating with several SSs. The current Configuration Change Count is i. To change the uplink channel descriptor, the IUT has transmitted a UCD message with the Configuration Change Count = (i + 1 MOD 256) to each SS.
Expected Behaviour	Check that: To effect the change to the new uplink channel descriptor, the IUT transmits UL-MAPs with the UCD Count = (i + 1 MOD 256) and does not transmit UL-MAPs with UCD Count = i.
Test strategy	
Notes	

TP ID	TP/BS/CDM/CD/BV-H006
IEEE 802.16 Reference	clauses 6.3.15.7 and 10.1 9DCD Interval)
PICS Item	
Initial Condition	The IUT is operating with several SSs. The current Configuration Change Count is i.
Expected Behaviour	Check that: To change the downlink channel descriptor, the IUT regularly transmits at least once to each SS a DCD message with the Configuration Change Count = (i + 1 MOD 256).
Test strategy	
Notes	

TP ID	TP/BS/CDM/CD/BV-H007
IEEE 802.16 Reference	clauses 6.3.15.7 and 10.1 (DCD Interval)
PICS Item	
Initial Condition	IUT is operating with several SSs. The current Configuration Change Count is i. To change the downlink channel descriptor, the IUT has transmitted a DCD message with the Configuration Change Count = (i + 1 MOD 256) to each SS.
Expected Behaviour	Check that: To effect the change to the new downlink channel descriptor, the IUT transmits DL-MAPs with the DCD Count = (i + 1 MOD 256) and does not transmit DL-MAPs with DCD Count = i.
Test strategy	
Notes	

TP ID	TP/BS/CDM/CD/BV-H008
IEEE 802.16 Reference	clauses 6.3.2.3.3 and 10.1 (UCD Interval)
PICS Item	
Initial Condition	IUT is operating with several SSs.
Expected Behaviour	Check that: The IUT transmits a separate UCD message for each active uplink channel associated with the downlink channel.
Test strategy	
Notes	

5.2.1.3   Channel Descriptor Change (CDC)

5.2.1.3.1   UpLink (UL)

TP ID	TP/BS/CDM/CDC/UL/BV-H000
IEEE 802.16 Reference	clause 6.3.11 Table "UCD update"
PICS item	
Initial Condition	The IUT has terminated Network entry procedures.
Expected Behaviour	Check that: After directing the SS to change the current set of uplink burst profiles, the IUT sends a UCD with incremented Configuration Change Count at least twice before sending a UL-MAP with the corresponding UCD Count.
Test strategy	
Notes	Requires a means to provoke the IUT to change the current set of UL burst profiles.

TP-ID	TP/BS/CDM/CDC/UL/BV-H001
IEEE 802.16 Reference	clause 6.3.11 Table "UCD update"
PICS Item	
Initial Condition	The IUT has directed the SS to change its current set of uplink burst profiles. A UCD with incremented Configuration Change Count has been sent at least twice.
Expected Behaviour	Check that: On sending UL-MAPs containing the new Configuration Change Count with grants for each burst profile, the IUT correctly processes uplink data using the new set of profiles.
Test strategy	
Notes	

TP-ID	TP/BS/CDM/CDC/UL/BV-H002
IEEE 802.16 Reference	clause 6.3.11 Table "UCD update"
PICS Item	
Initial Condition	The IUT has directed the SS to change its current set of uplink burst profiles. A UCD with incremented Configuration Change Count has been sent at least twice.
Expected Behaviour	Check that: On sending UL-MAPs containing the old Configuration Change Count with grants for each burst profile, the IUT correctly processes uplink data using the old set of profiles.
Test strategy	
Notes	

5.2.1.3.2   DownLink (DL)

TP ID	TP/BS/CDM/CDC/DL/BV-H000
IEEE 802.16 Reference	clause 6.3.11 Table "DCD update"
PICS item	
Initial Condition	The IUT has terminated Network entry procedures.
Expected Behaviour	Check that: After directing the SS to change the current set of downlink burst profiles, the IUT sends a DCD with incremented Configuration Change Count at least twice before sending a DL-MAP with the corresponding DCD Count.
Test strategy	
Notes	Requires a means to provoke the IUT to change the current set of DL burst profiles.

TP-ID	TP/BS/CDM/CDC/DL/BV-H001
IEEE 802.16 Reference	clause 6.3.11 Table "DCD update"
PICS Item	
Initial Condition	The IUT has directed the SS to change its current set of downlink burst profiles. A DCD with incremented Configuration Change Count has been sent at least twice.
Expected Behaviour	Check that: On sending DL-MAPs containing the new Configuration Change Count with grants for each burst profile, the IUT correctly transmits downlink data using the new set of profiles.
Test strategy	
Notes	

TP-ID	TP/BS/CDM/CDC/DL/BV-H002
IEEE 802.16 Reference	clause 6.3.11 Table "DCD update"
PICS Item	
Initial Condition	The IUT has directed the SS to change its current set of downlink burst profiles. A DCD with incremented Configuration Change Count has been sent at least twice.
Expected Behaviour	Check that: On sending DL-MAPs containing the old Configuration Change Count with grants for each burst profile, the IUT correctly transmits downlink data using the old set of profiles.
Test strategy	
Notes	

TP ID	TP/BS/CDM/CDC/DL/BV-H003
IEEE 802.16 Reference	clause 8.3.5.4
PICS item	
Initial Condition	IUT is initialized, using OFDM PHY, and a service flow is established.
Expected Behaviour	Check that: The IUT sends DCD messages containing a Frame Duration Code and that the time duration between two consecutive downlink preamble sequences matches the duration indicated by the Frame Duration Code.
Test strategy	
Notes	Tests have to be performed for different Frame Duration Codes.

5.2.2 Radio Link Control (RLC)

5.2.2.1 Initial Ranging (IRNG)

TP ID	TP/BS/RLC/IRNG/BV-H000
IEEE 802.16 Reference	clauses 6.3.2.3.4 and 8.3.6.3
PICS Item	
Initial Condition	IUT is operating.
Expected Behaviour	Check that: The IUT transmits UL-MAPs containing Initial Ranging UL-MAP IEs.
Test strategy	Straightforward
Notes	

TP ID	TP/BS/RLC/IRNG/BV-H001
IEEE 802.16 Reference	clauses 6.3.2.3.6 and 6.3.9.5.1 Table "Ranging and Automatic Adjustments Procedure"
PICS Item	
Initial Condition	IUT is operating and transmitting UL-MAPs with Initial Ranging IEs.
Expected Behaviour	Check that: On receiving a RNG-REQ with the Initial Ranging CID in an Initial Ranging opportunity that requires timing and power adjustments, the IUT: 1) Transmits a RNG-RSP on the Initial Ranging CID containing Basic CID, Primary CID, Status = Continue, Timing Adjustments, and Power Adjustments. 2) And subsequently transmits an Initial Ranging interval for the Basic CID in the RNG-RSP.
Test strategy	Straightforward. 1) IUT will send the Initial Ranging interval for the new Basic CID in a frame following the RNG-RSP.
Notes	1) Subchannelized ranging mechanism is not operating for this TP.

TP ID	TP/BS/RLC/IRNG/BV-H002
IEEE 802.16 Reference	clauses 6.3.2.3.6 and 6.3.9.5.1
PICS Item	
Initial Condition	IUT is operating and transmitting UL-MAPs with Initial Ranging IEs for a given Basic CID.
Expected Behaviour	Check that: On receiving a RNG-REQ with the given Basic CID in an Initial Ranging opportunity within tolerances, the IUT: 1) Transmits a RNG-RSP on the Basic CID containing Status = Success.
Test strategy	Straightforward
Notes	

TP ID	TP/BS/RLC/IRNG/BV-H003
IEEE 802.16 Reference	clause 6.3.9.6 Figure "Initial Ranging - BS response to undecodable message"
PICS Item	
Initial Condition	IUT is operating below 11 GHz and in Initial Ranging for an SS.
Expected Behaviour	Check that: On receiving an un-decodable RNG-REQ, the IUT either sends a RNG-RSP containing Ranging Status = Continue with Frame Number (and Opportunity) or discards the received message and does nothing.
Test strategy	
Notes	

TP ID	TP/BS/RLC/IRNG/BV-H004
IEEE 802.16 Reference	clause 6.3.9.6
PICS Item	
Initial Condition	IUT is operating and in Initial Ranging for an SS.
Expected Behaviour	Check that: On receiving a RNG-REQ with AAS Broadcast Capability TLV, the IUT sends a RNG-RSP with AAS Broadcast Capability TLV.
Test strategy	
Notes	

TP ID	TP/BS/RLC/IRNG/BV-H005
IEEE 802.16 Reference	clause 6.3.9.6
PICS Item	
Initial Condition	IUT is operating and in Initial Ranging for an SS.
Expected Behaviour	Check that: On receiving a long preamble followed by two identical symbols containing a subchannelized preamble on a sub-channel, the IUT allocates a single sub channel for the SS and sends a UL-MAP with UL-MAP IE containing a Subchannelized Network Entry IE on the Initial Ranging CID.
Test strategy	
Notes	

TP ID	TP/BS/RLC/IRNG/BV-H006
IEEE 802.16 Reference	clause 6.3.9.6
PICS Item	
Initial Condition	IUT is operating and has started Polled Initial Ranging.
Expected Behaviour	Check that: On receiving a RNG-REQ containing adjusted PHY parameters, the IUT sends a RNG-RSP containing a Ranging Status set to success.
Test strategy	
Notes	

TP ID	TP/BS/RLC/IRNG/BV-H007
IEEE 802.16 Reference	clause 6.3.9.6
PICS Item	
Initial Condition	IUT is operating and in Initial Ranging for an SS.
Expected Behaviour	Check that: On receiving a subchannelized network entry signal, the IUT sends RNG-RSP containing the frame number, initial ranging opportunity number and the received ranging sub-channel number. The IUT allocates the sub channel identifying the transmit opportunity, frame number and ranging sub channel. The IUT then sends a Subchannelized Network Entry IE in UL-MAP IE.
Test strategy	
Notes	

TP ID	TP/BS/RLC/IRNG/BV-H008
IEEE 802.16 Reference	clause 6.3.9.6
PICS Item	
Initial Condition	IUT is operating and in Initial Ranging for an SS. The IUT has received subchannelized network entry signal. The IUT has then sent a Subchannelized Network Entry IE in UL-MAP IE.
Expected Behaviour	Check that: On receiving a RNG-REQ at SS maximum power, the IUT sends a RNG-RSP containing Status = Success.
Test strategy	
Notes	

TP ID	TP/BS/RLC/IRNG/BV-H009
IEEE 802.16 Reference	clause 6.3.7.4.3.2
PICS Item	
Initial Condition	IUT is operating.
Expected Behaviour	Check that: After transmitting a UCD message with Ranging Request Opportunity Size: 1) The IUT provides initial ranging grants with a time between them equal to the maximum value of Initial Ranging Interval, and 2) The size of each initial ranging grant is an integer multiple of "Contention Ranging Request Opportunity Size".
Test strategy	1) Check the value of Ranging Request Opportunity Size in the UCD. 2) Check the time between initial ranging grants provided by the IUT. 3) Assign PASS if the time between initial ranging grants is lower than the maximum value of Initial Ranging Interval and the size of each initial ranging grant is an integer multiple of "Ranging Request Opportunity Size".
Notes	

TP ID	TP/BS/RLC/IRNG/BV-H010
IEEE 802.16 Reference	clause 6.3.9.6 Figure "Initial Ranging - SS (part 2)"
PICS Item	
Initial Condition	IUT is operating, has received a valid initial RNG-REQ on CID = 0, and has transmitted a RNG-RSP (continue) on CID=0.
Expected Behaviour	Check that: On receiving an identical initial RNG-REQ on CID = 0, the IUT retransmits the RNG-RSP (continue) message containing transmission parameter adjustments on CID = 0.
Test strategy	Straightforward.
Notes	

TP ID	TP/BS/RLC/IRNG/BV-H011
	Deleted

TP ID	TP/BS/RLC/IRNG/BV-H012
IEEE 802.16 Reference	clause 6.3.9.6
PICS Item	
Initial Condition	IUT is operating and has started Polled Initial Ranging.
Expected Behaviour	Check that: On receiving a RNG-REQ requesting change of DL PHY Mode to another allowed mode, the IUT sends a RNG-RSP confirming the change.
Test strategy	
Notes	

TP ID	TP/BS/RLC/IRNG/BV-H013
IEEE 802.16 Reference	clause 6.3.9.6
PICS Item	
Initial Condition	IUT is operating and has started Polled Initial Ranging.
Expected Behaviour	Check that: On receiving a RNG-REQ requesting change of DL PHY Mode to another not allowed mode, the IUT sends a RNG-RSP message continuing the original PHY mode.
Test strategy	
Notes	

TP ID	TP/BS/RLC/IRNG/BV-H014
IEEE 802.16 Reference	clause 6.3.9.6
PICS Item	
Initial Condition	IUT is operating and in Initial Ranging for an SS.
Expected Behaviour	Check that: On receiving a RNG-REQ message for an SS that operates on a wrong channel, the IUT sends a RNG-RSP message with status = abort specifying the new downlink frequency.
Test strategy	
Notes	

TP ID	TP/BS/RLC/IRNG/BI-H000
IEEE 802.16 Reference	clause 6.3.9.6
PICS Item	
Initial Condition	IUT is operating and in Initial Ranging for an SS.
Expected Behaviour	Check that: On receiving an improperly formatted RNG-REQ message, the IUT does not send RNG-RSP and continues operation.
Test strategy	
Notes	

TP ID	TP/BS/RLC/IRNG/BI-H001
IEEE 802.16 Reference	clause 6.3.9.6
PICS Item	
Initial Condition	IUT is operating and has started Polled Initial Ranging.
Expected Behaviour	Check that: On receiving an improperly formatted RNG-REQ message, the IUT does not send a RNG-RSP and continues operation.
Test strategy	
Notes	

TP ID	TP/BS/RLC/IRNG/BI-H002
IEEE 802.16 Reference	clause 6.3.9.6
PICS Item	
Initial Condition	IUT is operating and in Initial Ranging for an SS.
Expected Behaviour	Check that: On receiving a RNG-REQ message with an incorrect CID in the allocated slot, the IUT does not send a RNG-RSP.
Test strategy	
Notes	

TP ID	TP/BS/RLC/IRNG/BI-H003
IEEE 802.16 Reference	clause 6.3.9.6
PICS Item	
Initial Condition	IUT is operating and in Initial Ranging for an SS. The IUT has received a subchannelized network entry signal. The IUT has then sent a Subchannelized Network Entry IE in UL-MAP IE to accomplish allocation.
Expected Behaviour	Check that: On receiving a RNG-REQ at SS minimum power, the IUT does not send RNG-RSP.
Test strategy	
Notes	

TP-ID	TP/BS/RLC/IRNG/BI-H004
IEEE 802.16 Reference	Table "MAC Management messages"
PICS Item	
Initial Condition	The IUT is ranging.
Expected Behaviour	Check that: On receiving a RNG-REQ message on a connection other than an Initial ranging or Basic CID, the IUT ignores the RNG-REQ and does not send a RNG-RSP.
Test strategy	
Notes	

TP ID	TP/BS/RLC/IRNG/BO-H000
IEEE 802.16 Reference	clause 6.3.9.6
PICS Item	
Initial Condition	IUT is operating and has started Polled Initial Ranging.
Expected Behaviour	Check that: On receiving a RNG-REQ message in the Initial Maintenance slot, the IUT does not send RNG-RSP and continues operation.
Test strategy	
Notes	

TP ID	TP/BS/RLC/IRNG/BO-H001
IEEE 802.16 Reference	clause 6.3.9.6
PICS Item	
Initial Condition	IUT is operating and has allocated Data Grant IEs.
Expected Behaviour	Check that: On receiving a RNG-REQ message in a Data Grant interval, the IUT either ignores the message or uses the requested DL PHY Mode.
Test strategy	
Notes	

TP ID	TP/BS/RLC/IRNG/TI-H000
IEEE 802.16 Reference	clauses 6.3.9.5.1 and 6.3.9.6 Figure "Initial Ranging, Polled Phase-BS" clause 10.1 "Invited Ranging Retries"
PICS Item	
Initial Condition	IUT is operating and has started Polled Initial Ranging.
Expected Behaviour	Check that: On sending "Invited Ranging Retries" Initial Ranging intervals on the Basic CID (polled ranging) and having received no RNG-REQ to any of the polled ranging opportunities, the IUT transmits a RNG-RSP (abort).
Test strategy	1) TE sends initial RNG-REQ on CID=0 in an Initial Ranging Interval with transmission power sufficient for IUT to decode RNG-REQ but requiring a RNG-RSP(continue) from IUT, not a RNG-RSP(success). 2) IUT sends RNG-RSP(continue) with power adjustments. 3) TE remains silent and does not respond to any of the Polled Initial ranging opportunities. 4) Assign PASS verdict if IUT sends RNG-RSP(abort) after it sends "Invited Ranging Retries" Initial Ranging intervals.
Notes	

TP ID	TP/BS/RLC/IRNG/TI-H001
IEEE 802.16 Reference	clauses 6.3.9.5.1 and 6.3.9.6 Figure "Initial Ranging, Polled Phase-BS" clause 10.1 "Invited Ranging Retries"
PICS Item	
Initial Condition	IUT is operating and has started Polled Initial Ranging
Expected Behaviour	Check that: After "Invited Ranging Retries" repetitions of sending Initial Ranging intervals on the Basic CID (polled ranging) of receiving a RNG-REQ requiring power corrections for each of the polled ranging opportunities and sending a RNG-RSP(continue), the IUT transmits a RNG-RSP(abort).
Test strategy	1) TE sends initial RNG-REQ on CID=0 in an Initial Ranging Interval with transmission power sufficient for IUT to decode RNG-REQ but requiring a RNG-RSP(continue) from IUT, not a RNG-RSP(success). 2) For Invited Ranging Retries, loop through the following: - IUT transmits polled Initial Ranging interval on TE's Basic CID. - TE transmits RNG-REQ at transmission characteristics forcing IUT to transmit RNG-RSP (continue). - IUT sends RNG-RSP(continue) with power adjustments. 3) IUT sends one more polled Initial Ranging opportunity on TE's Basic CID. 4) TE transmits one more RNG-REQ at transmission characteristics forcing IUT to transmit RNG-RSP (continue). 5) Assign PASS verdict if IUT sends RNG-RSP(abort).
Notes	

TP ID	TP/BS/RLC/IRNG/TI-H002
IEEE 802.16 Reference	clause 6.3.9.6
PICS Item	
Initial Condition	IUT is operating and is waiting for a SBC-REQ message
Expected Behaviour	Check that: After expiry of timer T9, the IUT releases and ages out Basic and Primary Management CIDs.
Test strategy	
Notes	

5.2.2.2   Periodic Ranging (PRNG)

TP ID	TP/BS/RLC/PRNG/BV-H000
IEEE 802.16 Reference	
PICS Item	
Initial Condition	IUT is operating and an UL service flow is established.
Expected Behaviour	Check that: On receiving UL transmissions that require timing offset adjustment, the IUT transmits an unsolicited RNG-RSP (Continue) or RNG-RSP (Success) message with timing offset adjustment parameters.
Test strategy	
Notes	

TP ID	TP/BS/RLC/PRNG/BV-H001
IEEE 802.16 Reference	
PICS Item	
Initial Condition	IUT is operating and an UL service flow is established.
Expected Behaviour	Check that: On receiving UL transmissions that require a power adjustment, the IUT performs one of the actions below: - either transmit RNG-RSP (Continue) message with power adjustment parameters, or - transmit RNG-RSP (Success) message with power adjustment parameters, or - transmit FPC message with power adjustment parameters, or - transmit Power Control IE with power adjustment parameters, or - change to a more robust PHY Mode.
Test strategy	
Notes	

TP ID	TP/BS/RLC/PRNG/BV-H002
	Deleted

TP ID	TP/BS/RLC/PRNG/BV-H003
IEEE 802.16 Reference	
PICS Item	
Initial Condition	IUT is operating. An UL service flow is established. The IUT is adjusting power during periodic ranging by iterating RNG-RSP (Continue) messages.
Expected Behaviour	Check that: On receiving UL transmissions that no longer require a RNG-RSP (Continue) message to adjust power, the IUT transmits: - either a RNG-RSP (Success) message with or without adjustments, or - a Power Control IE, or - an FPC.
Test strategy	
Notes	Omit from all waves of certification program. The TP may get deleted altogether.

TP ID	TP/BS/RLC/PRNG/BV-H004
IEEE 802.16 Reference	
PICS Item	
Initial Condition	IUT is operating, an UL service flow is established with data flow. A timing adjustment for the UL is required.
Expected Behaviour	Check that: The IUT terminates the timing adjustment by transmitting a RNG-RSP(Success) with or without adjustments.
Test strategy	
Notes	

TP ID	TP/BS/RLC/PRNG/BV-H005
IEEE 802.16 Reference	clause 6.3.10.1
PICS Item	
Initial Condition	IUT is operating and a DL service flow is established.
Expected Behaviour	Check that: On receiving a DBPC-REQ message on the Basic CID to change the DL transmission to a less robust burst profile, the IUT transmits a DBPCRSP.
Test strategy	
Notes	

TP ID	TP/BS/RLC/PRNG/BV-H006
IEEE 802.16 Reference	
PICS Item	
Initial Condition	IUT is operating and a UL service flow is established.
Expected Behaviour	Check that: On detecting a threshold crossing for UL PHY Mode, the IUT transmits a RNG-RSP message to change the UL PHY mode.
Test strategy	
Notes	Threshold may be CINR.

TP ID	TP/BS/RLC/PRNG/BV-H007
IEEE 802.16 Reference	Figure Periodic Ranging receiver processing - BS Table: Parameters and constants; "Ranging Correction Retries"
PICS Item	
Initial Condition	IUT is operating and a service flow is established. It has started ranging corrections.
Expected Behaviour	Check that: After transmitting RNG-RSP(continue) for more than Ranging Correction Retries, the IUT removes the SS from management and sends a RNG-RSP with Ranging Status set to Abort.
Test strategy	

Notes	IUT can correct ranging using any combination in any number of the following:
	  - PHY Mode change.
	  - RNG-RSP(success).
	  - RNG-RSP(continue).
	  - FPC.
	  - Power Control IE.
	This TP only requires the counting number of times RNG-RSP(continue) is sent. The other methods for ranging correction are not counted when received.
	To be defined in the PIXIT how to set the BS to send/show RSP is complete.

TP ID	TP/BS/RLC/PRNG/BV-H011
IEEE 802.16 Reference	
PICS Item	
Initial Condition	IUT is operating and a service flow is established. The IUT is correcting ranging.

Expected Behaviour	Check that: On receipt of a signal with satisfactory power, the IUT sends either:
	  - a RNG-RSP with the Ranging Status set to success, or
	  - an FPC, or
	  - a Power Control IE.

Test strategy	
Notes	The satisfactory power parameters are included in PIXIT parameters. The equipment manufacturer provides these parameters for its device. These parameters can vary for individual devices.

TP ID	TP/BS/RLC/PRNG/BV-H012
IEEE 802.16 Reference	
PICS Item	
Initial Condition	IUT is operating and a service flow is established. The IUT is correcting ranging.

Expected Behaviour	Check that the IUT: On receipt of a signal that is unsatisfactory, the IUT performs one of the actions below:
	  - either transmit RNG-RSP (Continue) message with power adjustment parameters, or
	  - transmit RNG-RSP (Success) message with power adjustment parameters, or
	  - transmit FPC message with power adjustment parameters, or
	  - transmit Power Control IE with power adjustment parameters, or
	  - change to a more robust PHY Mode.

Test strategy	
Notes	

TP ID	TP/BS/RLC/PRNG/BI-H000
IEEE 802.16 Reference	
PICS Item	
Initial Condition	IUT is operating and a service flow is established.
Expected Behaviour	Check that: On receipt of an invalid RNG-REQ, the IUT ignores the message.
Test strategy	
Notes	

5.2.2.3   Downlink Burst Profile Management (DBPC)

TP ID	TP/BS/RLC/DBPC/BV-H000
IEEE 802.16 Reference	clause 6.3.2.3.21
PICS item	
Initial Condition	IUT has terminated Network entry procedures has transmitted a Basic CID allocation grant.
Expected Behaviour	Check that: On receiving a DBPC-REQ on the Basic CID, to refuse this request the IUT transmits a DBPC-RSP with the DIUC parameter unchanged from that before the received DBPC-REQ and continues transmitting at the same DIUC profile.
Test strategy	
Notes	Requires a means to provoke the IUT to refuse the DBPC-REQ.

TP-ID	TP/BS/RLC/DBPC/BI-H000
IEEE 802.16 Reference	clause 6.3.2.3.21
PICS Item	
Initial Condition	The IUT using DIUC n is operating with an SS.
Expected Behaviour	Check that: On receiving a DBPC-REQ for a DIUC that is not indicated in the UCD message, the IUT sends a DBPC-RSP indicating the DIUC in use.
Test strategy	
Notes	

TP-ID	TP/BS/RLC/DBPC/BI-H001
IEEE 802.16 Reference	clause 6.3.2.3.20
PICS Item	
Initial Condition	The IUT using DIUC n is operating with an SS.
Expected Behaviour	Check that: On receiving A DBPC-REQ in an invalid format, the IUT ignores the message.
Test strategy	
Notes	

5.2.2.3.1   To a Less Robust Profile (LRP)

TP ID	TP/BS/RLC/DBPC/LRP/BV-H000
IEEE 802.16 Reference	clause 6.3.10.1 Figure "Transition to a less robust burst profile"
PICS item	
Initial Condition	IUT has terminated Network entry procedures and has received a DBPC-REQ on the Basic CID for a less robust burst profile.
Expected Behaviour	Check that: On receiving the DBPC-REQ and to accept the request, the IUT immediately stops transmitting DL data, transmits the DBPC-RSP accepting the request, and then begins transmitting DL data on the weaker DIUC.
Test strategy	
Notes	

TP-ID	TP/BS/RLC/DBPC/LRP/BV-H001
IEEE 802.16 Reference	clause 6.3.10.1 Figure "Transition to a less robust burst profile"
PICS Item	
Initial Condition	The IUT using DIUC n is operating with an SS.
Expected Behaviour	Check that: On receiving a DBPC-REQ indicating a less robust profile and when the SS is no longer authorized for this profile, the IUT sends a DBPC-RSP indicating the profile currently in use.
Test strategy	
Notes	

5.2.2.3.2   To a More Robust Profile (MRP)

TP ID	TP/BS/RLC/DBPC/MRP/BV-H000
IEEE 802.16 Reference	clause 6.3.10.1 Figure "Transition to a more robust burst profile"
PICS item	
Initial Condition	IUT has terminated Network entry procedures.
Expected Behaviour	Check that: On receiving a DBPC-REQ on the Basic CID for a more robust burst profile, to accept the request the IUT immediately begins transmitting DL data using the new burst profile and transmits a valid DBPC-RSP.
Test strategy	
Notes	

TP ID	TP/BS/RLC/DBPC/MRP/BV-H001
IEEE 802.16 Reference	clause 6.3.10.1 Figure "Transition to a more robust burst profile"
PICS item	
Initial Condition	IUT has terminated Network entry procedures.
Expected Behaviour	Check that: On receiving a RNG-REQ in an Initial Ranging Interval, to accept the request the IUT immediately begins transmitting DL data using the new burst profile and transmits a valid RNG-RSP.
Test strategy	
Notes	

5.2.2.4   Negotiate Basic Capabilities (SBC)

TP ID	TP/BS/RLC/SBC/BV-H000
IEEE 802.16 Reference	clause 6.3.9.7
PICS Item	
Initial Condition	IUT is initializing and has just completed Initial Ranging.
Expected Behaviour	Check that: On receiving an SBC-REQ message on the Basic CID, the IUT transmits an SBC-RSP with the intersection of the IUTs and SS's capabilities set to "on".
Test strategy	Straightforward
Notes	

TP ID	TP/BS/RLC/SBC/BV-H001
IEEE 802.16 Reference	clause 6.3.9.7
PICS Item	
Initial Condition	IUT is initializing has received an SBC-REQ message and has sent the SBC-RSP message.
Expected Behaviour	Check that: On receiving another SBC-REQ message on the Basic CID, the IUT transmits an SBC-RSP.
Test strategy	
Notes	

TP ID	TP/BS/RLC/SBC/BI-H000
IEEE 802.16 Reference	clause 6.3.9.7
PICS Item	
Initial Condition	IUT is initializing and has just completed Initial Ranging.
Expected Behaviour	Check that: On receiving an invalid SBC-REQ message on the Basic CID, the IUT silently discards the received message and continues operation.
Test strategy	
Notes	

TP-ID	TP/BS/RLC/SBC/BI-H001
IEEE 802.16 Reference	Table "MAC Management messages"
PICS Item	
Initial Condition	Initial Ranging has been completed.
Expected Behaviour	Check that: On receiving an SBC-REQ message on a connection other than Basic CID, the IUT ignores the SBC-REQ message and does not send an SBC-RSP.
Test strategy	
Notes	

5.2.3 Registration, IP Connectivity, and Parameter Transfer (INI)

5.2.3.1 Registration (REG)

TP ID	TP/BS/INI/REG/BV-H000
IEEE 802.16 Reference	clause 6.3.9.9
PICS Item	
Initial Condition	IUT is operating and is waiting for a REG-REQ message.
Expected Behaviour	Check that: On receiving a REG-REQ, the IUT verifies the HMAC digest and generates a Secondary Management CID, determines which capabilities are enabled based on implemented options and policy, and sends a REG-RSP, the Primary CID, the Secondary Management CID, the HMAC tuple, and the Response set to OK.
Test strategy	
Notes	

TP ID	TP/BS/INI/REG/BV-H001
IEEE 802.16 Reference	clause 6.3.9.9
PICS Item	
Initial Condition	IUT is operating and is waiting for a REG-REQ message.
Expected Behaviour	Check that: On receiving a REG-REQ with an ARQ Support TLV, to confirm the ARQ Support the IUT transmits a REG-RSP with ARQ Support parameters.
Test strategy	
Notes	

TP ID	TP/BS/INI/REG/BV-H002
IEEE 802.16 Reference	clause 6.3.9.9
PICS Item	
Initial Condition	IUT is operating and is waiting for a REG-REQ message.
Expected Behaviour	Check that: On receiving a REG-REQ from a managed SS containing the IP Version, the IUT sends a REG-RSP containing the IP Version to be used on the Secondary Management Connection.
Test strategy	
Notes	

TP ID	TP/BS/INI/REG/BV-H003
IEEE 802.16 Reference	clause 6.3.9.9
PICS Item	
Initial Condition	IUT is operating and is waiting for a REG-REQ message
Expected Behaviour	Check that: On receiving a REG-REQ containing the SS Capabilities, the IUT sends a REG-RSP containing the SS Capabilities in order to indicate which are supported and to be used.
Test strategy	
Notes	

TP ID	TP/BS/INI/REG/BV-H004
IEEE 802.16 Reference	clause 6.3.9.9
PICS Item	
Initial Condition	IUT is operating and is waiting for a REG-REQ message.
Expected Behaviour	Check that: On receiving a REG-REQ containing the SS Capabilities with unrecognizable/unsupported capabilities, the IUT sends a REG-RSP containing the unrecognizable/unsupported SS Capabilities set to off.
Test strategy	
Notes	

TP ID	TP/BS/INI/REG/BV-H005
IEEE 802.16 Reference	clause 6.3.9.9
PICS Item	
Initial Condition	IUT is operating, has received a REG-REQ message, has sent a REG-RSP message but has not received TFTP-CPLT message.
Expected Behaviour	Check that: On receiving a new REG-REQ, the IUT verifies the HMAC digest, generates the Secondary Management CID, determines which capabilities are enabled based on implemented options and policy, and sends a REG-RSP.
Test strategy	
Notes	

TP ID	TP/BS/INI/REG/BI-H000
IEEE 802.16 Reference	clause 6.3.9.9
PICS Item	
Initial Condition	IUT is operating and is waiting for a REG-REQ message.
Expected Behaviour	Check that: On receiving a REG-REQ containing an invalid HMAC, the IUT sends a REG-RSP containing the Response set to "Message authentication failure".
Test strategy	
Notes	

TP ID	TP/BS/INI/REG/BI-H001
IEEE 802.16 Reference	clause 6.3.9.9
PICS Item	
Initial Condition	IUT is operating and is waiting for a REG-REQ message.
Expected Behaviour	Check that: On receiving an invalid but correctly authenticated REG-REQ, the IUT silently discards the received message and continues operation.
Test strategy	
Notes	

TP ID	TP/BS/INI/REG/BO-H000
IEEE 802.16 Reference	clause 6.3.9.9
PICS Item	
Initial Condition	IUT is operating and has sent a TFTP-CPLT message.
Expected Behaviour	Check that: On receiving a REG-REQ, the IUT silently discards the received message and continues operation.
Test strategy	
Notes	

TP ID	TP/BS/INI/REG/BO-H001
IEEE 802.16 Reference	clause 6.3.9.9
PICS Item	
Initial Condition	IUT is operating and is in Authentication and Authorization phase.
Expected Behaviour	Check that: On receiving a REG-REQ, the IUT silently discards the received message and continues operation.
Test strategy	
Notes	

TP ID	TP/BS/INI/REG/TI-H000
IEEE 802.16 Reference	clause 6.3.9.9
PICS Item	
Initial Condition	IUT is operating and is waiting for a REG-REQ message.
Expected Behaviour	Check that: After expiry of timer T17, the IUT releases and ages out Basic and Primary Management CIDs.
Test strategy	
Notes	

5.2.3.2   IP Connectivity (IPC)

TP ID	TP/BS/INI/IPC/BV-H000
IEEE 802.16 Reference	clause 6.3.9.10
PICS Item	
Initial Condition	IUT has authorized and registered a managed SS.
Expected Behaviour	Check that: On receiving a DHCP-DISCOVER on the Secondary Management Connection, the IUT correctly implements DHCP server functionality .
Test strategy	
Notes	

TP ID	TP/BS/INI/IPC/BV-H001
IEEE 802.16 Reference	clause 6.3.9.11
PICS Item	
Initial Condition	IUT has authorized and registered a managed SS. The SS has obtained its IP address.
Expected Behaviour	Check that: On receiving a Time Of Day request on the Secondary Management Connection, the IUT correctly implements the Time Protocol server functionality.
Test strategy	
Notes	

TP ID	TP/BS/INI/IPC/BV-H002
IEEE 802.16 Reference	clause 6.3.9.12
PICS Item	
Initial Condition	IUT has authorized and a managed SS. The SS has obtained its IP address and the time of the day.
Expected Behaviour	Check that: On initiation of a TFTP for the download of the SS configuration file on the Secondary Management Connection, the IUT correctly implements TFTP server functionality.
Test strategy	
Notes	

TP ID	TP/BS/INI/IPC/BV-H003
IEEE 802.16 Reference	clause 6.3.9.12
PICS Item	
Initial Condition	IUT has authorized and registered a managed SS. The TFTP transaction has started.
Expected Behaviour	Check that: On receiving a TFTP-CPLT message, the IUT sends a TFTP-RSP with the associated Primary CID.
Test strategy	
Notes	

TP ID	TP/BS/INI/IPC/BI-H000
IEEE 802.16 Reference	clause 6.3.9.12
PICS Item	
Initial Condition	IUT has authorized and registered a managed SS. The TFTP transaction has started.
Expected Behaviour	Check that: On receiving an invalid TFTP-CPLT message, the IUT silently discards the received message.
Test strategy	
Notes	

TP ID	TP/BS/INI/IPC/BO-H000
IEEE 802.16 Reference	clause 6.3.9.12
PICS Item	
Initial Condition	IUT has terminated Network entry procedures and in normal operation.
Expected Behaviour	Check that: On receiving a TFTP-CPLT message, the IUT silently discards the received message.
Test strategy	
Notes	

TP ID	TP/BS/INI/IPC/BO-H001
IEEE 802.16 Reference	clause 6.3.9.12
PICS Item	
Initial Condition	IUT has terminated Network entry procedures and in normal operation.
Expected Behaviour	Check that: On receiving a TFTP-CPLT message from a non existing SS, the IUT silently discards the received message.
Test strategy	
Notes	

TP ID	TP/BS/INI/IPC/TI-H000
IEEE 802.16 Reference	clause 6.3.9.12
PICS Item	
Initial Condition	IUT has authorized, registered, and started T13 for a managed SS.
Expected Behaviour	Check that: On timer T13 expiry, the IUT de-assigns the management SS CIDs.
Test strategy	
Notes	

TP ID	TP/BS/INI/IPC/TI-H001
IEEE 802.16 Reference	clause 6.3.9.12
PICS Item	
Initial Condition	IUT has authorized, registered, and started T13 for a managed SS.
Expected Behaviour	Check that: After the expiry of timer T13, on receiving a TFTP-CPLT the IUT does not send a TFTP-RSP.
Test strategy	
Notes	

5.2.4   Privacy and Key Management (PKM)

5.2.4.1   Authentication/Authorization (AUTH)

5.2.4.1.1   Initialization (INIT)

TP ID	TP/BS/PKM/AUTH/INIT/BV-H000
IEEE 802.16 Reference	clauses 7.2.1 and 7.2.4.1
PICS Item	
Initial Condition	IUT is initializing an SS. Basic Capabilities Negotiation is completed. Static SAs are provisioned. The IUT receives a valid Auth Info message and then a valid Auth Request message.
Expected Behaviour	Check that: The IUT transmits a valid Auth Reply message with a SA whose SAID is identical to the Basic CID in the Auth Request message, a SA for each provisioned static SA and the encrypted AK.
Test strategy	
Notes	

TP ID	TP/BS/PKM/AUTH/INIT/BV-H001
IEEE 802.16 Reference	clauses 7.2.1 and 7.2.4.1
PICS Item	
Initial Condition	IUT is initializing an SS. Basic Capabilities Negotiation is completed. No Static SAs are provisioned. The IUT receives a valid Auth Info message and then a valid Auth Request message.
Expected Behaviour	Check that: The IUT transmits a valid Auth Reply message with a SA whose SAID is identical to the Basic CID in the Auth Request message and the encrypted AK.
Test strategy	
Notes	

TP ID	TP/BS/PKM/AUTH/INIT/BV-H002
IEEE 802.16 Reference	clause 7.2.1
PICS Item	
Initial Condition	Negotiating Basic Capabilities is complete. IUT is provisioned to authorize basic unicast services.
Expected Behaviour	Check that: The IUT determines if the requesting SS is authorized for basic unicast services and initialize the SA descriptor list of the Auth Reply message accordingly, i.e that the basic CID is the first entry.
Test strategy	
Notes	

TP ID	TP/BS/PKM/AUTH/INIT/BV-H003
IEEE 802.16 Reference	clause 7.2.3
PICS Item	
Initial Condition	Negotiating Basic Capabilities is completed. The IUT has received an Auth Request with a list of cryptographic suites, all of which the IUT does not support.
Expected Behaviour	Check that: The IUT transmits an Auth Reject.
Test strategy	
Notes	

TP ID	TP/BS/PKM/AUTH/INIT/BV-H004
IEEE 802.16 Reference	clause 7.1.3
PICS Item	
Initial Condition	Negotiating Basic Capabilities is complete. The IUT receives a request use to a Security Association for which it is not authorized.
Expected Behaviour	Check that: The IUT provides only authorized Security Associations.
Test strategy	
Notes	

TP ID	TP/BS/PKM/AUTH/INIT/BV-H005
	Deleted

TP ID	TP/BS/PKM/AUTH/INIT/BV-H006
IEEE 802.16 Reference	clauses 7.2.1 and 7.2.4.1
PICS Item	
Initial Condition	The IUT has terminated Network entry procedures. SS authorization is revoked.
Expected Behaviour	Check that: The IUT transmits an Auth Invalid.
Test strategy	
Notes	Requires a means to revoke SS authorization.

TP ID	TP/BS/PKM/AUTH/INIT/BV-H007
IEEE 802.16 Reference	clauses 7.2.1 and 7.2.4.1
PICS Item	
Initial Condition	The IUT has terminated Network entry procedures. The IUT receives an Auth Request containing SS's user certificate.
Expected Behaviour	Check that: The IUT transmits an Auth Reply containing 1 024 bit RSA public-key encrypted AKs using SS's public key.
Test strategy	
Notes	

TP ID	TP/BS/PKM/AUTH/INIT/BV-H008
IEEE 802.16 Reference	clause 7.4.1.2
PICS Item	
Initial Condition	The IUT has terminated Network entry procedures. The IUT receives an Auth Request when a single AK is active.
Expected Behaviour	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.
Test strategy	
Notes	

TP ID	TP/BS/PKM/AUTH/INIT/BV-H009
IEEE 802.16 Reference	clauses 7.4.1.3 and 7.5.4.3
PICS Item	
Initial Condition	The IUT has terminated Network entry procedures. One AK is active for the IUT.
Expected Behaviour	Check that: For receiving the following messages: DSx-REQ, DSx-RSP, DSx-ACK, REG-REQ, and TFTP-CPLT. 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.
Test strategy	
Notes	

TP ID	TP/BS/PKM/AUTH/INIT/BV-H010
IEEE 802.16 Reference	clause 6.3.2.3.9
PICS Item	
Initial Condition	IUT has terminated Network entry procedures.
Expected Behaviour	Check that: On receiving a PKM-REQ MAC message with an invalid PKM packet type code, the IUT does nothing and remains in the same state.
Test strategy	
Notes	

TP ID	TP/BS/PKM/AUTH/INIT/BV-H011
IEEE 802.16 Reference	clause 6.3.2.3.9
PICS Item	
Initial Condition	IUT has terminated Network entry procedures.
Expected Behaviour	Check that: On receiving PKM-REQ message, the IUT transmits a PKM-RSP message with the Identifier field equal to the Identifier of the PKM-REQ message.
Test strategy	
Notes	

TP ID	TP/BS/PKM/AUTH/INIT/BV-H012
IEEE 802.16 Reference	clause 6.3.2.3.9
PICS Item	
Initial Condition	IUT has terminated Network entry procedures.
Expected Behaviour	Check that: On transmitting a TEK Invalid message that is not a response to a PKM-REQ message, the IUT sets the Identifier field to 0.
Test strategy	
Notes	

TP ID	TP/BS/PKM/AUTH/INIT/BV-H013
IEEE 802.16 Reference	clause 6.3.2.3.9
PICS Item	
Initial Condition	IUT has terminated Network entry procedures.
Expected Behaviour	Check that: When generating an unsolicited Auth Invalid message, the IUT sets the Identifier field to 0.
Test strategy	
Notes	

TP ID	TP/BS/PKM/AUTH/INIT/BV-H014
IEEE 802.16 Reference	clause 6.3.2.3.9
PICS Item	
Initial Condition	IUT has terminated Network entry procedures.
Expected Behaviour	Check that: Given that different ordering of PKM-REQ message attributes and that the HMAC-Digest attribute, if any, is correctly placed, the IUT correctly processes the PKM-REQ.
Test strategy	
Notes	

TP ID	TP/BS/PKM/AUTH/INIT/BV-H015
IEEE 802.16 Reference	clauses 6.3.2.3.9 and 11.9
PICS Item	
Initial Condition	IUT has negotiated basic capabilities and SS authorization and key exchange has started.
Expected Behaviour	Check that: On receiving a PKM_REQ message with unknown attributes, the IUT ignores the unknown attributes and recognizes the valid attributes.
Test strategy	
Notes	

TP ID	TP/BS/PKM/AUTH/INIT/BV-H016
IEEE 802.16 Reference	clause 6.3.2.3.9
PICS Item	
Initial Condition	IUT has negotiated basic capabilities and SS authorization and key exchange has started.
Expected Behaviour	Check that: On receiving a PKM_REQ message with missing required attributes, the IUT does not transmit a message and stays in the same state.
Test strategy	
Notes	

TP ID	TP/BS/PKM/AUTH/INIT/BI-H000
IEEE 802.16 Reference	clause 7.2.1 Figure "Authorization state machine flow diagram" Table "Authorization FSM state transition matrix" clause 11.9.10
PICS Item	
Initial Condition	IUT has negotiated basic capabilities. The IUT receives a valid Auth Info message.
Expected Behaviour	Check that: On receiving an Auth Request containing incorrect ASN.1 DER encoding, the IUT transmits an Auth Reject message with the error code set to Permanent Authorization Failure.
Test strategy	
Notes	BS may transmit No Information in error-code.

TP ID	TP/BS/PKM/AUTH/INIT/BI-H001
IEEE 802.16 Reference	clause 7.2.1 Figure "Authorization state machine flow diagram" Table "Authorization FSM state transition matrix" clause 11.9.10
PICS Item	
Initial Condition	IUT has terminated Network entry procedures. The IUT receives a valid Auth Info message.
Expected Behaviour	Check that: On receiving an Auth Request containing an SS certificate with an invalid signature, the IUT transmits an Auth Reject message with the error code set to Permanent Authorization Failure.
Test strategy	
Notes	BS may transmit No Information in error-code. Cover with a configuration parameter.

TP ID	TP/BS/PKM/AUTH/INIT/BI-H002
IEEE 802.16 Reference	clause 7.2.1 Figure "Authorization state machine flow diagram" Table "Authorization FSM state transition matrix" clause 11.9.10
PICS Item	
Initial Condition	IUT has terminated Network entry procedures. The IUT receives a valid Auth Info message.
Expected Behaviour	Check that: On receiving an Auth Request containing incompatible Security Capabilities, the IUT transmits an Auth Reject message with the error code set to Permanent Authorization Failure.
Test strategy	
Notes	BS may transmit No Information in error-code. Cover with a configuration parameter.

TP ID	TP/BS/PKM/AUTH/INIT/BI-H003
IEEE 802.16 Reference	clause 7.2.1 Figure "Authorization state machine flow diagram" Table "Authorization FSM state transition matrix" clause 11.9.10
PICS Item	
Initial Condition	IUT has terminated Network entry procedures. The IUT receives a valid Auth Info message.
Expected Behaviour	Check that: On receiving an Auth Request containing an SS certificate on the "hot" list, the IUT transmits an Auth Reject message with the error code set to Permanent Authorization Failure.
Test strategy	
Notes	BS may transmit No Information in error-code. Cover with a configuration parameter.

TP ID	TP/BS/PKM/AUTH/INIT/BI-H004
IEEE 802.16 Reference	clause 7.2.1 Figure "Authorization state machine flow diagram" Table "Authorization FSM state transition matrix" clause 11.9.10
PICS Item	
Initial Condition	IUT has terminated Network entry procedures. The IUT receives a valid Auth Info message.
Expected Behaviour	Check that: On receiving an Auth Request containing an SS certificate from an unknown manufacturer, the IUT transmits an Auth Reject message with the error code set to Permanent Authorization Failure.
Test strategy	
Notes	BS may transmit No Information in error-code. Cover with a configuration parameter.

TP ID	TP/BS/PKM/AUTH/INIT/BI-H005
IEEE 802.16 Reference	clause 7.2.1 Figure "Authorization state machine flow diagram" Table "Authorization FSM state transition matrix" clause 11.9.10
PICS Item	
Initial Condition	IUT has terminated Network entry procedures. The IUT receives a valid Auth Info message.
Expected Behaviour	Check that: On receiving an Auth Request containing an SS certificate inconsistencies between the certificate data and in accompanying PKM attributes data, the IUT transmits an Auth Reject message with the error code set to Permanent Authorization Failure.
Test strategy	
Notes	BS may transmit No Information in error-code. Cover with a configuration parameter.

TP ID	TP/BS/PKM/AUTH/INIT/BI-H006
IEEE 802.16 Reference	clause 7.2.1 Figure "Authorization state machine flow diagram" Table "Authorization FSM state transition matrix" clause 11.9.10
PICS Item	
Initial Condition	IUT has terminated Network entry procedures.
Expected Behaviour	Check that: On receiving an Auth Info message and then an Auth Request message for an SS not authorized for basic unicast service. The IUT transmits an Auth Reject message with the error code set either to No Information or Unauthorized SS.
Test strategy	
Notes	

TP ID	TP/BS/PKM/AUTH/INIT/BI-H007
IEEE 802.16 Reference	clause 7.2.1 Figure "Authorization state machine flow diagram" Table "Authorization FSM state transition matrix" clause 11.9.10
PICS Item	
Initial Condition	IUT has terminated Network entry procedures. The IUT has received an Auth Info message.
Expected Behaviour	Check that: On receiving an Auth Request containing an SAID that is different from that previously sent on the Basic CID, the IUT transmits an Auth Reject message with the error code set either to No Information or Unauthorized SAID.
Test strategy	
Notes	

TP ID	TP/BS/PKM/AUTH/INIT/BI-H008
IEEE 802.16 Reference	clause 7.2.1 Figure "Authorization state machine flow diagram" Table "Authorization FSM state transition matrix" clause 11.9.10
PICS Item	
Initial Condition	IUT has terminated Network entry procedures.
Expected Behaviour	Check that: On receiving an Auth Request containing an SAID that is different from that previously sent on the Basic CID, the IUT transmits an Auth Reject message with the error code set either to No Information or Unauthorized SAID.
Test strategy	
Notes	

5.2.4.1.2 OPeratioNal (OPN)

TP ID	TP/BS/PKM/AUTH/OPN/BV-H000
IEEE 802.16 Reference	clauses 7.4.1.3 and 7.5.4.3
PICS Item	
Initial Condition	The IUT has terminated Network entry procedures. Two AKs are active for the IUT.
Expected Behaviour	Check that: 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, 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.
Test strategy	
Notes	

TP ID	TP/BS/PKM/AUTH/OPN/BV-H001
IEEE 802.16 Reference	clauses 7.4.1.3 and 7.5.4.3
PICS Item	
Initial Condition	The IUT has terminated Network entry procedures. Two AKs are active for the IUT.
Expected Behaviour	Check that: For receiving any management message containing a HMAC tuple with the newer AK Sequence Number in the tuple, 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).
Test strategy	
Notes	

TP ID	TP/BS/PKM/AUTH/OPN/BV-H002
IEEE 802.16 Reference	clauses 7.4.1.3 and 7.5.4.3
PICS Item	
Initial Condition	The IUT has terminated Network entry procedures. One AK is active for the IUT. The IUT has received a valid Auth Request message in response to which the IUT transmitted a valid Auth Reply message with a new AK.
Expected Behaviour	Check that: On receiving any management message containing a HMAC tuple with the newer AK Sequence Number in the tuple, 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).
Test strategy	
Notes	

TP ID	TP/BS/PKM/AUTH/OPN/BV-H003
IEEE 802.16 Reference	clauses 7.4.1.3 and 7.5.4.3
PICS Item	
Initial Condition	The IUT has terminated Network entry procedures. One AK is active for the IUT.
Expected Behaviour	Check that: For transmitting any management message containing a HMAC tuple, 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.
Test strategy	
Notes	
TP ID	TP/BS/PKM/AUTH/OPN/BV-H004
IEEE 802.16 Reference	clause 7.2.1 Figure "Authorization state machine flow diagram" Table "Authorization FSM state transition matrix"
PICS Item	
Initial Condition	IUT has terminated Network entry procedures. Static SAs are provisioned.
Expected Behaviour	Check that: On receiving a valid Auth Request message during the Authorization Grace period to reauthorize, 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.
Test strategy	
Notes	

TP ID	TP/BS/PKM/AUTH/OPN/BV-H005
IEEE 802.16 Reference	clause 7.4.1.1
PICS Item	
Initial Condition	The IUT has terminated Network entry procedures.
Expected Behaviour	Check that: When the SS fails to reauthorize before the expiration of the current AK, the IUT considers the SS unauthorized, holds no active AKs for the SS, and removes all TEKs associated with the SS's Primary SA.
Test strategy	
Notes	

TP ID	TP/BS/PKM/AUTH/OPN/BI-H000
IEEE 802.16 Reference	clause 7.2.1 Figure "Authorization state machine flow diagram" Table "Authorization FSM state transition matrix" clause 11.9.10
PICS Item	
Initial Condition	IUT has terminated Network entry procedures. An SS is no longer authorized for basic unicast service.
Expected Behaviour	Check that: On receiving an Auth Request from the unauthorized SS, the IUT transmits an Auth Reject message with the error code set either to No Information or Unauthorized SS.
Test strategy	
Notes	

TP ID	TP/BS/PKM/AUTH/OPN/TI-H000
IEEE 802.16 Reference	clause 7.4.1.1
PICS Item	
Initial Condition	The IUT has completed a successful Authorization transaction with the SS.
Expected Behaviour	Check that: From the time that the Auth Reply message is transmitted during the transaction, the IUT keeps the AK active for the parameter AK-Lifetime.
Test strategy	
Notes	System configuration parameter AK-Lifetime

TP ID	TP/BS/PKM/AUTH/OPN/TI-H001
IEEE 802.16 Reference	clause 7.4.1.1
PICS Item	
Initial Condition	The IUT has completed a successful Authorization transaction with the SS that changed the AK-Lifetime value.
Expected Behaviour	Check that: The IUT maintains the AKS active during the AK-Lifetime value transmitted in the Auth Reply message.
Test strategy	
Notes	

5.2.4.2   Encryption Key Transfer (TEK)

5.2.4.2.1   Initialization (INIT)

TP ID	TP/BS/PKM/TEK/INIT/BV-H000
IEEE 802.16 Reference	clause 7.2.2.1
PICS Item	
Initial Condition	Basic Capabilities Negotiation and Authorization is completed.
Expected Behaviour	Check that: On receiving a valid Key Request message with an authorized SAID, the IUT transmits a valid Key Reply message for the given SAID.
Test strategy	
Notes	

TP ID	TP/BS/PKM/TEK/INIT/BV-H001
IEEE 802.16 Reference	clause 7.2.5.2
PICS Item	
Initial Condition	Basic Capabilities Negotiation is completed.
Expected Behaviour	Check that: On receiving a Key Request message with an unauthorized SAID, the IUT transmits a valid Key Reject message for the given SAID.
Test strategy	
Notes	

TP ID	TP/BS/PKM/TEK/INIT/BV-H002
	Deleted

TP ID	TP/BS/PKM/TEK/INIT/BV-H003
IEEE 802.16 Reference	clause 7.2.2.1
PICS Item	
Initial Condition	Basic Capabilities Negotiation is completed. A successful Key Request transaction has occurred and T-OpWait starts.
Expected Behaviour	Check that: On receiving a valid Key Request message after T_OpWait expiry, the IUT transmits a valid Key Reply message for the SAID.
Test strategy	
Notes	

TP ID	TP/BS/PKM/TEK/INIT/BV-H004
IEEE 802.16 Reference	clauses 7.4.1.3 and 7.5.4.3
PICS Item	
Initial Condition	The IUT has terminated Network entry procedures. One AK is active for the IUT. A successful Authorization transaction for a new AK has just been completed.
Expected Behaviour	Check that: On receiving a Key Request with the new AK Sequence Number, 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).
Test strategy	
Notes	

TP ID	TP/BS/PKM/TEK/INIT/BV-H005
IEEE 802.16 Reference	clause 7.2.2.1 Table "TEK state machine flow diagram" Figure "TEK FSM state transition diagram"
PICS Item	
Initial Condition	The IUT Is encrypting.
Expected Behaviour	Check that: On receiving a valid Key Request message with an authorized SAID within the refresh grace period, 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.
Test strategy	
Notes	

TP ID	TP/BS/PKM/TEK/INIT/BV-H006
IEEE 802.16 Reference	clause 7.2.4.2 Table "Error-code attribute code values"
PICS Item	
Initial Condition	IUT is initializing.
Expected Behaviour	Check that: On receiving a Key Request with an HMAC-Digest attribute that will fail IUT verification, the IUT transmits an Auth Invalid message with error-code as either No Information or Message (Key Request) authentication failure.
Test strategy	
Notes	

TP ID	TP/BS/PKM/TEK/INIT/BV-H007
IEEE 802.16 Reference	clause 7.2.4.2 Table "Error-code attribute code values"
PICS Item	
Initial Condition	IUT is initializing.
Expected Behaviour	Check that: On receiving a Key Request with no valid AK associated with the SS, the IUT transmits an Auth Invalid message with error-code as either No Information or Unauthorized SS.
Test strategy	
Notes	

TP ID	TP/BS/PKM/TEK/INIT/BV-H008
IEEE 802.16 Reference	clause 7.2.5.2
PICS Item	
Initial Condition	The IUT is initializing.
Expected Behaviour	Check that: On receiving a Key Request message with an unauthorized SAID within the refresh grace period, the IUT transmits a valid Key Reject message for the given SAID and MAC DATA PDU encryption stops for this SAID.
Test strategy	
Notes	

TP ID	TP/BS/PKM/TEK/INIT/BV-H009
IEEE 802.16 Reference	clause 7.2.5.2 Table "TEK state machine flow diagram" Figure "TEK FSM state transition diagram"
PICS Item	
Initial Condition	The IUT is decrypting.
Expected Behaviour	Check that: On receiving 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, the IUT transmits a TEK Invalid message.
Test strategy	
Notes	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	TP/BS/PKM/TEK/INIT/BV-H010
IEEE 802.16 Reference	clause 7.2.2.1
PICS Item	
Initial Condition	Encryption/decryption is underway. A successful Key Reply transaction has occurred and T_RefreshWait has just started.
Expected Behaviour	Check that: On receiving a retransmitted Key Reply after T_RefreshWait expired, the IUT transmits a valid Key Reply message for the given SAID to refresh the keys.
Test strategy	
Notes	

TP ID	TP/BS/PKM/TEK/INIT/BI-H000
Deleted	

5.2.4.2.2 Operational (OPN)

TP ID	TP/BS/PKM/TEK/OPN/BV-H000
IEEE 802.16 Reference	clause 7.4.2.1
PICS Item	
Initial Condition	IUT has terminated Network entry procedures. Two keys are active.
Expected Behaviour	Check that: The IUT deactivates the older key once it has expired.
Test strategy	
Notes	

TP ID	TP/BS/PKM/TEK/OPN/BV-H001
IEEE 802.16 Reference	clauses 7.4.1.3 and 7.5.4.3
PICS Item	
Initial Condition	Two AKs are active for the IUT.
Expected Behaviour	Check that: On receiving a Key Request with the oldest active AK Key Sequence Number, the 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.
Test strategy	
Notes	

TP ID	TP/BS/PKM/TEK/OPN/BV-H002
IEEE 802.16 Reference	clauses 7.4.1.3 and 7.5.4.3
PICS Item	
Initial Condition	Two AKs are active for the IUT.
Expected Behaviour	Check that: On receiving a Key Request with the newest active AK Key Sequence Number, the 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).
Test strategy	
Notes	

TP ID	TP/BS/PKM/TEK/OPN/BV-H003
IEEE 802.16 Reference	clauses 7.4.1.3 and 7.5.4.3
PICS Item	
Initial Condition	One AK is active for the IUT.
Expected Behaviour	Check that: On receiving a valid Key Request, 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.
Test strategy	
Notes	

TP ID	TP/BS/PKM/TEK/OPN/BV-H004
IEEE 802.16 Reference	clauses 7.4.1.3 and 7.5.4.3
PICS Item	
Initial Condition	One AK is active for the IUT. An Authorization transaction for a new AK has just been completed.
Expected Behaviour	Check that: On receiving a Key Request with the older AK Sequence Number, 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.
Test strategy	
Notes	

TP ID	TP/BS/PKM/TEK/OPN/BV-H005
IEEE 802.16 Reference	clauses 7.5, 7.5.1.1, 11.9.8 and 11.9.9
PICS Item	
Initial Condition	The IUT has terminated Network entry procedures. The IUT is encrypting downlink MAC DATA PDU payloads.
Expected Behaviour	Check that: The IUT uses a CBC calculated by XOR-ing the CBC-IV transmitted in the TEK parameters sub attributes with current Frame Number (right-justified).
Test strategy	
Notes	

TP ID	TP/BS/PKM/TEK/OPN/BV-H006
	Deleted

TP ID	TP/BS/PKM/TEK/OPN/BV-H007
IEEE 802.16 Reference	clauses 7.5 and 7.5.2.2
PICS Item	
Initial Condition	The IUT is Key Exchanging. During authorization, the IUT has received 0x02 in the TEK encryption algorithm identifiers of the Cryptographic-Suite-List of the Security-Capabilities in the Auth Request message.
Expected Behaviour	Check that: On receiving a Key Request message, the IUT transmits a Key Reply message with the TEK in the TEK-parameters sub attributes encrypted using the RSA method.
Test strategy	
Notes	

TP ID	TP/BS/PKM/TEK/OPN/BV-H008
IEEE 802.16 Reference	clauses 7.5 and 7.5.2.2
PICS Item	
Initial Condition	The IUT is Key Exchanging. During authorization, the IUT has received 0x03 in the TEK encryption algorithm identifiers of the Cryptographic-Suite-List of the Security-Capabilities in the Auth Request message.
Expected Behaviour	Check that: On receiving a Key Request message, the IUT transmits a Key Reply message with the TEK-128 in the TEK-parameters sub attributes encrypted using the 128-bit AES in ECB mode method.
Test strategy	
Notes	

TP ID	TP/BS/PKM/TEK/OPN/BV-H009
IEEE 802.16 Reference	clauses 7.5, 7.5.1.1, 11.9.8 and 11.9.9
PICS Item	
Initial Condition	The IUT is decrypting uplink MAC DATA PDU payloads.
Expected Behaviour	Check that: The IUT uses a CBC calculated by XOR-ing the CBC-IV transmitted in the TEK parameters sub attributes with the PHY synchronization field of the DL-MAP in effect for the UL-MAP.
Test strategy	
Notes	

5.2.4.3   Security Association Management (SAM)

TP ID	TP/BS/PKM/SAM/BV-H000
IEEE 802.16 Reference	clause 7.1.4
PICS item	
Initial Condition	IUT has terminated Network entry procedures and adding a Dynamic Service (DSA) for each of several data transport connections.
Expected Behaviour	Check that: The IUT maps all transport connections to an existing SA.
Test strategy	
Notes	

TP ID	TP/BS/PKM/SAM/BV-H001
IEEE 802.16 Reference	clause 7.1.4
PICS item	
Initial Condition	IUT has terminated Network entry procedures and adding a Dynamic Service (DSA) for each of several multicast data transport connections.
Expected Behaviour	Check that: The IUT maps the multicast transport connections to any Static or Dynamic SA.
Test strategy	
Notes	

TP ID	TP/BS/PKM/SAM/BV-H002
IEEE 802.16 Reference	clause 7.3.2
PICS item	
Initial Condition	IUT has terminated Network entry procedures.
Expected Behaviour	Check that: To initiate a dynamic service creation for a new SA, the IUT transmits first the SA Add message and then the SA in a DSA-REQ message.
Test strategy	
Notes	

TP-ID	TP/BS/PKM/SAM/BV-H003
IEEE 802.16 Reference	clauses 7.1.4 and 11.9.17
PICS Item	
Initial Condition	IUT has terminated Network entry procedures. An SA has been added to the SS through the use of an SA-Add transaction. The SA has yet to be used.
Expected Behaviour	Check that: On receiving an Auth Request, the IUT sends a valid Auth Reply and then sends a new SA Add renewing the SA.
Test strategy	
Notes	

TP-ID	TP/BS/PKM/SAM/BV-H004
IEEE 802.16 Reference	clauses 7.1.4 and 11.9.17
PICS Item	
Initial Condition	IUT has terminated Network entry procedures. An SA has been added to the SS through the use of an SA-Add transaction. The SA has been added to the set of Static SAs but has as yet to be used.
Expected Behaviour	Check that: On receiving an Auth Request. The IUT sends an Auth Reply listing the SA as authorized.
Test strategy	
Notes	

5.2.4.4 Encryption and Key Scheduling (EKS)

TP ID	TP/BS/PKM/EKS/BV-H000
IEEE 802.16 Reference	clause 7.1.5
PICS Item	
Initial Condition	IUT has begun SS authorization.
Expected Behaviour	Check that: The IUT supports at least one of the Cryptographic Suites in table 378.
Test strategy	
Notes	

TP ID	TP/BS/PKM/EKS/BV-H001
IEEE 802.16 Reference	clause 6.3.3.6
PICS Item	
Initial Condition	IUT has terminated Network entry procedures.
Expected Behaviour	Check that: The IUT never encrypts the generic (HT set to 0) MAC header.
Test strategy	
Notes	

TP ID	TP/BS/PKM/EKS/BV-H002
IEEE 802.16 Reference	clause 7.1.1
PICS Item	
Initial Condition	The key parameters exchange is successful.
Expected Behaviour	Check that: Having exchanged the key parameters successfully, the IUT continues to send the MAC Management messages in clear.
Test strategy	
Notes	

TP ID	TP/BS/PKM/EKS/BV-H003
IEEE 802.16 Reference	clause 7.2.5.2 Table "TEK state machine flow diagram" Figure "TEK FSM state transition diagram"
PICS Item	
Initial Condition	The IUT is decrypting.
Expected Behaviour	Check that: On receiving 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, the IUT transmits a TEK Invalid message.
Test strategy	
Notes	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.

TP ID	TP/BS/PKM/EKS/BV-H004
IEEE 802.16 Reference	clause 7.2.5.2 Table "TEK state machine flow diagram" Figure "TEK FSM state transition diagram"
PICS Item	
Initial Condition	Basic Capabilities Negotiation and Authentication are completed. The negotiated cryptographic suite is 0x01.
Expected Behaviour	Check that: On receiving a Key Request message the IUT transmits a Key Reply message containing older and newer generation of TEKs encrypted using 3-DES.
Test strategy	
Notes	

TP ID	TP/BS/PKM/EKS/BV-H005
IEEE 802.16 Reference	clause 7.2.5.2 Table "TEK state machine flow diagram" Figure "TEK FSM state transition diagram"
PICS Item	
Initial Condition	Basic Capabilities Negotiation and Authentication are completed. The negotiated cryptographic suite is 0x02.
Expected Behaviour	Check that: On receiving a Key Request message containing the TEK encryption algorithm identifier to be used for SAs defined in the cryptographic suite as 0x02, the IUT transmits a Key Reply message containing older and newer generation of TEKs encrypted using RSA with 1 024 bit key.
Test strategy	
Notes	

TP ID	TP/BS/PKM/EKS/BV-H006
IEEE 802.16 Reference	clause 7.1.1
PICS Item	
Initial Condition	IUT has terminated Network entry procedures. The key parameters exchange is successful. A service flow is established with no data encryption.
Expected Behaviour	Check that: The IUT transmits and receives correctly data over a non encrypted service flow.
Test strategy	
Notes	

5.2.4.4.1   Key Usage (KU)

TP ID	TP/BS/PKM/EKS/KU/BV-H000
IEEE 802.16 Reference	clause 7.2.1
PICS Item	
Initial Condition	IUT has terminated Network entry procedures.
Expected Behaviour	Check that: The IUT simultaneously supports two active AKs during re-authorization.
Test strategy	
Notes	

TP ID	TP/BS/PKM/EKS/KU/BV-H001
IEEE 802.16 Reference	clause 6.3.3.6
PICS Item	
Initial Condition	IUT has terminated Network entry procedures.
Expected Behaviour	Check that: The IUT discards an unencrypted MAC data PDU received on a connection mapped to an SA requiring encryption.
Test strategy	
Notes	

TP ID	TP/BS/PKM/EKS/KU/BV-H002
IEEE 802.16 Reference	clause 7.2.5.2 Table "TEK state machine flow diagram" Figure "TEK FSM state transition diagram" clause 6.3.2.3.9.9
PICS Item	
Initial Condition	The IUT is decrypting.
Expected Behaviour	Check that: On receiving an uplink MAC DATA PDU with an invalid TEK key sequence number for the SAID, the IUT transmits a PKM-RSP with TEK Invalid (Code = 11 and Error code = 4. Invalid AK key sequence number).
Test strategy	
Notes	

TP ID	TP/BS/PKM/EKS/KU/BV-H003
IEEE 802.16 Reference	clause 7.4.1.4 Figure "TEK management in BS and SS"
PICS Item	
Initial Condition	IUT is operational. The IUT is currently encrypting. The IUT has received a valid Key Request in the grace period.
Expected Behaviour	Check that: On receiving a valid Key Request the TE has sent in the grace period, the IUT transmits a valid Key Reply with two TEK; that the older TEK is the currently active one and the newer TEK has a key sequence number one greater (modulo 4) than of the older TEK; and that the two TEK lifetimes reflect their remaining lifetimes at the time the Key Reply is sent.
Test strategy	
Notes	

TP ID	TP/BS/PKM/EKS/KU/BV-H004
IEEE 802.16 Reference	clause 7.4.1.4 Figure "TEK management in BS and SS"
PICS Item	
Initial Condition	IUT is operational. TEK_n has expired.
Expected Behaviour	Check that: The IUT no longer uses TEK_n.
Test strategy	
Notes	

TP ID	TP/BS/PKM/EKS/KU/BV-H005
IEEE 802.16 Reference	clause 7.4.1.5 Figure "TEK management in BS and SS"
PICS Item	
Initial Condition	The IUT is operational and encrypting MAC DATA PDUs. The current TEK is TEK_n.
Expected Behaviour	Check that: The IUT encrypts using TEK_{n+1} at the expiration of 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).
Test strategy	
Notes	

TP ID	TP/BS/PKM/EKS/KU/BV-H006
IEEE 802.16 Reference	clause 7.4.1.5 Figure "TEK management in BS and SS"
PICS Item	
Initial Condition	The IUT is operational and encrypting MAC DATA PDUs.
Expected Behaviour	Check that: The IUT encrypts MAC DATA PDUs using the older of the two active TEKs.
Test strategy	
Notes	

5.2.4.4.2   Encryption (ENC)

TP ID	TP/BS/PKM/EKS/ENC/BV-H000
IEEE 802.16 Reference	clauses 7.5 and 7.5.1.1 Table "Data encryption algorithm identifiers" Table "SA-descriptor attributes"
PICS Item	
Initial Condition	The IUT is operational. During successful SS authorization and key exchange, the IUT has transmitted an SA-Descriptor sub attribute with Cryptographic suite identifier equal to 0x01 for CBC-Mode, 56-bit DES for a given SA.
Expected Behaviour	Check that: For the given SA, the IUT uses the CBC mode of the DES algorithm to encrypt the MAC DATA PDU payloads.
Test strategy	
Notes	

TP ID	TP/BS/PKM/EKS/ENC/BV-H001
IEEE 802.16 Reference	clauses 7.5 and 7.5.1.1 Table "Data encryption algorithm identifiers" Table "SA-descriptor attributes"
PICS Item	
Initial Condition	The IUT is operational. During successful SS authorization and key exchange, the IUT has transmitted an SA-Descriptor sub attribute with Cryptographic suite identifier equal to 0x02 for CCM-Mode, AES for a given SA.
Expected Behaviour	Check that: For the given SA, the IUT uses the CCM mode of the AES algorithm to encrypt the MAC DATA PDU payloads.
Test strategy	
Notes	

TP ID	TP/BS/PKM/EKS/ENC/BV-H002
IEEE 802.16 Reference	clauses 7.5 and 7.5.1.1 Table "Data encryption algorithm identifiers" Table "SA-descriptor attributes"
PICS Item	
Initial Condition	The IUT is operational. During successful SS authorization and key exchange, the IUT has transmitted an SA-Descriptor sub attribute with Cryptographic suite identifier equal to 0x00 for a given SA.
Expected Behaviour	Check that: For the given SA, the IUT does not encrypt the MAC DATA PDU payloads.
Test strategy	
Notes	

TP ID	TP/BS/PKM/EKS/ENC/BV-H003
IEEE 802.16 Reference	clauses 7.5 and 7.5.1.1
PICS Item	
Initial Condition	A downlink service flow is established using the CBC mode of DES algorithm for encrypting the data PDUs. The IUT is transmitting downlink MAC DATA PDU payloads. The final block of plaintext is of n bits where n is less than 64 bits.
Expected Behaviour	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.
Test strategy	
Notes	

TP ID	TP/BS/PKM/EKS/ENC/BV-H004
IEEE 802.16 Reference	clauses 7.5 and 7.5.1.1
PICS Item	
Initial Condition	A downlink service flow is established using the CBC mode of DES algorithm for encrypting the data PDUs. The IUT is transmitting downlink MAC DATA PDU payloads. The entire plaintext is of n bits where n is less than 64 bits.
Expected Behaviour	Check that: The IUT DES encrypts the IV, and then XORs the most significant n bits of the cipher text with the n bits of the payload to generate the short cipher block.
Test strategy	
Notes	

TP ID	TP/BS/PKM/EKS/ENC/BV-H005
IEEE 802.16 Reference	clauses 7.5.3 and 7.5.4.3
PICS Item	
Initial Condition	The IUT is authenticating the Key Reply, Key Reject, TEK Invalid, and SA Add Attribute messages with HMAC-Digest.
Expected Behaviour	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.
Test strategy	
Notes	

TP ID	TP/BS/PKM/EKS/ENC/BV-H006
IEEE 802.16 Reference	clause 7.4.1.5 Figure "TEK management in BS and SS"
PICS Item	
Initial Condition	The IUT is operational and encrypting downlink MAC DATA PDUs. The keying material for the primary SA has been exchanged. The connection is mapped to the primary SA. The MAC DATA PDUs are encrypted using the older of the two active TEKs.
Expected Behaviour	Check that: The IUT encrypts the MAC DATA PDUs.
Test strategy	
Notes	

TP ID	TP/BS/PKM/EKS/ENC/BV-H007
IEEE 802.16 Reference	clause 7.4.1.5 Figure "TEK management in BS and SS"
PICS Item	
Initial Condition	The IUT is operational and encrypting downlink MAC DATA PDUs. The keying material for the static SA has been exchanged. The connection is mapped to the static SA. The MAC DATA PDUs are encrypted using the older of the two active TEKs.
Expected Behaviour	Check that: The IUT encrypts the MAC DATA PDUs.
Test strategy	
Notes	

TP ID	TP/BS/PKM/EKS/ENC/BV-H008
IEEE 802.16 Reference	clause 7.4.1.5 Figure "TEK management in BS and SS"
PICS Item	
Initial Condition	The IUT is operational and encrypting downlink MAC DATA PDUs. The IUT has more than one downlink connection in active state with the SS. The keying material for the Primary SA and Static SA has been exchanged. One of the connections is mapped to the Static SA. The remaining connections are mapped to the Primary SA. The MAC DATA PDUs are encrypted using the older of the two active TEKs.
Expected Behaviour	Check that: The IUT encrypts correctly the MAC DATA PDUs for all SAs (Primary or Static).
Test strategy	
Notes	

TP ID	TP/BS/PKM/EKS/ENC/BV-H009
IEEE 802.16 Reference	clause 7.4.1.5 Figure "TEK management in BS and SS"
PICS Item	
Initial Condition	The IUT is operational and encrypting downlink MAC DATA PDUs for more than 2 SSs. The keying material for the Primary SA of all SSs has been exchanged. At least one downlink connection in active state is established with each SS. The MAC DATA PDUs are encrypted using the older of the two active TEKs.
Expected Behaviour	Check that: The IUT encrypts correctly the MAC DATA PDUs for the Primary SA of each SS.
Test strategy	
Notes	The TP is correct, but is not testable with the current test architecture. Valid behaviour in the case of TP/BS/PKM/EKS/ENC/BV-H008 should give some confidence that encryption is being done correctly.

5.2.4.4.3   Decryption (DEC)

TP ID	TP/BS/PKM/EKS/DEC/BV-H000
IEEE 802.16 Reference	clause 7.4.1.5 Figure "TEK management in BS and SS"
PICS Item	
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.
Expected Behaviour	Check that: The IUT decrypts the MAC DATA PDUs.
Test strategy	
Notes	Requires a means to determine if the received DATA PDUs are decrypted correctly.

TP ID	TP/BS/PKM/EKS/DEC/BV-H001
IEEE 802.16 Reference	clause 7.4.1.5 Figure "TEK management in BS and SS"
PICS Item	
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.
Expected Behaviour	Check that: The IUT decrypts the MAC DATA PDUs.
Test strategy	
Notes	Requires a means to determine if the received DATA PDUs are decrypted correctly.

TP ID	TP/BS/PKM/EKS/DEC/BV-H002
IEEE 802.16 Reference	clause 7.4.1.5 Figure "TEK management in BS and SS"
PICS Item	
Initial Condition	The IUT is operational and decrypting uplink MAC DATA PDUs.
Expected Behaviour	Check that: The IUT decrypts with a TEK for the TEK's entire lifetime.
Test strategy	
Notes	Requires a means to determine if the received DATA PDUs are decrypted correctly.

TP ID	TP/BS/PKM/EKS/DEC/BV-H003
IEEE 802.16 Reference	clauses 7.5 and 7.5.1.1
PICS Item	
Initial Condition	The IUT is operational. The IUT is decrypting uplink MAC DATA PDU payloads using DES. The final block of plaintext is of n bits where n is less than 64 bits.
Expected Behaviour	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 clear text block.
Test strategy	
Notes	Requires a means to determine if the received DATA PDUs are decrypted correctly.

TP ID	TP/BS/PKM/EKS/DEC/BV-H004
IEEE 802.16 Reference	clauses 7.5 and 7.5.1.1
PICS Item	
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.
Expected Behaviour	Check that: The IUT correctly decrypts the entire plaintext.
Test strategy	
Notes	Requires a means to determine if the received DATA PDUs are decrypted correctly.

TP ID	TP/BS/PKM/EKS/DEC/BV-H005
IEEE 802.16 Reference	clause 7.4.1.5 Figure "TEK management in BS and SS"
PICS Item	
Initial Condition	The IUT is operational with more than two SSs. The keying material for the Primary SA of all SS has been exchanged. At least one uplink connection in active state is established with each SS. The IUT has granted sufficient bandwidth to each SS.
Expected Behaviour	Check that: The IUT correctly processes the transmission from each SS and applies the correct SA on the received data.
Test strategy	
Notes	Requires a means to determine if the received DATA PDUs are decrypted correctly.

TP ID	TP/BS/PKM/EKS/DEC/BI-H000
IEEE 802.16 Reference	clause 6.3.3.6
PICS Item	
Initial Condition	IUT is operational.
Expected Behaviour	Check that: On receiving an unencrypted MAC DATA PDU mapped to an SA requiring encryption, the IUT discards the MAC PDU.
Test strategy	
Notes	Require a means to determine if the received DATA PDUs are decrypted correctly.

5.2.4.5   Certificates (CERT)

TP ID	TP/BS/PKM/CERT/BV-H000
IEEE 802.16 Reference	clause 7.6.3
PICS Item	
Initial Condition	IUT is operational.
Expected Behaviour	Check that: The IUT validates the SS certificate's certification path or chain.
Test strategy	
Notes	

5.2.5   Dynamic Services (DS)

5.2.5.1   Dynamic Services Addition (DSA)

TP ID	TP/BS/DS/DSA/BV-H000
IEEE 802.16 Reference	clause 6.3.14.9.2
PICS Item	
Initial Condition	IUT has completed initialization and is operating.
Expected Behaviour	Check that: To initiate a DL service flow, the IUT sends a valid DSA-REQ with valid DL parameters.
Test strategy	Straightforward.
Notes	Requires a means to provoke the IUT to start the DSA transaction with a DSA-REQ.

TP ID	TP/BS/DS/DSA/BV-H001
IEEE 802.16 Reference	clause 6.3.14.9.2
PICS Item	
Initial Condition	IUT has completed initialization and is operating.
Expected Behaviour	Check that: To initiate an UL service flow, the IUT sends a valid DSA-REQ with valid UL parameters.
Test strategy	Straightforward.
Notes	Requires a means to provoke the IUT to start the DSA transaction with a DSA-REQ.

TP ID	TP/BS/DS/DSA/BV-H002
IEEE 802.16 Reference	clause 6.3.14.9.3
PICS Item	
Initial Condition	IUT has completed initialization and is operating.
Expected Behaviour	Check that: To create a bidirectional Service flow, the IUT sends two DSA-REQ, one to create and activate the UL portion and one to create and activate the DL portion.
Test strategy	
Notes	Requires a means to provoke the IUT to start the DSA transaction for a bidirectional service flow with a DSA-REQ.

TP ID	TP/BS/DS/DSA/BV-H003
IEEE 802.16 Reference	clause 6.3.14.9.2
PICS Item	
Initial Condition	IUT is operating and has initiated establishing a DL service flow by sending a DSA-REQ with DL parameters.
Expected Behaviour	Check that: On receiving a DSA-RSP containing the Confirmation Code set to OK/success, the IUT sends a DSA-ACK containing the Confirmation Code set to OK/success.
Test strategy	Straightforward.
Notes	Requires a means to provoke the IUT to start the DSA transaction with a DSA-REQ.

TP ID	TP/BS/DS/DSA/BV-H004
IEEE 802.16 Reference	clause 6.3.14.9.2
PICS Item	
Initial Condition	IUT is operating and has initiated establishing a UL service flow by sending a DSA-REQ with UL parameters.
Expected Behaviour	Check that: On receiving a DSA-RSP containing the Confirmation Code set to OK/success, the IUT sends a DSA-ACK containing the Confirmation Code set to OK/success.
Test strategy	Straightforward.
Notes	Requires a means to provoke the IUT to start the DSA transaction with a DSA-REQ.

TP ID	TP/BS/DS/DSA/BV-H005
IEEE 802.16 Reference	clause 6.3.14.9.3
PICS Item	
Initial Condition	IUT is operating and has initiated establishing a bidirectional service flow by sending a separate DSA-REQ for the UL and another DSA-REQ for the DL with parameters.
Expected Behaviour	Check that: On receiving a DSA-RSP containing the Confirmation Code set to OK/success, the IUT sends a DSA-ACK containing the Confirmation Code set to OK/success.
Test strategy	
Notes	Requires a means to provoke the IUT to start the DSA transaction for a bidirectional service flow with a DSA-REQ.

TP ID	TP/BS/DS/DSA/BV-H006
IEEE 802.16 Reference	clause 6.3.14.9.3
PICS Item	
Initial Condition	IUT has completed initialization and is operating.
Expected Behaviour	Check that: To create a provisioned state Service flow, the IUT sends a DSA-REQ message to create the service flow in the provisioned state.
Test strategy	Straightforward.
Notes	Requires a means to provoke the IUT to start the provisioned state DSA transaction with a DSA-REQ.

TP ID	TP/BS/DS/DSA/BV-H007
IEEE 802.16 Reference	clause 6.3.14.9.3
PICS Item	
Initial Condition	IUT is operating and has initiated establishing a provisioned state service flow by sending a DSA-REQ message.
Expected Behaviour	Check that: On receiving a DSA-RSP containing the Confirmation Code set to OK/success, the IUT sends a DSA-ACK containing the Confirmation Code set to OK/success.
Test strategy	Straightforward.
Notes	Requires a means to provoke the IUT to start the provisioned state DSA transaction with a DSA-REQ.

TP ID	TP/BS/DS/DSA/BV-H008
IEEE 802.16 Reference	clause 6.3.14.9.3
PICS Item	
Initial Condition	IUT has completed initialization and is operating.
Expected Behaviour	Check that: To create an admitted state Service flow, the IUT sends a DSA-REQ message to create a service flow in the admitted state.
Test strategy	
Notes	Requires a means to provoke the IUT to start the admitted state DSA transaction with a DSA-REQ.

TP ID	TP/BS/DS/DSA/BV-H009
IEEE 802.16 Reference	clause 6.3.14.9.3
PICS Item	
Initial Condition	IUT is operating and has initiated establishing an admitted state service flow by sending a DSA-REQ message.
Expected Behaviour	Check that: On receiving a DSA-RSP containing the Confirmation Code set to OK/success, the IUT sends a DSA-ACK containing the Confirmation Code set to OK/success.
Test strategy	
Notes	Requires a means to provoke the IUT to start the admitted state DSA transaction with a DSA-REQ.

TP ID	TP/BS/DS/DSA/BV-H010
IEEE 802.16 Reference	clause 6.3.14.9.3
PICS Item	
Initial Condition	IUT is operating and has initiated establishing a DL service flow by sending a DSA-REQ with DL parameters.
Expected Behaviour	Check that: On receiving a DSA-RSP containing the Confirmation Code set to reject-other, the IUT sends a DSA-ACK containing the Confirmation Code not set to OK/success.
Test strategy	
Notes	Requires a means to provoke the IUT to start the DSA transaction with a DSA-REQ.

TP ID	TP/BS/DS/DSA/BV-H011
IEEE 802.16 Reference	clause 6.3.14.9.3
PICS Item	
Initial Condition	IUT is operating and has initiated establishing a DL service flow by sending a DSA-REQ with DL parameters. The IUT has received a DSA-RSP message and has sent a DSA-ACK message.
Expected Behaviour	Check that: On receiving a DSA-RSP containing the Confirmation Code set to OK/success, the IUT sends a DSA-ACK containing the Confirmation Code set to OK/success.
Test strategy	
Notes	Requires a means to provoke the IUT to start the DSA transaction with a DSA-REQ.

TP ID	TP/BS/DS/DSA/BV-H013
IEEE 802.16 Reference	clause 6.3.14.9.3
PICS Item	
Initial Condition	IUT has completed initialization and is operating.
Expected Behaviour	Check that: On receiving a DSA-REQ message, the IUT sends a DSX-RVD message and then a DSA-RSP message.
Test strategy	
Notes	

TP ID	TP/BS/DS/DSA/BV-H014
IEEE 802.16 Reference	clause 6.3.14.9.3
PICS Item	
Initial Condition	IUT has completed initialization and is operating.
Expected Behaviour	Check that: On receiving a DSA-REQ message containing the Service Flow Parameters set to an unsupported value, the IUT sends a DSX-RVD message containing the Confirmation Code set to OK/success and then a DSA-RSP message containing the Confirmation Code set to any reject reason.
Test strategy	
Notes	

TP ID	TP/BS/DS/DSA/BV-H015
IEEE 802.16 Reference	clause 6.3.14.9.3
PICS Item	
Initial Condition	IUT has completed initialization and is operating. The IUT has received a DSA-REQ message, has sent a DSx-RVD message and then a DSA-RSP message.
Expected Behaviour	Check that: On receiving a DSA-ACK containing the Confirmation Code set to OK/success, the IUT accepts this message.
Test strategy	
Notes	

TP ID	TP/BS/DS/DSA/BV-H016
IEEE 802.16 Reference	clause 6.3.14.9.3
PICS Item	
Initial Condition	IUT has completed initialization and is operating. The IUT has received a DSA-REQ message, has sent a DSx-RVD message and then a DSA-RSP message.
Expected Behaviour	Check that: On receiving a DSA-ACK containing the Confirmation Code set to reject-other, the IUT accepts this message.
Test strategy	
Notes	

TP ID	TP/BS/DS/DSA/BV-H017
IEEE 802.16 Reference	clause 6.3.14.9.3
PICS Item	
Initial Condition	IUT has completed initialization and is operating. The IUT has received a DSA-REQ message, has sent a DSx-RVD message and then a DSA-RSP message. The IUT has finally received a DSA-ACK message. The IUT is now into DSA-Remote Holding down state.
Expected Behaviour	Check that: On receiving a DSA-ACK containing the Confirmation Code set to OK/success, the IUT takes no action.
Test strategy	
Notes	

TP ID	TP/BS/DS/DSA/BV-H018
IEEE 802.16 Reference	clause 6.3.14.9.3
PICS Item	
Initial Condition	IUT has completed initialization and is operating. The IUT has received a DSA-REQ message, has sent a DSx-RVD message and then a DSA-RSP message. The IUT has finally received a DSA-ACK message. The IUT is now into DSA-Remote Holding down state.
Expected Behaviour	Check that: On receiving a DSA-ACK containing the Confirmation Code set to reject-other, the IUT takes no action.
Test strategy	
Notes	

TP ID	TP/BS/DS/DSA/BV-H019
IEEE 802.16 Reference	clause 6.3.14.9.3
PICS Item	
Initial Condition	IUT has completed initialization and is operating.
Expected Behaviour	Check that: On receiving a DSA-REQ containing ARQ TLVs, the IUT sends a DSX-RVD followed by a DSA-RSP containing the same ARQ TLVs with same or changed values.
Test strategy	
Notes	

TP ID	TP/BS/DS/DSA/BV-H020
IEEE 802.16 Reference	clause 6.3.14.9.3
PICS Item	
Initial Condition	IUT has completed initialization and is operating. A service flow is established.
Expected Behaviour	Check that: The IUT exchanges correctly data on the active Service Flow (SF).
Test strategy	
Notes	

TP ID	TP/BS/DS/DSA/BV-H021
IEEE 802.16 Reference	clauses 6.3.2.3.10 and 6.3.2.3.11
PICS Item	
Initial Condition	IUT is authorized and registered. The IUT has started the TFTP transaction. There are preprovisioned DS service flows to establish.
Expected Behaviour	Check that: On receiving a valid TFTP-REQ, the IUT transmits a TFTP-RSP, then a TFTP-CPLT followed by the BS-initiated DSA-REQ.
Test strategy	
Notes	

TP ID	TP/BS/DS/DSA/BI-H000
IEEE 802.16 Reference	clause 6.3.14.9.3
PICS Item	
Initial Condition	IUT is operating and has initiated establishing a DL service flow by sending a DSA-REQ with DL parameters.
Expected Behaviour	Check that: On receiving an erroneous DSA-RSP, the IUT re-sends a DSA-REQ message.
Test strategy	
Notes	Requires a means to provoke the IUT to start the DSA transaction with a DSA-REQ.

TP ID	TP/BS/DS/DSA/BI-H001
IEEE 802.16 Reference	clause 6.3.14.9.3
PICS Item	
Initial Condition	IUT has completed initialization and is operating.
Expected Behaviour	Check that: On receiving a DSA-REQ message with an unauthorized SAID, the IUT sends a DSA-RSP message to refuse the service flow associated with the unauthorized SAID.
Test strategy	
Notes	

TP ID	TP/BS/DS/DSA/BI-H002
IEEE 802.16 Reference	clauses 6.3.2.3.10 and 6.3.14.7.1.2
PICS Item	
Initial Condition	An SS-initiated DSA transaction has started.
Expected Behaviour	Check that: On receiving a DSA-REQ containing the Service Flow Parameters set to an unsupported value, the IUT sends a DSX-RVD and a DSA-RSP containing the Confirmation Code set to any reject reason.
Test strategy	
Notes	

TP ID	TP/BS/DS/DSA/BO-H000
IEEE 802.16 Reference	clause 6.3.14.9.3
PICS Item	
Initial Condition	IUT has completed initialization and is operating.
Expected Behaviour	Check that: On receiving a DSA-RSP message for a non-existing service flow, the IUT ignores the received message.
Test strategy	
Notes	

TP ID	TP/BS/DS/DSA/BO-H001
IEEE 802.16 Reference	clause 6.3.14.9.3
PICS Item	
Initial Condition	IUT has completed initialization and is operating. The IUT does not support the SS initiated dynamic service addition.
Expected Behaviour	Check that: On receiving a DSA-REQ, the IUT sends a DSA-RSP to indicate that the service is not allowed.
Test strategy	
Notes	

TP ID	TP/BS/DS/DSA/BO-H002
IEEE 802.16 Reference	clause 6.3.2.3.12
PICS Item	
Initial Condition	IUT is authorized and registered.
Expected Behaviour	Check that: On receiving a DSA-ACK for a non existing service flow, the IUT ignores the received DSA-ACK message.
Test strategy	
Notes	

TP ID	TP/BS/DS/DSA/BO-H003
IEEE 802.16 Reference	clauses 6.3.2.3.10, 6.3.2.3.11, 6.3.2.3.12 and 6.3.14.7.1.2
PICS Item	
Initial Condition	An SS-initiated DSA transaction has started. The IUT has received a valid DSA-REQ for a service flow and has sent a valid DSA-RSP accepting the DSA-REQ. Then the IUT has received a valid DSA-ACK and is now into DSA-Remote Holding down state of the DSA state machine.
Expected Behaviour	Check that: On receiving a DSA-REQ message, the IUT ignores the message and remains in DSA-Remote Holding down state of the DSA state machine.
Test strategy	
Notes	

TP ID	TP/BS/DS/DSA/BO-H004
IEEE 802.16 Reference	Figure "DSA - Remotely Initiated Transaction state transition diagram" Figure "DSA - Remotely Initiated Transaction DSA-ACK Pending state flow diagram"
PICS Item	
Initial Condition	An SS-initiated DSA transaction has started. The IUT is in the DSA-ACK Pending state.
Expected Behaviour	Check that: On receiving the SF Delete-Remote command, the IUT ends the DSA transaction.
Test strategy	
Notes	Requires a means of provoking the SF Delete-Remote; e.g. DSD-REQ or MIB command.

TP ID	TP/BS/DS/DSA/BO-H005
IEEE 802.16 Reference	Figure "DSA - Remotely Initiated Transaction state transition diagram" Figure "DSA - Remotely Initiated Transaction DSA-ACK Pending state flow diagram"
PICS Item	
Initial Condition	An SS-initiated DSA transaction has started. The IUT is in the DSA-ACK Pending state
Expected Behaviour	Check that: On receiving the SF Delete-Local command, the IUT sends no message and goes to the Deleting Service Flow state.
Test strategy	
Notes	Requires a means of provoking the SF Delete-Local; e.g. MIB command.

TP ID	TP/BS/DS/DSA/BO-H006
IEEE 802.16 Reference	Figure "DSA - Remotely Initiated Transaction state transition diagram" Figure "DSA - Remotely Initiated Transaction DSA-ACK Pending state flow diagram"
PICS Item	
Initial Condition	An SS-initiated DSA transaction has started. The IUT is in the DSA-ACK Pending state.
Expected Behaviour	Check that: On receiving the SF DSA-ACK Lost command and retries are available, the IUT retransmits the DSA-RSP and remains in the same state.
Test strategy	
Notes	Requires a means of provoking the SF DSA-ACK Lost; e.g. MIB command.

TP ID	TP/BS/DS/DSA/BO-H007
IEEE 802.16 Reference	Figure "DSA - Remotely Initiated Transaction state transition diagram" Figure "DSA - Remotely Initiated Transaction DSA-ACK Pending state flow diagram"
PICS Item	
Initial Condition	An SS-initiated DSA transaction has started. The IUT is in the DSA-ACK Pending state.
Expected Behaviour	Check that: On receiving the SF DSA-ACK Lost command and retries are exhausted, the IUT sends no message and remains in the same state.
Test strategy	
Notes	Requires a means of provoking the SF DSA-ACK Lost; e.g. MIB command.

TP ID	TP/BS/DS/DSA/BO-H008
IEEE 802.16 Reference	Figure "DSA - Remotely Initiated Transaction state transition diagram" Figure "DSA - Remotely Initiated Transaction Holding Down state flow diagram"
PICS Item	
Initial Condition	An SS-initiated DSA transaction has started. The IUT is in the Holding Down state.
Expected Behaviour	Check that: On receiving the SF Changed command, the IUT sends no message and ends the DSA transaction.
Test strategy	
Notes	Requires a means of provoking the SF Changed; e.g. MIB command.

TP ID	TP/BS/DS/DSA/BO-H009
IEEE 802.16 Reference	Figure "DSA - Remotely Initiated Transaction state transition diagram" Figure "DSA - Remotely Initiated Transaction Holding Down state flow diagram"
PICS Item	
Initial Condition	An SS-initiated DSA transaction has started. The IUT is in the Holding Down state.
Expected Behaviour	Check that: On receiving the SF Deleted command, the IUT sends no message and ends the DSA transaction.
Test strategy	
Notes	Requires a means of provoking the SF Deleted; e.g. MIB command.

TP ID	TP/BS/DS/DSA/BO-H010
IEEE 802.16 Reference	Figure "DSA - Remotely Initiated Transaction state transition diagram" Figure "DSA - Remotely Initiated Transaction Holding Down state flow diagram"
PICS Item	
Initial Condition	An SS-initiated DSA transaction has started. The IUT is in the Holding Down state.
Expected Behaviour	Check that: On receiving the SF Delete-Remote command, the IUT sends no message and ends the DSA transaction.
Test strategy	
Notes	Requires a means of provoking the SF Delete-Remote; e.g. DSD-REQ or MIB command.

TP ID	TP/BS/DS/DSA/BO-H011
IEEE 802.16 Reference	Figure "DSA - Remotely Initiated Transaction state transition diagram" Figure "DSA - Remotely Initiated Transaction Holding Down state flow diagram"
PICS Item	
Initial Condition	An SS-initiated DSA transaction has started. The IUT is in the Holding Down state.
Expected Behaviour	Check that: On receiving the SF Delete-Local command, the IUT sends no message and remains in the same state.
Test strategy	
Notes	Requires a means of provoking the SF Delete-Local; e.g. MIB command.

TP ID	TP/BS/DS/DSA/BO-H012
IEEE 802.16 Reference	Figure "DSA - Remotely Initiated Transaction state transition diagram" Figure "DSA - Remotely Initiated Transaction Holding Down state flow diagram"
PICS Item	
Initial Condition	An SS-initiated DSA transaction has started. The IUT is in the Holding Down state.
Expected Behaviour	Check that: On receiving the SF Change-Remote command, the IUT sends no message and ends the DSA transaction.
Test strategy	
Notes	Requires a means of provoking the SF Change-Remote; e.g. DSC-REQ or MIB command.

TP ID	TP/BS/DS/DSA/BO-H013
IEEE 802.16 Reference	Figure "DSA - Remotely Initiated Transaction state transition diagram" Figure "DSA - Remotely Initiated Transaction Deleting Service state flow diagram"
PICS Item	
Initial Condition	An SS-initiated DSA transaction has started. The IUT is in the Deleting Service Flow state.
Expected Behaviour	Check that: On receiving the SF Deleted command, the IUT sends no message and ends the DSA transaction.
Test strategy	
Notes	Requires a means of provoking the SF Deleted; e.g. MIB command.

TP ID	TP/BS/DS/DSA/BO-H014
IEEE 802.16 Reference	Figure "DSA - Remotely Initiated Transaction state transition diagram" Figure "DSA - Remotely Initiated Transaction Deleting Service state flow diagram"
PICS Item	
Initial Condition	An SS-initiated DSA transaction has started. The IUT is in the Deleting Service Flow state.
Expected Behaviour	Check that: On receiving the SF Delete-Remote command, the IUT sends no message and ends the DSA transaction.
Test strategy	
Notes	Requires a means of provoking the SF Delete-Remote; e.g. DSD-REQ or MIB command.

TP ID	TP/BS/DS/DSA/BO-H015
IEEE 802.16 Reference	Figure "DSA - Remotely Initiated Transaction state transition diagram" Figure "DSA - Remotely Initiated Transaction Deleting Service state flow diagram"
PICS Item	
Initial Condition	An SS-initiated DSA transaction has started. The IUT is in the Deleting Service Flow state.
Expected Behaviour	Check that: On receiving a DSA-REQ, the IUT sends no message and remains in the same state.
Test strategy	
Notes	

TP ID	TP/BS/DS/DSA/BO-H016
IEEE 802.16 Reference	Figure "DSA - Remotely Initiated Transaction state transition diagram" Figure "DSA - Remotely Initiated Transaction Deleting Service state flow diagram"
PICS Item	
Initial Condition	An SS-initiated DSA transaction has started. The IUT is in the Deleting Service Flow state.
Expected Behaviour	Check that: On receiving a DSA-ACK, the IUT sends no message and remains in the same state.
Test strategy	
Notes	

TP ID	TP/BS/DS/DSA/BO-H100
IEEE 802.16 Reference	Figure "DSA - Locally Initiated Transaction state transition diagram" Figure "DSA - Locally Initiated Transaction DSA-RSP Pending state flow diagram"
PICS Item	
Initial Condition	A BS-initiated DSA transaction has started. The IUT is in the DSA-RSP pending state.
Expected Behaviour	Check that: On receiving a SF Delete-Remote command for the pending DSA transaction, the IUT stops the Local DSA transaction.
Test strategy	
Notes	Requires a means of provoking the SF Delete-Remote; e.g. DSD-REQ or MIB command.

TP ID	TP/BS/DS/DSA/BO-H101
IEEE 802.16 Reference	Figure "DSA - Locally Initiated Transaction state transition diagram" Figure "DSA - Locally Initiated Transaction DSA-RSP Pending state flow diagram"
PICS Item	
Initial Condition	A BS-initiated DSA transaction has started. The IUT is in the DSA-RSP pending state.
Expected Behaviour	Check that: On receiving a SF Abort Add command for the pending DSA transaction, the IUT stops T7, starts T10, and goes to DSA Local Holding Down state.
Test strategy	
Notes	

TP ID	TP/BS/DS/DSA/BO-H102
IEEE 802.16 Reference	Figure "DSA - Locally Initiated Transaction state transition diagram" Figure "DSA - Locally Initiated Transaction Holding state flow diagram"
PICS Item	
Initial Condition	A BS-initiated DSA transaction has started. The IUT is in the Holding Down state.
Expected Behaviour	Check that: On receiving a SF Delete-Local command for the pending DSA transaction, the IUT sends no message and goes to the Deleting Service Flow state.
Test strategy	
Notes	Requires a means of provoking the SF Delete-Local; e.g. MIB command.

TP ID	TP/BS/DS/DSA/BO-H103
IEEE 802.16 Reference	Figure "DSA - Locally Initiated Transaction state transition diagram" Figure "DSA - Locally Initiated Transaction Holding state flow diagram"
PICS Item	
Initial Condition	A BS-initiated DSA transaction has started. The IUT is in the Holding Down state.
Expected Behaviour	Check that: On receiving a SF Changed command for the pending DSA transaction, the IUT sends no message and ends the DSA transaction.
Test strategy	
Notes	Requires a means of provoking the SF Changed; e.g. MIB command.

TP ID	TP/BS/DS/DSA/BO-H104
IEEE 802.16 Reference	Figure "DSA - Locally Initiated Transaction state transition diagram" Figure "DSA - Locally Initiated Transaction Holding state flow diagram"
PICS Item	
Initial Condition	A BS-initiated DSA transaction has started. The IUT is in the Holding Down state.
Expected Behaviour	Check that: On receiving a SF Change-Remote command for the pending DSA transaction, the IUT sends no message and ends the DSA transaction.
Test strategy	
Notes	Requires a means of provoking the SF Change-Remote; e.g. DSC-REQ or MIB command.

TP ID	TP/BS/DS/DSA/BO-H105
IEEE 802.16 Reference	Figure "DSA - Locally Initiated Transaction state transition diagram" Figure "DSA - Locally Initiated Transaction Holding state flow diagram"
PICS Item	
Initial Condition	A BS-initiated DSA transaction has started. The IUT is in the Holding Down state.
Expected Behaviour	Check that: On receiving a SF Delete-Remote command for the pending DSA transaction, the IUT sends no message and ends the DSA transaction.
Test strategy	
Notes	Requires a means of provoking the SF Delete-Remote; e.g. DSD-REQ or MIB command.

TP ID	TP/BS/DS/DSA/BO-H106
IEEE 802.16 Reference	Figure "DSA - Locally Initiated Transaction state transition diagram" Figure "DSA - Locally Initiated Transaction Retries Exhausted state flow diagram"
PICS Item	
Initial Condition	A BS-initiated DSA transaction has started. The IUT is in the Retries Exhausted state.
Expected Behaviour	Check that: On receiving a SF Delete-Remote command for the pending DSA transaction, the IUT sends no message and ends the DSA transaction.
Test strategy	
Notes	Requires a means of provoking the SF Delete-Remote; e.g. DSD-REQ or MIB command.

TP ID	TP/BS/DS/DSA/BO-H107
IEEE 802.16 Reference	Figure "DSA - Locally Initiated Transaction state transition diagram" Figure "DSA - Locally Initiated Transaction Retries Exhausted state flow diagram"
PICS Item	
Initial Condition	A BS-initiated DSA transaction has started. The IUT is in the Retries Exhausted state.
Expected Behaviour	Check that: On receiving a SF Abort Add command for the pending DSA transaction, the IUT sends no message and goes to the Holding Down state.
Test strategy	
Notes	Requires a means of provoking the SF Abort Add; e.g. MIB command.

TP ID	TP/BS/DS/DSA/BO-H108
IEEE 802.16 Reference	Figure "DSA - Locally Initiated Transaction state transition diagram" Figure "DSA - Locally Initiated Transaction Deleting Service Flow state flow diagram"
PICS Item	
Initial Condition	A BS-initiated DSA transaction has started. The IUT is in the Deleting Service Flow state.
Expected Behaviour	Check that: On receiving a DSA-RSP for the pending DSA transaction, the IUT retransmits the DSA-ACK and remains in the same state.
Test strategy	
Notes	

TP ID	TP/BS/DS/DSA/BO-H109
IEEE 802.16 Reference	Figure "DSA - Locally Initiated Transaction state transition diagram" Figure "DSA - Locally Initiated Transaction Deleting Service Flow state flow diagram"
PICS Item	
Initial Condition	A BS-initiated DSA transaction has started. The IUT is in the Deleting Service Flow state.
Expected Behaviour	Check that: On receiving a SF Deleted command for the pending DSA transaction, the IUT sends no message and ends the DSA transaction.
Test strategy	
Notes	Requires a means of provoking the SF Deleted; e.g. MIB command.

TP ID	TP/BS/DS/DSA/BO-H110
IEEE 802.16 Reference	Figure "DSA - Locally Initiated Transaction state transition diagram" Figure "DSA - Locally Initiated Transaction Deleting Service Flow state flow diagram"
PICS Item	
Initial Condition	A BS-initiated DSA transaction has started. The IUT is in the Deleting Service Flow state.
Expected Behaviour	Check that: On receiving an SF Delete-Remote command for the pending DSA transaction, the IUT sends no message and ends the DSA transaction.
Test strategy	
Notes	Requires a means of provoking the SF Delete-Remote; e.g. DSD-REQ or MIB command.

TP ID	TP/BS/DS/DSA/TI-H000
IEEE 802.16 Reference	clause 6.3.14.9.3
PICS Item	
Initial Condition	IUT is operating and has initiated establishing a DL service flow by sending a DSA-REQ.
Expected Behaviour	Check that: For an IUT initiated DSA procedure when each time timer T7 expires and no reply is received, the IUT re-sends a DSA-REQ for DSx Request Retries times.
Test strategy	
Notes	Requires a means to provoke the IUT to start the DSA transaction with a DSA-REQ.

TP ID	TP/BS/DS/DSA/TI-H001
IEEE 802.16 Reference	clause 6.3.14.9.3
PICS Item	
Initial Condition	IUT is operating and has initiated establishing a DL service flow by sending a DSA-REQ.
Expected Behaviour	Check that: For an IUT initiated DSA procedure, after DSx Request Retries times repetition of DSA-REQ sending and when timer T7 expires and no reply is received, the IUT does not re-send the DSA-REQ message and stops the initiated procedure.
Test strategy	
Notes	Requires a means to provoke the IUT to start the DSA transaction with a DSA-REQ.

TP ID	TP/BS/DS/DSA/TI-H002
IEEE 802.16 Reference	clause 6.3.14.9.3
PICS Item	
Initial Condition	IUT is operating and has initiated establishing a DL service flow by sending a DSA-REQ.
Expected Behaviour	Check that: Before expiry of timer T10 and on receiving a DSA-RSP containing the Confirmation Code set to OK/success for DSx Response Retries times, the IUT sends a DSA-ACK containing the Confirmation Code set to OK/success for each received DSA-RSP.
Test strategy	
Notes	Requires a means to provoke the IUT to start the DSA transaction with a DSA-REQ.

TP ID	TP/BS/DS/DSA/TI-H003
	Deleted

TP ID	TP/BS/DS/DSA/TI-H004
IEEE 802.16 Reference	clause 6.3.14.9.3
PICS Item	
Initial Condition	IUT is operating and has initiated establishing a DL service flow by sending a DSA-REQ.
Expected Behaviour	Check that: For an IUT initiated DSA procedure after DSx Request Retries times repetition of DSA-REQ sending and before timer T10 expires and on receiving a DSA-RSP containing the Confirmation Code set to reject-other, the IUT sends a DSA-ACK containing the Confirmation Code >0 (Reject-...).
Test strategy	
Notes	Requires a means to provoke the IUT to start the DSA transaction with a DSA-REQ.

TP ID	TP/BS/DS/DSA/TI-H005
IEEE 802.16 Reference	clause 6.3.14.9.3
PICS Item	
Initial Condition	IUT has completed initialization and is operating.
Expected Behaviour	Check that: On receiving a DSA-REQ for DSx Response Retries times each time before the expiry of timer T8, the IUT sends a DSA-RSP message for each received DSA-REQ message.
Test strategy	
Notes	

TP ID	TP/BS/DS/DSA/TI-H006
IEEE 802.16 Reference	clause 6.3.14.9.3
PICS Item	
Initial Condition	IUT has completed initialization and is operating.
Expected Behaviour	Check that: On receiving a DSA-REQ for more than DSx Response Retries times and each time before the expiry of timer T8, the IUT takes no action.
Test strategy	
Notes	

TP ID	TP/BS/DS/DSA/TI-H007
IEEE 802.16 Reference	clause 6.3.14.9.3
PICS Item	
Initial Condition	IUT has completed initialization and is operating. The IUT has received a DSA-REQ message, sent a DSX-RVD followed by a valid DSA-RSP, and started T8.
Expected Behaviour	Check that: On expiry of timer T8 without receiving a DSA-ACK, the IUT sends for DSx Response Retries times the DSA-RSP message each time restarting T8.
Test strategy	
Notes	

TP ID	TP/BS/DS/DSA/TI-H008
IEEE 802.16 Reference	clauses 6.3.2.3.10 and 6.3.14.7.1.1
PICS Item	
Initial Condition	IUT is authorized and registered. IUT has transmitted its first DSA-REQ.
Expected Behaviour	Check that: When each time timer T7 expires and no reply is received, the IUT re-sends, DSx Request Retries times, the DSA-REQ message and stops the initiated procedure.
Test strategy	
Notes	Requires a means to provoke the IUT to establish the service flow with a DSA-REQ.

TP ID	TP/BS/DS/DSA/TI-H009
IEEE 802.16 Reference	clauses 6.3.2.3.10, 6.3.2.3.11, 6.3.2.3.12 and 6.3.14.7.1.2
PICS Item	
Initial Condition	An SS-initiated DSA transaction has started. The IUT has received a valid DSA-REQ for a service flow and sent a valid DSX-RVD and DSA-RSP accepting the DSA-REQ.
Expected Behaviour	Check that: On expiry of timer T8 when the number of retries is exhausted and on no DSA-ACK message received, the IUT does not re-send the DSX-RVD and DSA-RSP messages and stops the procedure.
Test strategy	
Notes	

TP ID	TP/BS/DS/DSA/TI-H010
IEEE 802.16 Reference	Figure "DSA - Locally Initiated Transaction state transition diagram" Figure "DSA - Locally Initiated Transaction DSA-RSP Pending state flow diagram"
PICS Item	
Initial Condition	A BS-initiated DSA transaction has started. The IUT is in the DSA-RSP pending state.
Expected Behaviour	Check that: When T7 expires, no reply is received, and retries are exhausted, the IUT transmits no message, starts T10, and goes to the Retries Exhausted state.
Test strategy	
Notes	

TP ID	TP/BS/DS/DSA/TI-H011
IEEE 802.16 Reference	Figure "DSA - Locally Initiated Transaction state transition diagram" Figure "DSA - Locally Initiated Transaction Holding state flow diagram"
PICS Item	
Initial Condition	A BS-initiated DSA transaction has started. The IUT is in the Holding Down state.
Expected Behaviour	Check that: When T10 expires, the IUT ends the DSA transaction.
Test strategy	
Notes	

TP ID	TP/BS/DS/DSA/TI-H012
IEEE 802.16 Reference	Figure "DSA - Locally Initiated Transaction state transition diagram" Figure "DSA - Locally Initiated Transaction Retries Exhausted state flow diagram"
PICS Item	
Initial Condition	A BS-initiated DSA transaction has started. The IUT is in the Retries Exhausted state.
Expected Behaviour	Check that: On T10 expiry without receiving any messages, the IUT ends the DSA transaction.
Test strategy	
Notes	

TP ID	TP/BS/DS/DSA/TI-H013
IEEE 802.16 Reference	Figure "DSA - Locally Initiated Transaction state transition diagram" Figure "DSA - Locally Initiated Transaction Deleting Service Flow state flow diagram"
PICS Item	
Initial Condition	A BS-initiated DSA transaction has started. The IUT is in the Deleting Service Flow state.
Expected Behaviour	Check that: On T10 expiry without receiving any messages, the IUT ends the DSA transaction.
Test strategy	
Notes	

TP ID	TP/BS/DS/DSA/TI-H014
IEEE 802.16 Reference	Figure "DSA - Remotely Initiated Transaction state transition diagram" Figure "DSA - Remotely Initiated Transaction DSA-ACK Pending state flow diagram"
PICS Item	
Initial Condition	An SS-initiated DSA transaction has started. The IUT is in the DSA-ACK Pending state.
Expected Behaviour	Check that: On T8 expiry and Retries Exhausted, the IUT sends no message and ends the DSA transaction.
Test strategy	
Notes	

TP ID	TP/BS/DS/DSA/TI-H015
IEEE 802.16 Reference	Figure "DSA - Remotely Initiated Transaction state transition diagram" Figure "DSA - Remotely Initiated Transaction Holding Down state flow diagram"
PICS Item	
Initial Condition	An SS-initiated DSA transaction has started. The IUT is in the Holding Down state
Expected Behaviour	Check that: On T8 expiry without receiving any messages, the IUT ends the DSA transaction.
Test strategy	
Notes	

TP ID	TP/BS/DS/DSA/TI-H016
IEEE 802.16 Reference	Figure "DSA - Remotely Initiated Transaction state transition diagram" Figure "DSA - Remotely Initiated Transaction Deleting Service state flow diagram"
PICS Item	
Initial Condition	An SS-initiated DSA transaction has started. The IUT is in the Deleting Service Flow state.
Expected Behaviour	Check that: On T10 expiry, the IUT sends no message and ends the DSA transaction.
Test strategy	
Notes	

5.2.5.2   Dynamic Services Change (DSC)

TP ID	TP/BS/DS/DSC/BV-H000
IEEE 802.16 Reference	clause 6.3.14.9.4
PICS Item	
Initial Condition	IUT has completed initialization and is operating. A bidirectional service flow is established.
Expected Behaviour	Check that: To change an established bidirectional Service flow, the IUT sends two DSC-REQ, one to modify the UL portion and one to modify the DL portion.
Test strategy	
Notes	Requires a means to provoke the IUT to start the DSC transaction for a bidirectional service flow with a DSC-REQ.

TP ID	TP/BS/DS/DSC/BV-H001
IEEE 802.16 Reference	clause 6.3.14.9.4
PICS Item	
Initial Condition	IUT is operating and has initiated changing a bidirectional service flow by sending a DSC-REQ for the UL service flow and a DSC-REQ for a DL service flow.
Expected Behaviour	Check that: On receiving a DSC-RSP containing the Confirmation Code set to OK/success, the IUT sends a DSC-ACK containing the Confirmation Code set to OK/success.
Test strategy	
Notes	Requires a means to provoke the IUT to start the DSC transaction with a DSC-REQ.

TP ID	TP/BS/DS/DSC/BV-H002
IEEE 802.16 Reference	clause 6.3.14.9.4
PICS Item	
Initial Condition	IUT has completed initialization and is operating. A DL service flow is established.
Expected Behaviour	Check that: To change an established DL Service flow, the IUT sends a DSC-REQ to change the DL parameters of the service flow.
Test strategy	
Notes	Requires a means to provoke the IUT to start the DSC transaction for a service flow with a DSC-REQ.

TP ID	TP/BS/DS/DSC/BV-H003
IEEE 802.16 Reference	clause 6.3.14.9.4
PICS Item	
Initial Condition	IUT is operating and has initiated changing a DL service flow by sending a DSC-REQ with DL parameters.
Expected Behaviour	Check that: On receiving a DSC-RSP containing the Confirmation Code set to OK/success, the IUT sends a DSC-ACK containing the Confirmation Code set to OK/success.
Test strategy	
Notes	Requires a means to provoke the IUT to start the DSC transaction with a DSC-REQ.

TP ID	TP/BS/DS/DSC/BV-H004
IEEE 802.16 Reference	clause 6.3.14.9.4
PICS Item	
Initial Condition	IUT has completed initialization and is operating. A UL service flow is established.
Expected Behaviour	Check that: To change an established UL Service flow, the IUT sends a DSC-REQ to change the UL parameters of the service flow.
Test strategy	
Notes	Requires a means to provoke the IUT to start the DSC transaction for a service flow with a DSC-REQ.

TP ID	TP/BS/DS/DSC/BV-H005
IEEE 802.16 Reference	clause 6.3.14.9.4
PICS Item	
Initial Condition	IUT is operating and has initiated changing a UL service flow by sending a DSC-REQ with UL parameters.
Expected Behaviour	Check that: On receiving a DSC-RSP containing the Confirmation Code set to OK/success, the IUT sends a DSC-ACK containing the Confirmation Code set to OK/success.
Test strategy	
Notes	Requires a means to provoke the IUT to start the DSC transaction with a DSC-REQ.

TP ID	TP/BS/DS/DSC/BV-H006
IEEE 802.16 Reference	clause 6.3.14.9.4
PICS Item	
Initial Condition	IUT is operating and has initiated changing a service flow by sending a DSC-REQ. The IUT has received the DSC-RSP message and has sent the DSC-ACK message (state is DSC - Local Holding Down).
Expected Behaviour	Check that: On receiving a redundant copy of the DSC-RSP message within a time no longer than the maximum value of timer T10, the IUT re-sends the DSC-ACK message.
Test strategy	
Notes	Requires a means to provoke the IUT to start the DSC transaction with a DSC-REQ.

TP ID	TP/BS/DS/DSC/BV-H007
IEEE 802.16 Reference	clause 6.3.14.9.4
PICS Item	
Initial Condition	IUT is operating and has initiated changing a UL service flow by sending a DSC-REQ with UL parameters.
Expected Behaviour	Check that: On receiving a DSC-RSP containing the Confirmation Code set to reject-other, the IUT sends a DSC-ACK containing the Confirmation Code set to OK/success.
Test strategy	
Notes	Requires a means to provoke the IUT to start the DSC transaction with a DSC-REQ.

TP ID	TP/BS/DS/DSC/BV-H008
IEEE 802.16 Reference	clause 6.3.14.9.4
PICS Item	
Initial Condition	IUT has completed initialization and is operating. A service flow is established.
Expected Behaviour	Check that: On receiving a DSC-REQ, the IUT sends a DSX-RVD containing the Confirmation Code set to OK/success and then sends a DSC-RSP containing the Confirmation Code set to OK/success.
Test strategy	
Notes	

TP ID	TP/BS/DS/DSC/BV-H009
IEEE 802.16 Reference	clause 6.3.14.9.4
PICS Item	
Initial Condition	IUT has completed initialization and is operating. A service flow is established.
Expected Behaviour	Check that: On receiving a DSC-REQ containing the Service Flow Parameters set to an unsupported value, the IUT sends a DSX-RVD containing the Confirmation Code set to OK/success and then sends a DSC-RSP containing the Confirmation Code set to any reject reason.
Test strategy	
Notes	

TP ID	TP/BS/DS/DSC/BV-H010
IEEE 802.16 Reference	clause 6.3.14.9.4
PICS Item	
Initial Condition	IUT has completed initialization and is operating. A service flow is established. The IUT has received a DSC-REQ message and has sent a DSX-RVD message followed by a DSC-RSP message. The IUT is now in DSC-Remote DSC-ACK pending state.
Expected Behaviour	Check that: On receiving a DSC-ACK containing the Confirmation Code set to OK/success, the IUT accepts this message.
Test strategy	
Notes	

TP ID	TP/BS/DS/DSC/BV-H011
IEEE 802.16 Reference	clause 6.3.14.9.4
PICS Item	
Initial Condition	IUT has completed initialization and is operating. A service flow is established. The IUT has received a DSC-REQ message and has sent a DSX-RVD message followed by a DSC-RSP message. The IUT is now in DSC-Remote DSC-ACK pending state.
Expected Behaviour	Check that: On receiving a DSC-ACK containing the Confirmation Code set to reject-other, the IUT accepts this message.
Test strategy	
Notes	

TP ID	TP/BS/DS/DSC/BV-H012
IEEE 802.16 Reference	clause 6.3.14.9.4
PICS Item	
Initial Condition	IUT has completed initialization and is operating. A service flow is established. The IUT has received a DSC-REQ message and has sent a DSX-RVD message followed by a DSC-RSP message. Then the IUT has received a DSC-ACK message. The IUT is now in DSC-Remote Holding down state.
Expected Behaviour	Check that: On receiving a DSC-ACK containing the Confirmation Code set to OK/success, the IUT takes no action.
Test strategy	
Notes	

TP ID	TP/BS/DS/DSC/BV-H013
IEEE 802.16 Reference	clause 6.3.14.9.4
PICS Item	
Initial Condition	IUT has completed initialization and is operating. A service flow is established. The IUT has received a DSC-REQ message and has sent a DSX-RVD message followed by a DSC-RSP message. Then the IUT has received a DSC-ACK message. The IUT is now in DSC-Remote Holding down state.
Expected Behaviour	Check that: On receiving a DSC-ACK containing the Confirmation Code set to reject-other, the IUT takes no action.
Test strategy	
Notes	

TP ID	TP/BS/DS/DSC/BV-H014
IEEE 802.16 Reference	clause 6.3.14.9.4
PICS Item	
Initial Condition	IUT has completed initialization and is operating. A UGS service flow is established. The IUT has received a DSC-REQ message for obtaining the Maximum Sustained Traffic Rate and has sent a DSC-RSP message.
Expected Behaviour	Check that: On receiving a DSC-ACK, the IUT changes the bandwidth to the new allocated Maximum Sustained Traffic Rate.
Test strategy	
Notes	

TP ID	TP/BS/DS/DSC/BV-H015
IEEE 802.16 Reference	clauses 6.3.14.9.4.1 and 6.3.2.3.13
PICS Item	
Initial Condition	IUT is authorized, registered and a DS flow is established. The IUT has sent a DSC-REQ message.
Expected Behaviour	Check that: On receiving a DSC-REQ, the IUT respects the priority, aborts its transaction if required, and sends a valid DSC-RSP.
Test strategy	
Notes	Requires a means to provoke the IUT to change the service flow with a DSC-REQ.

TP ID	TP/BS/DS/DSC/BV-H016
IEEE 802.16 Reference	clauses 6.3.14.9.4.1 and 6.3.2.3.13
PICS Item	
Initial Condition	IUT is authorized, registered and a DS flow is established. The IUT has sent a DSC-REQ message.
Expected Behaviour	Check that: On receiving a DSC-RSP containing the Confirmation Code set to OK/success and then a DSC-REQ, the IUT sends a DSC-ACK, respects the priority, aborts its transaction if required, and sends a valid DSC-RSP.
Test strategy	
Notes	Requires a means to provoke the IUT to change the service flow with a DSC-REQ.

TP ID	TP/BS/DS/DSC/BV-H017
IEEE 802.16 Reference	Figure "DSC - Locally Initiated Transaction state transition diagram" Figure "DSC - Locally Initiated Transaction DSC-RSP Pending state flow diagram"
PICS Item	
Initial Condition	IUT is operating and a service flow is established. A BS-Initiated DSC transaction has started. The IUT is in the DSC-RSP Pending state.
Expected Behaviour	Check that: On receiving a DSX-RVD, the IUT sends no message, stops T14, and remains in the same state.
Test strategy	
Notes	

TP ID	TP/BS/DS/DSC/BV-H018
IEEE 802.16 Reference	Figure "DSC - Locally Initiated Transaction state transition diagram" Figure "DSC - Locally Initiated Transaction Retries Exhausted state flow diagram"
PICS Item	
Initial Condition	IUT is operating and a service flow is established. A BS-Initiated DSC transaction has started. The IUT is in the Retries Exhausted state.
Expected Behaviour	Check that: On receiving a DSC-RSP accepting the change, the IUT transmits a DSC-ACK, incorporates the changes, starts T10, and goes to the Holding Down state.
Test strategy	
Notes	

TP ID	TP/BS/DS/DSC/BV-H019
IEEE 802.16 Reference	Figure "DSC - Locally Initiated Transaction state transition diagram" Figure "DSC - Locally Initiated Transaction Retries Exhausted state flow diagram"
PICS Item	
Initial Condition	IUT is operating and a service flow is established. A BS-Initiated DSC transaction has started. The IUT is in the Retries Exhausted state.
Expected Behaviour	Check that: On receiving a DSC-RSP refusing the change, the IUT transmits a DSC-ACK, starts T10, and goes to the Holding Down state.
Test strategy	
Notes	

TP ID	TP/BS/DS/DSC/BV-H020
IEEE 802.16 Reference	Figure "DSC - Remotely Initiated Transaction state transition diagram" Figure "DSC - Remotely Initiated Transaction DSC-ACK Pending state flow diagram"
PICS Item	
Initial Condition	IUT is operating and a service flow is established. An SS Initiated DSC transaction has started. The IUT is in the DSC-ACK Pending state.
Expected Behaviour	Check that: On receiving a DSC-REQ and retries are available, the IUT retransmits the DSC-RSP and remains in the same state.
Test strategy	
Notes	

TP ID	TP/BS/DS/DSC/BV-H021
IEEE 802.16 Reference	Figure "DSC - Remotely Initiated Transaction state transition diagram" Figure "DSC - Remotely Initiated Transaction DSC-ACK Pending state flow diagram"
PICS Item	
Initial Condition	IUT is operating and a service flow is established. An SS-Initiated DSC transaction has started. The IUT is in the DSC-ACK Pending state.
Expected Behaviour	Check that: On receiving a DSC-REQ and retries are exhausted, the IUT sends no message and remains in the same state.
Test strategy	
Notes	

TP ID	TP/BS/DS/DSC/BI-H000
IEEE 802.16 Reference	clause 6.3.14.9.4
PICS Item	
Initial Condition	IUT is operating and has initiated changing a service flow by sending a DSC-REQ.
Expected Behaviour	Check that: On receiving an erroneous DSC-RSP, the IUT re-sends the DSC-ACK message.
Test strategy	
Notes	Requires a means to provoke the IUT to start the DSC transaction with a DSC-REQ.

TP ID	TP/BS/DS/DSC/BI-H001
IEEE 802.16 Reference	clause 6.3.14.9.4
PICS Item	
Initial Condition	IUT has completed initialization and is operating. A DL service flow is established.
Expected Behaviour	Check that: To change an established DL Service flow, the IUT sends a DSC-REQ that does not include following TLV encoding: Service class name, Service Flow Error, Errored Parameter, Error Code, Error Message, Request/Transmission Policy, Fixed vs. Variable Length SDU Indicator, SDU Size, and Convergence Sub layer Specification.
Test strategy	
Notes	Requires a means to provoke the IUT to start the DSC transaction for a service flow with a DSC-REQ.

TP ID	TP/BS/DS/DSC/BI-H002
IEEE 802.16 Reference	clauses 6.3.14.9.4.2 and 6.3.2.3.13
PICS Item	
Initial Condition	IUT is authorized, registered and a DS flow is established.
Expected Behaviour	Check that: On receiving an erroneous DSC-REQ, the IUT sends a DSC-RSP message indicating the error.
Test strategy	
Notes	

TP ID	TP/BS/DS/DSC/BI-H003
IEEE 802.16 Reference	clauses 6.3.14.9.4.2 and 6.3.2.3.13
PICS Item	
Initial Condition	IUT is authorized, registered and a DS flow is established. The IUT has received DSC-REQ to which it has sent a DSX-RVD and DSC-RSP.
Expected Behaviour	Check that: On receiving an erroneous DSC-ACK, the IUT re-sends the previously saved DSC-RVD and DSC-RSP.
Test strategy	
Notes	

TP ID	TP/BS/DS/DSC/BO-H000
IEEE 802.16 Reference	clause 6.3.14.9.4
PICS Item	
Initial Condition	IUT has completed initialization and is operating. A service flow is established.
Expected Behaviour	Check that: On receiving a DSC-RSP for a non existing service flow, the IUT ignores the received message.
Test strategy	
Notes	

TP ID	TP/BS/DS/DSC/BO-H001
IEEE 802.16 Reference	clause 6.3.14.9.4
PICS Item	
Initial Condition	IUT is operating and has initiated changing a service flow by sending a DSC-REQ. The IUT has received the DSC_RSP message, has sent the DSC-ACK message. (state is DSC - Local Holding Down), and has started T10.
Expected Behaviour	Check that: On receiving a DSC-RSP for the existing service flow after the expiry of T10, the IUT ignores the received message.
Test strategy	
Notes	Requires a means to provoke the IUT to start the DSC transaction with a DSC-REQ.

TP ID	TP/BS/DS/DSC/BO-H002
IEEE 802.16 Reference	clause 6.3.14.9.3
PICS Item	
Initial Condition	IUT has completed initialization and is operating. A service flow is established. The IUT does not support the SS initiated dynamic service.
Expected Behaviour	Check that: On receiving a DSC-REQ, the IUT sends a DSC-RSP to indicate that the service is not allowed.
Test strategy	
Notes	

TP ID	TP/BS/DS/DSC/BO-H003
IEEE 802.16 Reference	clause 6.3.14.9.4
PICS Item	
Initial Condition	IUT is operating and has initiated changing a service flow by sending a DSC-REQ (state is DSC-Local DSC-RSP Pending).
Expected Behaviour	Check that: On receiving a DSC-REQ, the IUT ignores the received DSC-REQ, and on receiving a DSC-RSP containing the Confirmation Code set to OK/success, sends a DSC-ACK containing the Confirmation Code set to OK/success.
Test strategy	
Notes	Requires a means to provoke the IUT to start the DSC transaction with a DSC-REQ.

TP ID	TP/BS/DS/DSC/BO-H100
IEEE 802.16 Reference	clauses 6.3.14.9.4.2 and 6.3.2.3.15
PICS Item	
Initial Condition	IUT is authorized, registered and a DS flow is established.
Expected Behaviour	Check that: On receiving a DSC-ACK for a non existing service flow, the IUT ignores the message.
Test strategy	
Notes	

TP ID	TP/BS/DS/DSC/BO-H101
IEEE 802.16 Reference	Figure "DSC - Locally Initiated Transaction state transition diagram" Figure "DSC - Locally Initiated Transaction DSC-RSP Pending state flow diagram"
PICS Item	
Initial Condition	IUT is operating and a service flow is established. A BS-Initiated DSC transaction has started. The IUT is in the DSC-RSP Pending state.
Expected Behaviour	Check that: On receiving the command SF DSC-REQ Lost and retries are available, the IUT resends the DSC-REQ and remains in the same state.
Test strategy	
Notes	Requires a means of provoking the SF DSC-REQ Lost; e.g. MIB command.

TP ID	TP/BS/DS/DSC/BO-H102
IEEE 802.16 Reference	Figure "DSC - Locally Initiated Transaction state transition diagram" Figure "DSC - Locally Initiated Transaction DSC-RSP Pending state flow diagram"
PICS Item	
Initial Condition	IUT is operating and a service flow is established. A BS-Initiated DSC transaction has started. The IUT is in the DSC-RSP Pending state.
Expected Behaviour	Check that: On receiving the command SF DSC-REQ Lost and retries are exhausted, the IUT sends no message and remains in the same state.
Test strategy	
Notes	Requires a means of provoking the SF DSC-REQ Lost; e.g. MIB command.

TP ID	TP/BS/DS/DSC/BO-H103
IEEE 802.16 Reference	Figure "DSC - Locally Initiated Transaction state transition diagram" Figure "DSC - Locally Initiated Transaction DSC-RSP Pending state flow diagram"
PICS Item	
Initial Condition	IUT is operating and a service flow is established. A BS-Initiated DSC transaction has started. The IUT is in the DSC-RSP Pending state.
Expected Behaviour	Check that: On receiving the command SF Change-Remote, the IUT ends the DSC transaction.
Test strategy	
Notes	Requires a means of provoking the SF Change-Remote; e.g. DSC-REQ or MIB command.

TP ID	TP/BS/DS/DSC/BO-H104
IEEE 802.16 Reference	Figure "DSC - Locally Initiated Transaction state transition diagram" Figure "DSC - Locally Initiated Transaction DSC-RSP Pending state flow diagram"
PICS Item	
Initial Condition	IUT is operating and a service flow is established. A BS-Initiated DSC transaction has started. The IUT is in the DSC-RSP Pending state.
Expected Behaviour	Check that: On receiving the command SF Delete-Remote, the IUT ends the DSC transaction.
Test strategy	
Notes	Requires a means of provoking the SF Delete-Remote; e.g. DSD-REQ or MIB command.

TP ID	TP/BS/DS/DSC/BO-H105
IEEE 802.16 Reference	Figure "DSC - Locally Initiated Transaction state transition diagram" Figure "DSC - Locally Initiated Transaction DSC-RSP Pending state flow diagram"
PICS Item	
Initial Condition	IUT is operating and a service flow is established. A BS-Initiated DSC transaction has started. The IUT is in the DSC-RSP Pending state.
Expected Behaviour	Check that: On receiving the command SF Delete-Local, the IUT stops T7, starts T10, and goes to the Deleting Service flow state.
Test strategy	
Notes	Requires a means of provoking the SF Delete-Local; e.g. MIB command.

TP ID	TP/BS/DS/DSC/BO-H106
IEEE 802.16 Reference	Figure "DSC - Locally Initiated Transaction state transition diagram" Figure "DSC - Locally Initiated Transaction Holding Down state flow diagram"
PICS Item	
Initial Condition	IUT is operating and a service flow is established. A BS-Initiated DSC transaction has started. The IUT is in the Holding Down state.
Expected Behaviour	Check that: On receiving the command SF Changed, the IUT sends no message and ends the DSC transaction.
Test strategy	
Notes	Requires a means of provoking the SF Changed; e.g. MIB command.

TP ID	TP/BS/DS/DSC/BO-H107
IEEE 802.16 Reference	Figure "DSC - Locally Initiated Transaction state transition diagram" Figure "DSC - Locally Initiated Transaction Holding Down state flow diagram"
PICS Item	
Initial Condition	IUT is operating and a service flow is established. A BS-Initiated DSC transaction has started. The IUT is in the Holding Down state.
Expected Behaviour	Check that: On receiving the command SF Change-Remote, the IUT sends no message and ends the DSC transaction.
Test strategy	
Notes	Requires a means of provoking the SF Change-Remote; e.g. DSC-REQ or MIB command.

TP ID	TP/BS/DS/DSC/BO-H108
IEEE 802.16 Reference	Figure "DSC - Locally Initiated Transaction state transition diagram" Figure "DSC - Locally Initiated Transaction Holding Down state flow diagram"
PICS Item	
Initial Condition	IUT is operating and a service flow is established. A BS-Initiated DSC transaction has started. The IUT is in the Holding Down state.
Expected Behaviour	Check that: On receiving the command SF Delete-Remote, the IUT sends no message and ends the DSC transaction.
Test strategy	
Notes	Requires a means of provoking the SF Delete-Remote; e.g. DSD-REQ or MIB command.

TP ID	TP/BS/DS/DSC/BO-H109
IEEE 802.16 Reference	Figure "DSC - Locally Initiated Transaction state transition diagram" Figure "DSC - Locally Initiated Transaction Holding Down state flow diagram"
PICS Item	
Initial Condition	IUT is operating and a service flow is established. A BS-Initiated DSC transaction has started. The IUT is in the Holding Down state.
Expected Behaviour	Check that: On receiving the command SF Delete-Local, the IUT sends no message and goes to the Deleting Service Flow state.
Test strategy	
Notes	Requires a means of provoking the SF Delete-Local; e.g. MIB command.

TP ID	TP/BS/DS/DSC/BO-H110
IEEE 802.16 Reference	Figure "DSC - Locally Initiated Transaction state transition diagram" Figure "DSC - Locally Initiated Transaction Retries Exhausted state flow diagram"
PICS Item	
Initial Condition	IUT is operating and a service flow is established. A BS-Initiated DSC transaction has started. The IUT is in the Retries Exhausted state.
Expected Behaviour	Check that: On receiving the command SF Delete-Remote, the IUT sends no message and ends the DSC transaction.
Test strategy	
Notes	Requires a means of provoking the SF Delete-Remote; e.g. DSD-REQ or MIB command.

TP ID	TP/BS/DS/DSC/BO-H111
IEEE 802.16 Reference	Figure "DSC - Locally Initiated Transaction state transition diagram" Figure "DSC - Locally Initiated Transaction Retries Exhausted state flow diagram"
PICS Item	
Initial Condition	IUT is operating and a service flow is established. A BS-Initiated DSC transaction has started. The IUT is in the Retries Exhausted state.
Expected Behaviour	Check that: On receiving the command SF Delete-Local, the IUT sends no message and goes to the Deleting Service Flow state.
Test strategy	
Notes	Requires a means of provoking the SF Delete-Local; e.g. MIB command.

TP ID	TP/BS/DS/DSC/BO-H112
IEEE 802.16 Reference	Figure "DSC - Locally Initiated Transaction state transition diagram" Figure "DSC - Locally Initiated Transaction Deleting Service Flow state flow diagram"
PICS Item	
Initial Condition	IUT is operating and a service flow is established. A BS-Initiated DSC transaction has started. The IUT is in the Deleting Service Flow state.
Expected Behaviour	Check that: On receiving the command SF Deleted, the IUT sends no message and ends the DSC transaction.
Test strategy	
Notes	Requires a means of provoking the SF Deleted; e.g. MIB command.

TP ID	TP/BS/DS/DSC/BO-H113
IEEE 802.16 Reference	Figure "DSC - Locally Initiated Transaction state transition diagram" Figure "DSC - Locally Initiated Transaction Deleting Service Flow state flow diagram"
PICS Item	
Initial Condition	IUT is operating and a service flow is established. A BS-Initiated DSC transaction has started. The IUT is in the Deleting Service Flow state.
Expected Behaviour	Check that: On receiving the command SF Delete-Remote, the IUT sends no message and ends the DSC transaction.
Test strategy	
Notes	Requires a means of provoking the SF Delete-Remote; e.g. DSD-REQ or MIB command.

TP ID	TP/BS/DS/DSC/BO-H114
IEEE 802.16 Reference	Figure "DSC - Locally Initiated Transaction state transition diagram" Figure "DSC - Locally Initiated Transaction Deleting Service Flow state flow diagram"
PICS Item	
Initial Condition	IUT is operating and a service flow is established. A BS-Initiated DSC transaction has started. The IUT is in the Deleting Service Flow state.
Expected Behaviour	Check that: On receiving a DSC-RSP, the IUT sends no message and remains in the same state.
Test strategy	
Notes	

TP ID	TP/BS/DS/DSC/BO-H200
IEEE 802.16 Reference	clauses 6.3.14.9.4.2 and 6.3.2.3.15
PICS Item	
Initial Condition	IUT is authorized, registered and a DS flow is established. The IUT has received a DSC-REQ, has then sent a DSC-RSP and has then received a DSA-ACK.
Expected Behaviour	Check that: On receiving a redundant copy of the previously received DSC-REQ, the IUT ignores the message.
Test strategy	
Notes	

TP ID	TP/BS/DS/DSC/BO-H201
IEEE 802.16 Reference	clauses 6.3.14.9.4.2 and 6.3.2.3.15
PICS Item	
Initial Condition	IUT is authorized, registered and a DS flow is established. The IUT has received a DSC-REQ, has then sent a DSC-RSP and has then received a DSA-ACK.
Expected Behaviour	Check that: On receiving a redundant copy of the previously received DSC-ACK, the IUT ignores the message.
Test strategy	
Notes	

TP ID	TP/BS/DS/DSC/BO-H202
IEEE 802.16 Reference	Figure "DSC - Remotely Initiated Transaction state transition diagram" Figure "DSC - Remotely Initiated Transaction DSC-ACK Pending state flow diagram"
PICS Item	
Initial Condition	IUT is operating and a service flow is established. An SS-Initiated DSC transaction has started. The IUT is in the DSC-ACK Pending state.
Expected Behaviour	Check that: On receiving the SF DSC-ACK Lost command and retries are available, the IUT retransmits the DSC-RSP and remains in the same state.
Test strategy	
Notes	Requires a means of provoking the SF DSC-ACK Lost; e.g. MIB command.

TP ID	TP/BS/DS/DSC/BO-H203
IEEE 802.16 Reference	Figure "DSC - Remotely Initiated Transaction state transition diagram" Figure "DSC - Remotely Initiated Transaction DSC-ACK Pending state flow diagram"
PICS Item	
Initial Condition	IUT is operating and a service flow is established. An SS-Initiated DSC transaction has started. The IUT is in the DSC-ACK Pending state.
Expected Behaviour	Check that: On receiving the SF DSC-ACK Lost command and retries are exhausted, the IUT sends no message and remains in the same state.
Test strategy	
Notes	Requires a means of provoking the SF DSC-ACK Lost; e.g. MIB command.

TP ID	TP/BS/DS/DSC/BO-H204
IEEE 802.16 Reference	Figure "DSC - Remotely Initiated Transaction state transition diagram" Figure "DSC - Remotely Initiated Transaction DSC-ACK Pending state flow diagram"
PICS Item	
Initial Condition	IUT is operating and a service flow is established. An SS-Initiated DSC transaction has started. The IUT is in the DSC-ACK Pending state.
Expected Behaviour	Check that: On receiving the SF Delete-Remote command, the IUT sends no message and ends the DSC transaction.
Test strategy	
Notes	Requires a means of provoking the SF Delete-Remote; e.g. DSD-REQ or MIB command.

TP ID	TP/BS/DS/DSC/BO-H205
IEEE 802.16 Reference	Figure "DSC - Remotely Initiated Transaction state transition diagram" Figure "DSC - Remotely Initiated Transaction DSC-ACK Pending state flow diagram"
PICS Item	
Initial Condition	IUT is operating and a service flow is established. An SS-Initiated DSC transaction has started. The IUT is in the DSC-ACK Pending state.
Expected Behaviour	Check that: On receiving the SF Change-Local command, the IUT sends no message and ends the DSC transaction.
Test strategy	
Notes	Requires a means of provoking the SF Change-Local; e.g. MIB command.

TP ID	TP/BS/DS/DSC/BO-H206
IEEE 802.16 Reference	Figure "DSC - Remotely Initiated Transaction state transition diagram" Figure "DSC - Remotely Initiated Transaction DSC-ACK Pending state flow diagram"
PICS Item	
Initial Condition	IUT is operating and a service flow is established. An SS-Initiated DSC transaction has started. The IUT is in the DSC-ACK Pending state.
Expected Behaviour	Check that: On receiving the SF Delete-Local command, the IUT sends no message, stops T8, starts T10, and goes to the Deleting Service Flow state.
Test strategy	
Notes	Requires a means of provoking the SF Delete-Local; e.g. MIB command.

TP ID	TP/BS/DS/DSC/BO-H207
IEEE 802.16 Reference	Figure "DSC - Remotely Initiated Transaction state transition diagram" Figure "DSC - Remotely Initiated Transaction Holding Down state flow diagram"
PICS Item	
Initial Condition	IUT is operating and a service flow is established. An SS-Initiated DSC transaction has started. The IUT is in the Holding Down state.
Expected Behaviour	Check that: On receiving the SF Changed command, the IUT sends no message and ends the DSC transaction.
Test strategy	
Notes	Requires a means of provoking the SF Changed; e.g. MIB command.

TP ID	TP/BS/DS/DSC/BO-H208
IEEE 802.16 Reference	Figure "DSC - Remotely Initiated Transaction state transition diagram" Figure "DSC - Remotely Initiated Transaction Holding Down state flow diagram"
PICS Item	
Initial Condition	IUT is operating and a service flow is established. An SS-Initiated DSC transaction has started. The IUT is in the Holding Down state.
Expected Behaviour	Check that: On receiving the SF Deleted command, the IUT sends no message and ends the DSC transaction.
Test strategy	
Notes	Requires a means of provoking the SF Deleted; e.g. MIB command.

TP ID	TP/BS/DS/DSC/BO-H209
IEEE 802.16 Reference	Figure "DSC - Remotely Initiated Transaction state transition diagram" Figure "DSC - Remotely Initiated Transaction Holding Down state flow diagram"
PICS Item	
Initial Condition	IUT is operating and a service flow is established. An SS-Initiated DSC transaction has started. The IUT is in the Holding Down state.
Expected Behaviour	Check that: On receiving the SF Delete-Remote command, the IUT sends no message and ends the DSC transaction.
Test strategy	
Notes	Requires a means of provoking the SF Delete-Remote; e.g. DSD-REQ or MIB command.

TP ID	TP/BS/DS/DSC/BO-H210
IEEE 802.16 Reference	Figure "DSC - Remotely Initiated Transaction state transition diagram" Figure "DSC - Remotely Initiated Transaction Holding Down state flow diagram"
PICS Item	
Initial Condition	IUT is operating and a service flow is established. An SS-Initiated DSC transaction has started. The IUT is in the Holding Down state.
Expected Behaviour	Check that: On receiving the SF Change-Local command, the IUT sends no message and ends the DSC transaction.
Test strategy	
Notes	Requires a means of provoking the SF Change-Local; e.g. MIB command.

TP ID	TP/BS/DS/DSC/BO-H211
IEEE 802.16 Reference	Figure "DSC - Remotely Initiated Transaction state transition diagram" Figure "DSC - Remotely Initiated Transaction Holding Down state flow diagram"
PICS Item	
Initial Condition	IUT is operating and a service flow is established. An SS-Initiated DSC transaction has started. The IUT is in the Holding Down state.
Expected Behaviour	Check that: On receiving the SF Delete-Local command, the IUT sends no message and remains in the same state.
Test strategy	
Notes	Requires a means of provoking the SF Delete-Local; e.g. MIB command.

TP ID	TP/BS/DS/DSC/BO-H212
IEEE 802.16 Reference	Figure "DSC - Remotely Initiated Transaction state transition diagram" Figure "DSC - Remotely Initiated Transaction Holding Down state flow diagram"
PICS Item	
Initial Condition	IUT is operating and a service flow is established. An SS-Initiated DSC transaction has started. The IUT is in the Holding Down state.
Expected Behaviour	Check that: On receiving the SF Change-Remote command, the IUT sends no message and remains in the same state.
Test strategy	
Notes	Requires a means of provoking the SF Change-Remote; e.g. DSC-REQ or MIB command.

TP ID	TP/BS/DS/DSC/BO-H213
IEEE 802.16 Reference	Figure "DSC - Remotely Initiated Transaction state transition diagram" Figure "DSC - Remotely Initiated Transaction Deleting Service Flow state flow diagram"
PICS Item	
Initial Condition	IUT is operating and a service flow is established. An SS-Initiated DSC transaction has started. The IUT is in the Deleting Service Flow state.
Expected Behaviour	Check that: On receiving the SF Deleted command, the IUT sends no message and ends the DSC transaction.
Test strategy	
Notes	Requires a means of provoking the SF Deleted; e.g. MIB command.

TP ID	TP/BS/DS/DSC/BO-H214
IEEE 802.16 Reference	Figure "DSC - Remotely Initiated Transaction state transition diagram" Figure "DSC - Remotely Initiated Transaction Deleting Service Flow state flow diagram"
PICS Item	
Initial Condition	IUT is operating and a service flow is established. An SS-Initiated DSC transaction has started. The IUT is in the Deleting Service Flow state.
Expected Behaviour	Check that: On receiving the SF Delete-Remote command, the IUT sends no message and ends the DSC transaction.
Test strategy	
Notes	Requires a means of provoking the SF Delete-Remote; e.g. DSD-REQ or MIB command.

TP ID	TP/BS/DS/DSC/BO-H215
IEEE 802.16 Reference	Figure "DSC - Remotely Initiated Transaction state transition diagram" Figure "DSC - Remotely Initiated Transaction Deleting Service Flow state flow diagram"
PICS Item	
Initial Condition	IUT is operating and a service flow is established. An SS-Initiated DSC transaction has started. The IUT is in the Deleting Service Flow state.
Expected Behaviour	Check that: On receiving the SF Change-Local command, the IUT sends no message and ends the DSC transaction.
Test strategy	
Notes	Requires a means of provoking the SF Change-Local; e.g. MIB command.

TP ID	TP/BS/DS/DSC/BO-H216
IEEE 802.16 Reference	Figure "DSC - Remotely Initiated Transaction state transition diagram" Figure "DSC - Remotely Initiated Transaction Deleting Service Flow state flow diagram"
PICS Item	
Initial Condition	IUT is operating and a service flow is established. An SS-Initiated DSC transaction has started. The IUT is in the Deleting Service Flow state.
Expected Behaviour	Check that: On receiving a DSC-REQ, the IUT sends no message and remains in the same state.
Test strategy	
Notes	

TP ID	TP/BS/DS/DSC/BO-H217
IEEE 802.16 Reference	Figure "DSC - Remotely Initiated Transaction state transition diagram" Figure "DSC - Remotely Initiated Transaction Deleting Service Flow state flow diagram"
PICS Item	
Initial Condition	IUT is operating and a service flow is established. An SS-Initiated DSC transaction has started. The IUT is in the Deleting Service Flow state.
Expected Behaviour	Check that: On receiving a DSC-ACK, the IUT sends no message and remains in the same state.
Test strategy	
Notes	

TP ID	TP/BS/DS/DSC/TI-H000
IEEE 802.16 Reference	clause 6.3.14.9.4
PICS Item	
Initial Condition	IUT is operating and has initiated changing a service flow by sending a DSC-REQ (state is DSC-Local DSC-RSP Pending).
Expected Behaviour	Check that: For an IUT initiated DSC procedure, when each time timer T7 expires with no DSC-RSP reply received, the IUT re-sends the DSC-REQ for DSx Request Retries times.
Test strategy	
Notes	Requires a means to provoke the IUT to start the DSC transaction with a DSC-REQ.

TP ID	TP/BS/DS/DSC/TI-H001
IEEE 802.16 Reference	clause 6.3.14.9.4
PICS Item	
Initial Condition	IUT is operating and has initiated changing a service flow by sending a DSC-REQ (state is DSC-Local DSC-RSP Pending).
Expected Behaviour	Check that: For an IUT initiated DSC procedure after DSx Request Retries times repetition of DSC-REQ sending and when timer T7 expires without any reply is received, the IUT does not re-send the DSC-REQ message and stops the initiated procedure.
Test strategy	
Notes	Requires a means to provoke the IUT to start the DSC transaction with a DSC-REQ.

TP ID	TP/BS/DS/DSC/TI-H002
IEEE 802.16 Reference	clause 6.3.14.9.4
PICS Item	
Initial Condition	IUT is operating and has initiated changing a service flow by sending a DSC-REQ. The IUT has received the DSC_RSP message and has sent the DSC-ACK message (state is DSC - Local Holding Down).
Expected Behaviour	Check that: Before expiry of timer T10 and on receiving a DSC-RSP containing the Confirmation Code set to OK/success for DSx Response Retries times, the IUT re-sends the DSC-ACK message for each received DSC-RSP.
Test strategy	
Notes	Requires a means to provoke the IUT to start the DSC transaction with a DSC-REQ.

TP ID	TP/BS/DS/DSC/TI-H003
IEEE 802.16 Reference	clause 6.3.14.9.4
PICS Item	
Initial Condition	IUT is operating and has initiated changing a service flow by sending a DSC-REQ. The IUT has received the DSC_RSP message and has sent the DSC-ACK message (state is DSC - Local Holding Down).
Expected Behaviour	Check that: After expiry of timer T10 and then receipt of a DSC-RSP, the IUT ignores the received message.
Test strategy	
Notes	Requires a means to provoke the IUT to start the DSC transaction with a DSC-REQ.

TP ID	TP/BS/DS/DSC/TI-H004
IEEE 802.16 Reference	clause 6.3.14.9.4
PICS Item	
Initial Condition	IUT has completed initialization and is operating. A service flow is established. The IUT has received a DSC-REQ message and has sent a DSX-RVD message followed by a DSC-RSP message. The IUT is now in DSC-Remote DSC-ACK pending state.
Expected Behaviour	Check that: On receiving a DSC-REQ for DSx Request Retries times each time before the expiry of timer T8, the IUT re-sends the DSC-RSP for each received DSC-REQ.
Test strategy	
Notes	

TP ID	TP/BS/DS/DSC/TI-H005
IEEE 802.16 Reference	clause 6.3.14.9.4
PICS Item	
Initial Condition	IUT has completed initialization and is operating. A service flow is established. The IUT has received a DSC-REQ message and has sent a DSX-RVD message followed by a DSC-RSP message. The IUT is now in DSC-Remote DSC-ACK pending state.
Expected Behaviour	Check that: On receiving a DSC-REQ for more than DSx Request Retries times each time before the expiry of timer T8, the IUT takes no action.
Test strategy	
Notes	

TP ID	TP/BS/DS/DSC/TI-H006
IEEE 802.16 Reference	clause 6.3.14.9.4
PICS Item	
Initial Condition	IUT has completed initialization and is operating. A service flow is established. The IUT has received a DSC-REQ message and has sent a DSX-RVD message followed by a DSC-RSP message. The IUT is now in DSC-Remote DSC-ACK pending state.
Expected Behaviour	Check that: On expiry of timer T8 and on nothing received for the concerned service flow, the IUT re-sends for DSx Response Retries times the DSP-RSP message.
Test strategy	
Notes	

TP ID	TP/BS/DS/DSC/TI-H007
IEEE 802.16 Reference	clauses 6.3.14.9.4.2 and 6.3.2.3.14
PICS Item	
Initial Condition	IUT is authorized, registered and a DS flow is established. The IUT has received a DSC-REQ and then has sent a DSX-RVD and DSC-RSP.
Expected Behaviour	Check that: On T8 expiry without receiving a DSC-ACK, the IUT resends the previously transmitted DSC-RSP for DSx Response Retries times.
Test strategy	
Notes	

TP ID	TP/BS/DS/DSC/TI-H008
IEEE 802.16 Reference	clauses 6.3.14.9.4.2 and 6.3.2.3.14
PICS Item	
Initial Condition	IUT is authorized, registered and a DS flow is established. The IUT has received a DSC-REQ and then has sent a DSX-RVD and DSC-RSP.
Expected Behaviour	Check that: On T8 expiry without receiving a DSC-ACK for more than DSx Response Retries times, the IUT stops the DSC transaction.
Test strategy	
Notes	

TP ID	TP/BS/DS/DSC/TI-H009
IEEE 802.16 Reference	Figure "DSC - Locally Initiated Transaction state transition diagram" Figure "DSC - Locally Initiated Transaction DSC-RSP Pending state flow diagram"
PICS Item	
Initial Condition	IUT is operating and a service flow is established. A BS-Initiated DSC transaction has started. The IUT is in the DSC-RSP Pending state.
Expected Behaviour	Check that: On not receiving a DSC-RSP after T14 expiry and retries are available, the IUT retransmits the DSC-REQ, restarts T7, and remains in the same state.
Test strategy	
Notes	

TP ID	TP/BS/DS/DSC/TI-H010
IEEE 802.16 Reference	Figure "DSC - Locally Initiated Transaction state transition diagram" Figure "DSC - Locally Initiated Transaction DSC-RSP Pending state flow diagram"
PICS Item	
Initial Condition	IUT is operating and a service flow is established. A BS-Initiated DSC transaction has started. The IUT is in the DSC-RSP Pending state.
Expected Behaviour	Check that: On not receiving a DSC-RSP after T14 expiry and retries are exhausted, the IUT sends no message, starts T10, and goes to the Retries Exhausted state.
Test strategy	
Notes	

TP ID	TP/BS/DS/DSC/TI-H011
IEEE 802.16 Reference	Figure "DSC - Locally Initiated Transaction state transition diagram" Figure "DSC - Locally Initiated Transaction Holding Down state flow diagram"
PICS Item	
Initial Condition	IUT is operating and a service flow is established. A BS-Initiated DSC transaction has started. The IUT is in the Holding Down state.
Expected Behaviour	Check that: On T10 expiry, the IUT sends no message and ends the DSC transaction.
Test strategy	
Notes	

TP ID	TP/BS/DS/DSC/TI-H012
IEEE 802.16 Reference	Figure "DSC - Locally Initiated Transaction state transition diagram" Figure "DSC - Locally Initiated Transaction Retries Exhausted state flow diagram"
PICS Item	
Initial Condition	IUT is operating and a service flow is established. A BS-Initiated DSC transaction has started. The IUT is in the Retries Exhausted state.
Expected Behaviour	Check that: On T10 expiry, the IUT sends no message and ends the DSC transaction.
Test strategy	
Notes	

TP ID	TP/BS/DS/DSC/TI-H013
IEEE 802.16 Reference	Figure "DSC - Locally Initiated Transaction state transition diagram" Figure "DSC - Locally Initiated Transaction Deleting Service Flow state flow diagram"
PICS Item	
Initial Condition	IUT is operating and a service flow is established. A BS-Initiated DSC transaction has started. The IUT is in the Deleting Service Flow state.
Expected Behaviour	Check that: On T10 expiry, the IUT sends no message and ends the DSC transaction.
Test strategy	
Notes	

TP ID	TP/BS/DS/DSC/TI-H014
IEEE 802.16 Reference	Figure "DSC - Remotely Initiated Transaction state transition diagram" Figure "DSC - Remotely Initiated Transaction Deleting Service Flow state flow diagram"
PICS Item	
Initial Condition	IUT is operating and a service flow is established. An SS-Initiated DSC transaction has started. The IUT is in the Deleting Service Flow state.
Expected Behaviour	Check that: On T10 expiry, the IUT sends no message and ends the DSC transaction.
Test strategy	
Notes	

5.2.5.3   Dynamic Services Deletion (DSD)

TP ID	TP/BS/DS/DSD/BV-H000
IEEE 802.16 Reference	clause 6.3.14.9.5.2
PICS Item	
Initial Condition	IUT has completed initialization and is operating. A DL service flow is established.
Expected Behaviour	Check that: To delete an established DL Service flow, the IUT sends a DSD-REQ.
Test strategy	Straightforward.
Notes	Requires a means to provoke the IUT to delete the service flow with a DSD-REQ.

TP ID	TP/BS/DS/DSD/BV-H001
IEEE 802.16 Reference	clause 6.3.14.9.5.2
PICS Item	
Initial Condition	IUT has completed initialization and is operating. A UL service flow is established.
Expected Behaviour	Check that: To delete an established UL Service flow, the IUT sends a DSD-REQ.
Test strategy	
Notes	Requires a means to provoke the IUT to delete the service flow with a DSD-REQ.

TP ID	TP/BS/DS/DSD/BV-H002
IEEE 802.16 Reference	clause 6.3.14.9.5
PICS Item	
Initial Condition	IUT has completed initialization and is operating. A bidirectional service flow is established.
Expected Behaviour	Check that: To change an established bidirectional Service flow, the IUT sends a separate DSD-REQ to delete the UL portion and another DSD-REQ to delete the DL portion.
Test strategy	
Notes	Requires a means to provoke the IUT to delete the service flow with a DSD-REQ.

TP ID	TP/BS/DS/DSD/BV-H003
IEEE 802.16 Reference	clause 6.3.14.9.5
PICS Item	
Initial Condition	IUT has completed initialization and is operating. An UL service flow is established. The IUT has sent a DSD-REQ to delete the service flow.
Expected Behaviour	Check that: On receiving a DSD-RSP containing the Confirmation Code set to OK/success, the IUT accepts it.
Test strategy	
Notes	Requires a means to provoke the IUT to delete the service flow with a DSD-REQ.

TP ID	TP/BS/DS/DSD/BV-H004
IEEE 802.16 Reference	clause 6.3.14.9.5
PICS Item	
Initial Condition	IUT has completed initialization and is operating. An UL service flow is established.
Expected Behaviour	Check that: On receiving a DSD-REQ, the IUT sends a DSD-RSP containing the Confirmation Code set to OK/success.
Test strategy	
Notes	

TP ID	TP/BS/DS/DSD/BV-H005
IEEE 802.16 Reference	Figure "DSD - Locally Initiated Transaction state transition diagram" Figure "DSD - Locally Initiated Transaction Holding Down state flow diagram"
PICS Item	
Initial Condition	IUT is operating and a service flow is established. A BS-Initiated DSD transaction has started. The IUT is in the Holding Down state.
Expected Behaviour	Check that: On receiving a DSD-RSP, the IUT sends no message and remains in the same state.
Test strategy	
Notes	

TP ID	TP/BS/DS/DSD/BI-H000
IEEE 802.16 Reference	clause 6.3.14.9.5
PICS Item	
Initial Condition	IUT has completed initialization and is operating. An UL service flow is established. The IUT has sent a DSD-REQ to delete the service flow.
Expected Behaviour	Check that: On receiving an erroneous DSD-RSP, the IUT re-sends the DSD-REQ message.
Test strategy	
Notes	Requires a means to provoke the IUT to delete the service flow with a DSD-REQ.

TP ID	TP/BS/DS/DSD/BI-H001
IEEE 802.16 Reference	clauses 6.3.14.9.5.2 and 6.3.2.3.17
PICS Item	
Initial Condition	IUT is operational and a DS flow is established.
Expected Behaviour	Check that: On receiving a DSD-REQ with invalid transaction ID, the IUT transmits a DSD-RSP message indicating the error.
Test strategy	
Notes	

TP ID	TP/BS/DS/DSD/BI-H002
IEEE 802.16 Reference	clauses 6.3.14.9.5.1 and 6.3.2.3.17
PICS Item	
Initial Condition	IUT is operational and a DS flow is established. The IUT waits for DSD-RSP.
Expected Behaviour	Check that: On receiving a DSD-RSP rejecting the request and indicating an invalid transaction ID, the IUT re-sends the DSC-REQ with correct transaction ID.
Test strategy	
Notes	Requires a means to provoke the IUT to delete the service flow with a DSD-REQ.

TP ID	TP/BS/DS/DSD/BO-H000
IEEE 802.16 Reference	clause 6.3.14.9.5
PICS Item	
Initial Condition	IUT has completed initialization and is operating. An UL service flow is established. The IUT has sent a DSD-REQ to delete the service flow.
Expected Behaviour	Check that: On receiving a DSD-RSP for a non existing service, the IUT ignores the received DSD-RSP message.
Test strategy	
Notes	Requires a means to provoke the IUT to delete the service flow with a DSD-REQ.

TP ID	TP/BS/DS/DSD/BO-H001
IEEE 802.16 Reference	clause 6.3.14.9.5
PICS Item	
Initial Condition	IUT has completed initialization and is operating. An UL service flow is established. The IUT has deleted the service flow.
Expected Behaviour	Check that: On receiving a DSD-RSP message for a recently deleted service, the IUT ignores the received DSD-RSP message.
Test strategy	
Notes	Requires a means to provoke the IUT to delete the service flow with a DSD-REQ.

TP ID	TP/BS/DS/DSD/BO-H002
IEEE 802.16 Reference	clause 6.3.14.9.5
PICS Item	
Initial Condition	IUT has completed initialization and is operating. An UL service flow is established.
Expected Behaviour	Check that: On receiving a DSD-RSP for the existing UL service, the IUT ignores the received DSD-RSP message.
Test strategy	
Notes	

TP ID	TP/BS/DS/DSD/BO-H003
IEEE 802.16 Reference	clause 6.3.14.9.5
PICS Item	
Initial Condition	IUT has completed initialization and is operating. An UL service flow is established. The IUT is not able to support SS initiated Dynamic Service
Expected Behaviour	Check that: On receiving a DSD-REQ message, the IUT sends a DSD-RSP message indicating that the request is not allowed.
Test strategy	
Notes	

TP ID	TP/BS/DS/DSD/BO-H004
IEEE 802.16 Reference	clauses 6.3.14.9.5.2 and 6.3.2.3.16
PICS Item	
Initial Condition	IUT is operational and a DS flow is established.
Expected Behaviour	Check that: On receiving a DSD-REQ for a non existing service flow, the IUT ignores the message.
Test strategy	
Notes	

TP ID	TP/BS/DS/DSD/BO-H005
IEEE 802.16 Reference	Figure "DSD - Locally Initiated Transaction state transition diagram" Figure "DSD - Locally Initiated Transaction DSD-RSP Pending state flow diagram"
PICS Item	
Initial Condition	IUT is operating and a service flow is established. A BS-Initiated DSD transaction has started. The IUT is in the DSD-RSP Pending state.
Expected Behaviour	Check that: On receiving an SF DSD-REQ Lost Command and retries are available, the IUT retransmits the DSD-REQ message and remains in the same state.
Test strategy	
Notes	Requires a means of provoking the SF DSD-REQ Lost Command; e.g. MIB command.

TP ID	TP/BS/DS/DSD/BO-H006
IEEE 802.16 Reference	Figure "DSD - Locally Initiated Transaction state transition diagram" Figure "DSD - Locally Initiated Transaction DSD-RSP Pending state flow diagram"
PICS Item	
Initial Condition	IUT is operating and a service flow is established. A BS-Initiated DSD transaction has started. The IUT is in the DSD-RSP Pending state.
Expected Behaviour	Check that: On receiving an SF DSD-REQ Lost Command and retries are exhausted, the IUT sends no message and remains in the same state.
Test strategy	
Notes	Requires a means of provoking the SF DSD-REQ Lost Command; e.g. MIB command.

TP ID	TP/BS/DS/DSD/BO-H007
IEEE 802.16 Reference	Figure "DSD - Locally Initiated Transaction state transition diagram" Figure "DSD - Locally Initiated Transaction DSD-RSP Pending state flow diagram"
PICS Item	
Initial Condition	IUT is operating and a service flow is established. A BS-Initiated DSD transaction has started. The IUT is in the DSD-RSP Pending state.
Expected Behaviour	Check that: On receiving an SF Delete-Remote Command, the IUT sends no message, stops T7, starts T10, and goes to the Holding Down state.
Test strategy	
Notes	Requires a means of provoking the SF Delete-Remote; e.g. DSD-REQ or MIB command.

TP ID	TP/BS/DS/DSD/BO-H008
IEEE 802.16 Reference	Figure "DSD - Locally Initiated Transaction state transition diagram" Figure "DSD - Locally Initiated Transaction Holding Down state flow diagram"
PICS Item	
Initial Condition	IUT is operating and a service flow is established. A BS-Initiated DSD transaction has started. The IUT is in the Holding Down state.
Expected Behaviour	Check that: On receiving an SF Deleted command, the IUT sends no message and remains in the same state.
Test strategy	
Notes	Requires a means of provoking the SF Deleted; e.g. MIB command.

TP ID	TP/BS/DS/DSD/BO-H009
IEEE 802.16 Reference	Figure "DSD - Remotely Initiated Transaction state transition diagram" Figure "DSD - Remotely Initiated Transaction Holding Down state flow diagram"
PICS Item	
Initial Condition	IUT is operating and a service flow is established. An SS-Initiated DSD transaction has started. The IUT is in the Holding Down state.
Expected Behaviour	Check that: On receiving an SF Deleted command, the IUT sends no message and ends the DSD transaction.
Test strategy	
Notes	Requires a means of provoking the SF Deleted; e.g. MIB command.

TP ID	TP/BS/DS/DSD/TI-H000
IEEE 802.16 Reference	clause 6.3.14.9.5
PICS Item	
Initial Condition	IUT has completed initialization and is operating. An UL service flow is established. The IUT has sent a DSD-REQ to delete the service flow.
Expected Behaviour	Check that: For an IUT initiated DSD procedure when each time timer T7 expires and no reply is received, the IUT re-sends the DSD-REQ message for DSx Request Retries times and then stops the initiated procedure.
Test strategy	
Notes	Requires a means to provoke the IUT to delete the service flow with a DSD-REQ.

TP ID	TP/BS/DS/DSD/TI-H001
IEEE 802.16 Reference	clause 6.3.14.9.5
PICS Item	
Initial Condition	IUT has completed initialization and is operating. An UL service flow is established. The IUT has sent a DSD-REQ to delete the service flow.
Expected Behaviour	Check that: For an IUT initiated DSD procedure, after DSx Request Retries times repetition of DSD-REQ sending and when timer T7 expires and no reply is received, the IUT does not re-send the DSD-REQ message and stops the initiated procedure.
Test strategy	
Notes	Requires a means to provoke the IUT to delete the service flow with a DSD-REQ.

TP ID	TP/BS/DS/DSD/TI-H002
IEEE 802.16 Reference	clause 6.3.14.9.5
PICS Item	
Initial Condition	IUT has completed initialization and is operating. An UL service flow is established. The IUT has just deleted the existing service flow.
Expected Behaviour	Check that: Before the expiration of T10 and when it needs to establish a new service flow, the IUT sends a DSA-REQ message but does not reuse the CID of the recently deleted connection.
Test strategy	
Notes	Requires a means to provoke the IUT to establish a service flow with a DSA-REQ.

TP ID	TP/BS/DS/DSD/TI-H003
IEEE 802.16 Reference	Figure "DSD - Locally Initiated Transaction state transition diagram" Figure "DSD - Locally Initiated Transaction Holding Down state flow diagram"
PICS Item	
Initial Condition	IUT is operating and a service flow is established. A BS-Initiated DSD transaction has started. The IUT is in the Holding Down state.
Expected Behaviour	Check that: On expiry of T10, the IUT sends no message and ends the DSD transaction.
Test strategy	
Notes	

TP ID	TP/BS/DS/DSD/TI-H004
IEEE 802.16 Reference	Figure "DSD - Remotely Initiated Transaction state transition diagram" Figure "DSD - Remotely Initiated Transaction Holding Down state flow diagram"
PICS Item	
Initial Condition	IUT is operating and a service flow is established. An SS-Initiated DSD transaction has started. The IUT is in the Holding Down state.
Expected Behaviour	Check that: On expiry of T10, the IUT sends no message and ends the DSD transaction.
Test strategy	
Notes	

5.2.5.4   QoS Parameter Sets (QPS)

TP ID	TP/BS/DS/QPS/BV-H000
IEEE 802.16 Reference	clause 6.3.14.9.4
PICS Item	
Initial Condition	IUT has completed initialization and is operating. A service flow in the provisioned state is established.
Expected Behaviour	Check that: To initiate a change to the admitted state, the IUT sends a DSC-REQ.
Test strategy	
Notes	Requires a means to provoke the IUT to start the DSC transaction for a service flow with a DSC-REQ.

TP ID	TP/BS/DS/QPS/BV-H001
IEEE 802.16 Reference	clause 6.3.14.9.4
PICS Item	
Initial Condition	IUT has completed initialization and is operating. A service flow in the provisioned state is established. The IUT has sent a DSC-REQ message to change the service flow to the admitted state.
Expected Behaviour	Check that: On receiving a DSC-RSP containing the Confirmation Code set to OK/success, sends a DSC-ACK containing the Confirmation Code set to OK/success.
Test strategy	
Notes	Requires a means to provoke the IUT to start the DSC transaction with a DSC-REQ.

TP ID	TP/BS/DS/QPS/BV-H002
IEEE 802.16 Reference	clause 6.3.14.9.4
PICS Item	
Initial Condition	IUT has completed initialization and is operating. A service flow in the provisioned state is established.
Expected Behaviour	Check that: To initiate a change to the active state, the IUT sends a DSC-REQ.
Test strategy	
Notes	Requires a means to provoke the IUT to start the DSC transaction for a service flow with a DSC-REQ.

TP ID	TP/BS/DS/QPS/BV-H003
IEEE 802.16 Reference	clause 6.3.14.9.4
PICS Item	
Initial Condition	IUT has completed initialization and is operating. A service flow in the provisioned state is established. The IUT has sent a DSC-REQ message to change the service flow to the active state.
Expected Behaviour	Check that: On receiving a DSC-RSP containing the Confirmation Code set to OK/success, the IUT sends a DSC-ACK containing the Confirmation Code set to OK/success.
Test strategy	
Notes	Requires a means to provoke the IUT to start the DSC transaction with a DSC-REQ.

TP ID	TP/BS/DS/QPS/BV-H004
IEEE 802.16 Reference	clause 6.3.14.9.4
PICS Item	
Initial Condition	IUT has completed initialization and is operating. A service flow in the active state is established.
Expected Behaviour	Check that: To change the service flow to the provisioned state, the IUT sends a DSC-REQ.
Test strategy	
Notes	Requires a means to provoke the IUT to start the DSC transaction for a service flow with a DSC-REQ.

TP ID	TP/BS/DS/QPS/BV-H005
IEEE 802.16 Reference	clause 6.3.14.9.4
PICS Item	
Initial Condition	IUT has completed initialization and is operating. A service flow in the active state is established.
Expected Behaviour	Check that: On receiving a DSC-REQ containing the Service Flow Parameters with the Service Flow Identifier and a null ActiveQoSParamSet, the IUT deactivates the referenced Service Flow.
Test strategy	
Notes	

TP ID	TP/BS/DS/QPS/BV-H006
IEEE 802.16 Reference	clause 6.3.14.9.4
PICS Item	
Initial Condition	IUT has completed initialization and is operating. A service flow in the active state is established.
Expected Behaviour	Check that: On receiving a DSC-REQ containing the Service Flow Parameters with the Service Flow Identifier and only an AdmitQoSParamSet, the IUT deactivates the referenced Service Flow.
Test strategy	
Notes	

TP ID	TP/BS/DS/QPS/BV-H007
IEEE 802.16 Reference	clause 6.3.14.9.4
PICS Item	
Initial Condition	IUT has completed initialization and is operating. A service flow in the active state is established.
Expected Behaviour	Check that: On receiving a DSC-REQ containing the Service Flow Parameters with the Service Flow Identifier, a null AdmitQoSParamSet and null ActiveQoSParamSet, the IUT readmits the referenced Service Flow.
Test strategy	
Notes	

TP ID	TP/BS/DS/QPS/BV-H008
IEEE 802.16 Reference	clause 6.3.14.9.4
PICS Item	
Initial Condition	IUT has completed initialization and is operating. A service flow in the active state is established. The IUT has sent a DSC-REQ message to change the service flow to the provisioned state.
Expected Behaviour	Check that: On receiving a DSC-RSP containing the Confirmation Code set to OK/success, the IUT sends a DSC-ACK containing the Confirmation Code set to OK/success.
Test strategy	
Notes	Requires a means to provoke the IUT to start the DSC transaction with a DSC-REQ.

TP ID	TP/BS/DS/QPS/BV-H009
IEEE 802.16 Reference	clause 6.3.14.9.4
PICS Item	
Initial Condition	IUT has completed initialization and is operating. A service flow in the active state is established.
Expected Behaviour	Check that: To change the service flow to the admitted state, the IUT sends a DSC-REQ.
Test strategy	
Notes	Requires a means to provoke the IUT to start the DSC transaction for a service flow with a DSC-REQ.

TP ID	TP/BS/DS/QPS/BV-H010
IEEE 802.16 Reference	clause 6.3.14.9.4
PICS Item	
Initial Condition	IUT has completed initialization and is operating. A service flow in the active state is established. The IUT has sent a DSC-REQ message to change the service flow to the admitted state.
Expected Behaviour	Check that: On receiving a DSC-RSP containing the Confirmation Code set to OK/success, the IUT sends a DSC-ACK containing the Confirmation Code set to OK/success.
Test strategy	
Notes	Requires a means to provoke the IUT to start the DSC transaction with a DSC-REQ.

TP ID	TP/BS/DS/QPS/BV-H011
IEEE 802.16 Reference	clause 6.3.14.9.4
PICS Item	
Initial Condition	IUT has completed initialization and is operating. A service flow in the admitted state is established.
Expected Behaviour	Check that: To change the service flow to the active state, the IUT sends a DSC-REQ.
Test strategy	
Notes	Requires a means to provoke the IUT to start the DSC transaction for a service flow with a DSC-REQ.

TP ID	TP/BS/DS/QPS/BV-H012
IEEE 802.16 Reference	clause 6.3.14.9.4
PICS Item	
Initial Condition	IUT has completed initialization and is operating. A service flow in the admitted state is established. The IUT has sent a DSC-REQ message to change the service flow to the active state.
Expected Behaviour	Check that: On receiving a DSC-RSP containing the Confirmation Code set to OK/success, the IUT sends a DSC-ACK containing the Confirmation Code set to OK/success.
Test strategy	
Notes	Requires a means to provoke the IUT to start the DSC transaction with a DSC-REQ.

TP ID	TP/BS/DS/QPS/BV-H013
IEEE 802.16 Reference	clause 6.3.14.9.4
PICS Item	
Initial Condition	IUT has completed initialization and is operating. A service flow in the admitted state is established.
Expected Behaviour	Check that: To change the service flow to the provisioned state, the IUT sends a DSC-REQ.
Test strategy	
Notes	Requires a means to provoke the IUT to start the DSC transaction for a service flow with a DSC-REQ.

TP ID	TP/BS/DS/QPS/BV-H014
IEEE 802.16 Reference	clause 6.3.14.9.4
PICS Item	
Initial Condition	IUT has completed initialization and is operating. A service flow in the admitted state is established. The IUT has sent a DSC-REQ message to change the service flow to the provisioned state.
Expected Behaviour	Check that: On receiving a DSC-RSP containing the Confirmation Code set to OK/success, the IUT sends a DSC-ACK containing the Confirmation Code set to OK/success.
Test strategy	
Notes	Requires a means to provoke the IUT to start the DSC transaction with a DSC-REQ.

TP ID	TP/BS/DS/QPS/BV-H015
IEEE 802.16 Reference	clause 6.3.14.4
PICS item	
Initial Condition	IUT is operational.
Expected Behaviour	Check that: On receiving a DSA-REQ with supplemental and overriding service parameters, the IUT includes the supplemental and overriding service parameters in the DSA-RSP.
Test strategy	
Notes	

TP ID	TP/BS/DS/QPS/BV-H016
IEEE 802.16 Reference	clause 6.3.14.4
PICS item	
Initial Condition	IUT is operational. An uplink service flow is active.
Expected Behaviour	Check that: On receiving a DSC-REQ with supplemental and overriding service parameters, the IUT includes the supplemental and overriding service parameters in the DSC-RSP.
Test strategy	
Notes	

TP ID	TP/BS/DS/QPS/BV-H017
IEEE 802.16 Reference	clause 11.13.4
PICS item	
Initial Condition	IUT is operational. An uplink service flow is active.
Expected Behaviour	Check that: On receiving a DSC-REQ message with multiple updates to a single QoS Parameter Set, the IUT transmits a DSC-RSP message with CC 2 (reject-unrecognized-configuration-setting).
Test strategy	
Notes	

TP ID	TP/BS/DS/QPS/BV-H018
IEEE 802.16 Reference	clause 11.13.11
PICS item	
Initial Condition	IUT is operational.
Expected Behaviour	Check that: On receiving a DSA-REQ message to establish an uplink service flow with the Service Flow Scheduling Type parameter omitted in the message, the IUT provides the Best Effort (BE) uplink scheduling service.
Test strategy	
Notes	

TP ID	TP/BS/DS/QPS/BV-H019
IEEE 802.16 Reference	clause 11.13.11
PICS item	
Initial Condition	IUT is operational.
Expected Behaviour	Check that: On receiving a DSA-REQ message to establish an uplink service flow with the Service Flow Scheduling Type parameter set to Undefined, the IUT provides the uplink scheduling service defined in the Vendor-specific QoS parameters.
Test strategy	
Notes	

TP ID	TP/BS/DS/QPS/BV-H020
IEEE 802.16 Reference	clause 11.13.11
PICS item	
Initial Condition	IUT is operational.
Expected Behaviour	Check that: On receiving a DSA-REQ message to establish an uplink service flow with the Service Flow Scheduling Type parameter set to BE (2), the IUT provides the Best Effort (BE) uplink scheduling service.
Test strategy	
Notes	

TP ID	TP/BS/DS/QPS/BV-H021
IEEE 802.16 Reference	clause 6.3.5.2.4
PICS item	
Initial Condition	IUT is operating. A service flow is established with BE scheduling in use for this connection.
Expected Behaviour	Check that: The IUT sets the Request/Transmission Policy to use contention requests on the connection.
Test strategy	
Notes	

TP ID	TP/BS/DS/QPS/BV-H022
IEEE 802.16 Reference	clause 11.13.11
PICS item	
Initial Condition	IUT is operational.
Expected Behaviour	Check that: On receiving a DSA-REQ message to establish an uplink service flow with the Service Flow Scheduling Type parameter set to nrtPS (3), the IUT provides the nrtPS uplink scheduling service.
Test strategy	
Notes	

TP ID	TP/BS/DS/QPS/BV-H023
IEEE 802.16 Reference	clause 11.13.11
PICS item	
Initial Condition	IUT is operational.
Expected Behaviour	Check that: On receiving a DSA-REQ message to establish an uplink service flow with the Service Flow Scheduling Type parameter set to rtPS (4), the IUT provides the rtPS uplink scheduling service.
Test strategy	
Notes	

TP ID	TP/BS/DS/QPS/BV-H024
IEEE 802.16 Reference	clause 11.13.11
PICS item	
Initial Condition	IUT is operational.
Expected Behaviour	Check that: On receiving a DSA-REQ message to establish an uplink service flow with the Service Flow Scheduling Type parameter set to UGS (6), the IUT provides the UGS uplink scheduling service.
Test strategy	
Notes	

TP ID	TP/BS/DS/QPS/BV-H025
IEEE 802.16 Reference	clause 6.3.5.2.1
PICS item	
Initial Condition	IUT is operating. A service flow is established with UGS scheduling in use for this connection.
Expected Behaviour	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 sub header).
Test strategy	
Notes	

TP ID	TP/BS/DS/QPS/BV-H026
IEEE 802.16 Reference	clause 6.3.5.2.1
PICS item	
Initial Condition	IUT is operating. A service flow is established with UGS scheduling in use for this connection.
Expected Behaviour	Check that: The IUT sets the Request/Transmission policy to prohibit the use of contention request opportunities on this connection.
Test strategy	
Notes	

TP ID	TP/BS/DS/QPS/BV-H100
IEEE 802.16 Reference	clause 6.3.14.4
PICS item	
Initial Condition	IUT is operational. One uplink service flow and one downlink service flow are active for a given Service Class Name.
Expected Behaviour	Check that: On a change in the definition of the Service Class Name with new QoS parameters, the IUT maintains the existing uplink and downlink service flow QoS.
Test strategy	
Notes	

TP ID	TP/BS/DS/QPS/BV-H101
IEEE 802.16 Reference	clause 6.3.14.4
PICS item	
Initial Condition	IUT is operational.
Expected Behaviour	Check that: On receiving a DSA-REQ message using the Service Class Name for the Admitted QoS Parameter Set, the IUT transmits a DSA-RSP with the expanded set of service flow TLV coding.
Test strategy	
Notes	

TP ID	TP/BS/DS/QPS/BV-H102
IEEE 802.16 Reference	clause 6.3.14.4
PICS item	
Initial Condition	IUT is operational. An uplink service flow is active.
Expected Behaviour	Check that: On receiving a DSC-REQ message using the Service Class Name for the Admitted QoS Parameter Set, the IUT transmits a DSC-RSP with the expanded set of service flow TLV coding.
Test strategy	
Notes	

TP ID	TP/BS/DS/QPS/BV-H103
IEEE 802.16 Reference	clause 11.13.3
PICS item	
Initial Condition	IUT is operational. An uplink service flow is active.
Expected Behaviour	Check that: On receiving a DSC-REQ message specifying some QoS parameters and a Service Class Name that changes all the current parameters, the IUT provides the service specified by the new QoS parameters. For the remaining unspecified parameters, the Service Class Name values are used.
Test strategy	
Notes	

TP ID	TP/BS/DS/QPS/BV-H104
IEEE 802.16 Reference	clause 11.13.4
PICS item	
Initial Condition	IUT is operational.
Expected Behaviour	Check that: the IUT handles a single update to each of the Active and Admitted QoS parameter sets.
Test strategy	
Notes	

5.2.6   Bandwidth Allocation and Polling (BWA)

TP ID	TP/BS/BWA/BV-H000
IEEE 802.16 Reference	clause 6.3.7.1
PICS item	
Initial Condition	IUT is operating.
Expected Behaviour	Check that: For half-duplex SSs, the IUT does not allocate uplink bandwidth for the downlink within the propagation delay, SSTTG, and SSRTG parts of the frame.
Test strategy	
Notes	

TP ID	TP/BS/BWA/BV-H001
IEEE 802.16 Reference	clause 6.3.8.1
PICS item	
Initial Condition	The IUT is operational.
Expected Behaviour	Check that: The IUT transmits the size of individual transmission opportunities for each type of contention IE in each UCD message and allocates bandwidth for contention IEs in integer multiples of this size.
Test strategy	
Notes	

TP ID	TP/BS/BWA/BV-H002
IEEE 802.16 Reference	clause 6.3.7.4.3.1
PICS item	
Initial Condition	The IUT is operating.
Expected Behaviour	Check that: When using multicast or broadcast, the IUT transmits the bandwidth opportunity granting an integer multiple of the "Bandwidth request opportunity size" in the UCD.
Test strategy	
Notes	

TP ID	TP/BS/BWA/BV-H003
IEEE 802.16 Reference	clauses 6.3.6.3, 6.3.7.4, 6.3.9.4 and 8.3
PICS item	
Initial Condition	IUT has authorized and registered an SS.
Expected Behaviour	Check that: The IUT sends in every frame a UL-MAP containing the Basic CID and the Request IE.
Test strategy	
Notes	

TP ID	TP/BS/BWA/BV-H004
IEEE 802.16 Reference	clauses 6.3.6.3, 6.3.7.4, 6.3.9.4 and 8.3
PICS item	
Initial Condition	IUT has authorized and registered an SS.
Expected Behaviour	Check that: The IUT sends in every frame a UL-MAP containing the Basic CID and the Data Grant Burst Type IE.
Test strategy	
Notes	

TP ID	TP/BS/BWA/BV-H005
IEEE 802.16 Reference	clauses 6.3.6.3, 6.3.7.4, 6.3.9.4 and 8.3
PICS item	
Initial Condition	IUT has authorized and registered an SS.
Expected Behaviour	Check that: The IUT sends in every frame a UL-MAP containing the Multicast CID and the Request IE.
Test strategy	
Notes	

TP ID	TP/BS/BWA/BV-H006
IEEE 802.16 Reference	clauses 6.3.6.3, 6.3.7.4, 6.3.9.4 and 8.3
PICS item	
Initial Condition	IUT has authorized and registered an SS.
Expected Behaviour	Check that: The IUT sends in every frame a UL-MAP containing the Broadcast CID and the Request IE.
Test strategy	
Notes	

TP ID	TP/BS/BWA/BV-H100
IEEE 802.16 Reference	clause 6.3.6.3.1
PICS item	
Initial Condition	The IUT is operational and the IUT is receiving on a non-UGS connection.
Expected Behaviour	Check that: To poll the IUT individually (unicast poll), the IUT transmits a Data Grant IE on the Basic CID.
Test strategy	
Notes	

TP ID	TP/BS/BWA/BV-H101
IEEE 802.16 Reference	clause 6.3.6.3.2
PICS item	
Initial Condition	The IUT is operational with multiple subscriber stations.
Expected Behaviour	Check that: When there is insufficient bandwidth to unicast poll an inactive SS on its Basic CID, the IUT polls the inactive SS using a multicast or broadcast bandwidth allocation on a corresponding CID.
Test strategy	
Notes	

TP ID	TP/BS/BWA/BV-H102
IEEE 802.16 Reference	clause 6.3.6.3.1
PICS item	
Initial Condition	The IUT is operational and the receiving an UL UGS connection.
Expected Behaviour	Check that: On receiving a Grant Management sub header with the PM bit not set (zero), the IUT does not poll the SS.
Test strategy	
Notes	

TP ID	TP/BS/BWA/BV-H103
IEEE 802.16 Reference	clauses 6.3.6.3.1 and 6.3.6.3.3
PICS item	
Initial Condition	The IUT is operational and the IUT is receiving on a UGS connection.
Expected Behaviour	Check that: On receiving a Grant Management sub header with the PM bit set to one, the IUT unicast polls by transmitting a Data Grant IE on the Basic CID.
Test strategy	
Notes	

TP ID	TP/BS/BWA/BV-H104
IEEE 802.16 Reference	clause 6.3.6.3.3
PICS item	
Initial Condition	The IUT is operational with multiple subscriber stations one of which uses the UGS scheduling service.
Expected Behaviour	Check that: When the UGS scheduling service consumes bandwidth to the point that the QoS requirements of other SSs cannot be met, the IUT polls the UGS connection SS on its Basic CID using a Data Grant IE.
Test strategy	
Notes	

5.2.6.1   Request/Grant (REQ)

TP ID	TP/BS/BWA/REQ/BV-H000
IEEE 802.16 Reference	clauses 6.3.2.1.2 and 6.3.6.1
PICS Item	
Initial Condition	IUT is operating and an UL service flow with Best Effort (BE) scheduling is established.
Expected Behaviour	Check that: On receiving a Bandwidth Request Header of aggregate type, the IUT transmits one or more uplink bandwidth grants satisfying the request.
Test strategy	Straightforward.
Notes	

TP ID	TP/BS/BWA/REQ/BV-H001
IEEE 802.16 Reference	clauses 6.3.2.1.2 and 6.3.6.1
PICS Item	
Initial Condition	IUT is operating and an UL service flow with Best Effort (BE) scheduling is established.
Expected Behaviour	Check that: On receiving a Bandwidth Request Header of incremental type, the IUT transmits one or more uplink bandwidth grants satisfying the request.
Test strategy	Straightforward.
Notes	

TP ID	TP/BS/BWA/REQ/BV-H002
IEEE 802.16 Reference	clause 8.3.7.3.1
PICS Item	
Initial Condition	IUT is operating. Focused Contention is not supported.
Expected Behaviour	Check that: On allocating a transmission opportunity to request bandwidth, the IUT transmits a Request Region Full IE (a UL-MAP IE with UIUC=2) in the UL-MAP.
Test strategy	Straightforward.
Notes	Requires a means to provoke the IUT to allocate a bandwidth request opportunity.

TP ID	TP/BS/BWA/REQ/BV-H003
IEEE 802.16 Reference	clause 8.3.7.3.1
PICS Item	
Initial Condition	IUT is operating. Focused Contention is not supported. IUT has transmitted a Request Region Full IE in the UL-MAP
Expected Behaviour	Check that: On receiving a Bandwidth Request Header in the region indicated by the Request Region Full IE, the IUT transmits one or more uplink grants for the requested bandwidth satisfying the request.
Test strategy	Straightforward.
Notes	

TP ID	TP/BS/BWA/REQ/BV-H004
IEEE 802.16 Reference	clauses 6.3.2.1.2 and 6.3.6.1
PICS Item	
Initial Condition	IUT is operating and an UL service is established.
Expected Behaviour	Check that: On receiving a Bandwidth Request Header in an uplink grant allocation for UIUC = 5 to 12, the IUT transmits one or more uplink grants for the requested bandwidth satisfying the request.
Test strategy	Straightforward.
Notes	

TP ID	TP/BS/BWA/REQ/BV-H005
IEEE 802.16 Reference	clause 6.3.2.3.4
PICS Item	
Initial Condition	IUT is operating and an UL service is established.
Expected Behaviour	Check that: To allocate a bandwidth grant, the IUT uses the SS's Basic CID.
Test strategy	
Notes	

TP ID	TP/BS/BWA/REQ/BV-H006
IEEE 802.16 Reference	clauses 6.3.2.1.2 and 6.3.6.1
PICS Item	
Initial Condition	IUT is operating. An UL service with UGS scheduling is established and is in active state.
Expected Behaviour	Check that: The IUT grants sufficient amount of capacity at correct intervals.
Test strategy	
Notes	

TP ID	TP/BS/BWA/REQ/BV-H007
IEEE 802.16 Reference	clauses 6.3.2.1.2 and 6.3.6.1
PICS Item	
Initial Condition	IUT is operating. A UL service with rtPS scheduling is established and is in active state.
Expected Behaviour	Check that: The IUT issues polls within sufficient time to meet the connection's latency requirement.
Test strategy	
Notes	

TP ID	TP/BS/BWA/REQ/BV-H008
	Deleted

TP ID	TP/BS/BWA/REQ/BV-H009
IEEE 802.16 Reference	clauses 6.3.2.1.2 and 6.3.6.1
PICS Item	
Initial Condition	IUT is operating and an UL service flow with Best Effort (BE) scheduling is established.
Expected Behaviour	Check that: On receiving a piggyback request for more BW, the IUT transmits one or more uplink bandwidth grants satisfying the request.
Test strategy	
Notes	

TP ID	TP/BS/BWA/REQ/BV-H010
IEEE 802.16 Reference	clauses 6.3.2.1.2 and 6.3.6.1
PICS Item	
Initial Condition	IUT is operating and an UL service flow with nrtPS scheduling is established.
Expected Behaviour	Check that: On receiving a Bandwidth Request Header of aggregate type, the IUT transmits one or more uplink bandwidth grants satisfying the request.
Test strategy	
Notes	

TP ID	TP/BS/BWA/REQ/BV-H011
IEEE 802.16 Reference	clauses 6.3.2.1.2 and 6.3.6.1
PICS Item	
Initial Condition	IUT is operating and an UL service flow with nrtPS scheduling is established.
Expected Behaviour	Check that: On receiving a Bandwidth Request Header of incremental type, the IUT transmits one or more uplink bandwidth grants satisfying the request.
Test strategy	
Notes	

TP ID	TP/BS/BWA/REQ/BV-H012
IEEE 802.16 Reference	clauses 6.3.2.1.2 and 6.3.6.1
PICS Item	
Initial Condition	IUT is operating and an UL service flow with nrtPS scheduling is established.
Expected Behaviour	Check that: On receiving a piggyback request for more BW, the IUT transmits one or more uplink bandwidth grants satisfying the request.
Test strategy	
Notes	

TP ID	TP/BS/BWA/REQ/BV-H013
IEEE 802.16 Reference	clauses 6.3.2.1.2 and 6.3.6.1
PICS Item	
Initial Condition	IUT is operating and an UL service flow with rtPS scheduling is established.
Expected Behaviour	Check that: On receiving a Bandwidth Request Header of aggregate type, the IUT transmits one or more uplink bandwidth grants satisfying the request.
Test strategy	
Notes	

TP ID	TP/BS/BWA/REQ/BV-H014
IEEE 802.16 Reference	clauses 6.3.2.1.2 and 6.3.6.1
PICS Item	
Initial Condition	IUT is operating and an UL service flow with rtPS scheduling is established.
Expected Behaviour	Check that: On receiving a Bandwidth Request Header of incremental type, the IUT transmits one or more uplink bandwidth grants satisfying the request.
Test strategy	
Notes	

TP ID	TP/BS/BWA/REQ/BV-H015
IEEE 802.16 Reference	clauses 6.3.2.1.2 and 6.3.6.1
PICS Item	
Initial Condition	IUT is operating and an UL service flow with rtPS scheduling is established.
Expected Behaviour	Check that: On receiving a piggyback request for more BW, the IUT transmits one or more uplink bandwidth grants satisfying the request.
Test strategy	
Notes	

TP ID	TP/BS/BWA/REQ/BV-H016
	Deleted

TP ID	TP/BS/BWA/REQ/BV-H017
	Deleted

TP ID	TP/BS/BWA/REQ/BV-H018
	Deleted

TP ID	TP/BS/BWA/REQ/BV-H019
	Deleted

TP ID	TP/BS/BWA/REQ/BV-H020
IEEE 802.16 Reference	clauses 6.3.2.1.2 and 6.3.6.1
PICS Item	
Initial Condition	IUT is operating and an UL service flow is established.
Expected Behaviour	Check that: While executing polling, the IUT accepts stuff bytes (0xFF) using the associated burst profile.
Test strategy	
Notes	

TP ID	TP/BS/BWA/REQ/BV-H021
IEEE 802.16 Reference	clauses 6.3.2.1.2 and 6.3.6.1
PICS Item	
Initial Condition	IUT is operating. An UL service with UGS scheduling is established and is in active state. Another UL service with rtPS scheduling is established and is in active state.
Expected Behaviour	Check that: On receiving a MAC PDU on the UGS connection with the PM bit set to 1, the IUT polls within 10 ms.
Test strategy	
Notes	

TP ID	TP/BS/BWA/REQ/BV-H022
IEEE 802.16 Reference	clauses 6.3.2.1.2 and 6.3.6.1
PICS Item	
Initial Condition	IUT is operating. An UL service with UGS scheduling is established and is in active state. Another UL service with nrtPS scheduling is established and is in active state.
Expected Behaviour	Check that: On receiving a MAC PDU on the UGS connection with PM bit set to 1, the IUT issues polls within QoS limits.
Test strategy	
Notes	

TP ID	TP/BS/BWA/REQ/BV-H023
IEEE 802.16 Reference	clauses 6.3.2.1.2 and 6.3.6.1
PICS Item	
Initial Condition	IUT is operating. An UL service with BE scheduling is established and is in active state.
Expected Behaviour	Check that: On receiving a Bandwidth Request Header of aggregate type of zero bytes, the IUT refrains from issuing more grants to the requesting entity.
Test strategy	
Notes	

TP ID	TP/BS/BWA/REQ/BV-H024
IEEE 802.16 Reference	clauses 6.3.2.1.2 and 6.3.6.1
PICS Item	
Initial Condition	IUT is operating. An UL service with rtPS scheduling is established and is in active state.
Expected Behaviour	Check that: On receiving a Bandwidth Request Header of aggregate type of zero bytes, the IUT refrains from issuing more grants to the requesting entity.
Test strategy	
Notes	

TP ID	TP/BS/BWA/REQ/BV-H025
IEEE 802.16 Reference	clauses 6.3.2.1.2 and 6.3.6.1
PICS Item	
Initial Condition	IUT is operating. A service flow is established and is in active state. Focused Contention is supported.
Expected Behaviour	Check that: To allocate a transmission opportunity for requesting bandwidth in REQ Region Focused, the IUT sends a UL-MAP with UIUC=3 indicating the Request Region Focused IE.
Test strategy	
Notes	Requires a means to provoke the IUT to allocate a transmission opportunity for requesting bandwidth in REQ Region Focused.

TP ID	TP/BS/BWA/REQ/BV-H026
IEEE 802.16 Reference	clause 8.3.7.3.1
PICS Item	
Initial Condition	IUT is operating. A service flow is established and is in active state. Focused Contention is supported. IUT has transmitted a Request Region Focused IE in the UL-MAP.
Expected Behaviour	Check that: On receiving a short code over a Transmission Opportunity which consists of 4 sub-carriers by two OFDM symbols in the Request Region Focused, the IUT transmits a UL-MAP IE with UIUC=4 and the Focused Contention IE.
Test strategy	
Notes	Requires a means to provoke the IUT to allocate a transmission opportunity for requesting bandwidth in REQ Region Focused.

TP ID	TP/BS/BWA/REQ/BV-H027
IEEE 802.16 Reference	clauses 6.3.2.1.2 and 6.3.6.1
PICS Item	
Initial Condition	IUT is operating. A service flow is established and is in active state. Focused Contention is supported. The IUT has sent a Focused Contention IE.
Expected Behaviour	Check that: On receiving a Bandwidth Request Header with transmission opportunity and contention channels, the IUT transmits one or more uplink bandwidth grants satisfying the request.
Test strategy	
Notes	Requires a means to provoke the IUT to allocate a transmission opportunity for requesting bandwidth in REQ Region Focused.

TP ID	TP/BS/BWA/REQ/BV-H028
IEEE 802.16 Reference	clauses 6.3.2.1.2 and 6.3.6.1
PICS Item	
Initial Condition	IUT is operating. A service flow is established and is in active state. Focused Contention is supported. The IUT has sent a UL-MAP IE with UIUC=13 and a Sub Channelized Network Entry IE allocating a transmission opportunity and a contention sub-channel.
Expected Behaviour	Check that: On receiving a Bandwidth Request Header in the chosen transmission opportunity and chosen contention channels, the IUT transmits one or more uplink bandwidth grants satisfying the request.
Test strategy	
Notes	Requires a means to provoke the IUT to send UL-MAP IE with UIUC=13 and Sub Channelized Network Entry IE allocating transmission opportunity and contention sub-channel.

TP ID	TP/BS/BWA/REQ/BV-H029
IEEE 802.16 Reference	clauses 6.3.2.1.2 and 6.3.6.1
PICS Item	
Initial Condition	IUT is operating. A service flow is established and is in active state. Focused Contention is supported. The IUT has sent a UL-MAP IE with UIUC = 15 and an AAS IE with Extended UIUC = 0x02.
Expected Behaviour	Check that: On receiving a Bandwidth Request Header in the allocated transmission opportunity, the IUT transmits one or more uplink bandwidth grants satisfying the request.
Test strategy	
Notes	Requires a means to provoke the IUT to send UL-MAP IE with UIUC = 15 and AAS IE with Extended UIUC = 0x02.

TP ID	TP/BS/BWA/REQ/BV-H030
IEEE 802.16 Reference	clause 6.3.6.4
PICS item	
Initial Condition	The IUT is operational.
Expected Behaviour	Check that: On receiving a Focused Contention Transmission during a REQ Region-Focused, 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.
Test strategy	
Notes	

TP ID	TP/BS/BWA/REQ/BV-H031
IEEE 802.16 Reference	clause 6.3.5.2.2
PICS item	
Initial Condition	IUT is operating. A service flow is established with rtPS scheduling in use for this connection.
Expected Behaviour	Check that: The IUT periodically transmits unicast request opportunities and sets the Request/Transmission Policy to prohibit use of contention requests on the connection.
Test strategy	
Notes	

TP ID	TP/BS/BWA/REQ/BV-H032
IEEE 802.16 Reference	clause 6.3.5.2.3
PICS item	
Initial Condition	IUT is operating. A service flow is established with nrtPS scheduling in use for this connection.
Expected Behaviour	Check that: The IUT transmits timely unicast request opportunities and sets the Request/Transmission Policy to allow use of contention requests on the connection.
Test strategy	
Notes	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).

TP ID	TP/BS/BWA/REQ/BV-H033
IEEE 802.16 Reference	clause 6.3.5.2.1
PICS item	
Initial Condition	IUT is operating. A service flow is established with UGS scheduling in use for this connection.
Expected Behaviour	Check that: On receiving a Grant Management field with the Slip Indicator bit cleared to 0, the IUT does not allocate more bandwidth than that of the Maximum Sustained Traffic Rate parameter of the Active QoS Parameter set.
Test strategy	
Notes	

TP ID	TP/BS/BWA/REQ/BV-H034
IEEE 802.16 Reference	clause 6.3.5.2.1
PICS item	
Initial Condition	IUT is operating. A service flow is established with UGS scheduling in use for this connection.
Expected Behaviour	Check that: On receiving a Grant Management field with the Slip Indicator bit set to 1, the IUT either 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.
Test strategy	
Notes	

5.2.6.2 MultiCast Polling (MCP)

TP ID	TP/BS/BWA/MCP/BV-H000
IEEE 802.16 Reference	clause 6.3.12 Figure "Multicast polling assignment-BS"
PICS item	
Initial Condition	IUT is operational.
Expected Behaviour	Check that: To add an SS to a multicast polling group, the IUT transmits a MCA-REQ message with the Assignment field set to 0x01.
Test strategy	
Notes	The type of polling for the uplink connection could be defined by PIXIT parameter.

TP ID	TP/BS/BWA/MCP/BV-H001
IEEE 802.16 Reference	clause 6.3.12 Figure "Multicast polling assignment-BS"
PICS item	
Initial Condition	IUT is operational. To add an SS to a multicast polling group, the IUT has transmitted an MCA-REQ message with the Assignment field set to 0x01.
Expected Behaviour	Check that: After receiving an MCA-RSP message with a Confirmation Code set to 0x00 (successful), the IUT transmits data to the multicast peers on the multicast CID.
Test strategy	
Notes	The type of polling for the uplink connection could be defined by PIXIT parameter.

TP ID	TP/BS/BWA/MCP/BV-H002
IEEE 802.16 Reference	clause 6.3.12 Figure "Multicast polling assignment-BS"
PICS item	
Initial Condition	IUT is operational. To add an SS to a multicast polling group, the IUT has transmitted an MCA-REQ message with the Assignment field set to 0x01.
Expected Behaviour	Check that: After receiving an MCA-RSP message with a Confirmation Code set to 0x03 (unsuccessful), the IUT transmits no data to the multicast peer on the multicast CID that transmitted the MCA-RSP.
Test strategy	
Notes	

TP ID	TP/BS/BWA/MCP/BV-H003
IEEE 802.16 Reference	clause 6.3.12 Figure "Multicast polling assignment-BS"
PICS item	
Initial Condition	IUT is operational. An SS has been added to a multicast polling group and is receiving on the Multicast CID.
Expected Behaviour	Check that: To direct the SS to leave the multicast group, the IUT transmits a MCA-REQ message with the assignment field set to 0x00.
Test strategy	
Notes	Requires a means to provoke the MCA-REQ.

TP ID	TP/BS/BWA/MCP/BV-H004
IEEE 802.16 Reference	clause 6.3.12 Figure "Multicast polling assignment-BS"
PICS item	
Initial Condition	IUT is operational. A multicast connection with an SS is operational. The IUT has transmitted an MCA-REQ directing the SS to leave the multicast group.
Expected Behaviour	Check that: On receiving a valid MCA-RSP from the SS to leave the multicast group, the IUT transmits no further transmission opportunities to the SS for the former Multicast CID.
Test strategy	
Notes	

TP-ID	TP/BS/BWA/MCP/BV-H005
IEEE 802.16 Reference	clause 6.3.12 Figure "Multicast polling assignment-BS"
PICS Item	
Initial Condition	The IUT is operational.
Expected Behaviour	Check that: The IUT refrains from adding SS with only UGS or rtPS polling connections to Multicast Polling groups.
Test strategy	
Notes	Refer to PIXIT for information regarding conditions under which the IUT may create Multicast Polling groups.

TP ID	TP/BS/BWA/MCP/BV-H006
IEEE 802.16 Reference	clause 6.3.6.12
PICS item	
Initial Condition	IUT has authorized and registered an SS.
Expected Behaviour	Check that: While executing Multicast polling, on receiving a Bandwidth Request Header containing the Multicast CID using the Request IE burst profile, the IUT sends a Grant Management Sub header containing the Multicast CID.
Test strategy	
Notes	

TP ID	TP/BS/BWA/MCP/BV-H007
IEEE 802.16 Reference	clause 6.3.6.12
PICS item	
Initial Condition	IUT has authorized and registered an SS.
Expected Behaviour	Check that: While executing Multicast polling, on receiving a Generic MAC Header containing the Multicast CID and a Grant Management Sub header (PiggyBack request) using the Request IE burst profile, the IUT sends a Grant Management Sub header containing the Multicast CID.
Test strategy	
Notes	

TP-ID	TP/BS/BWA/MCP/BI-H000
IEEE 802.16 Reference	clause 6.3.12 Figure "Multicast polling assignment-BS"
PICS Item	
Initial Condition	The IUT is has sent an MCA-REQ, started T15, and is waiting for an MCA-RSP.
Expected Behaviour	Check that: On receiving an improperly formatted MCA-RSP message, the IUT silently discards the received message and, after Timer T15 expires without receiving a valid MCA-REQ, resends the MCA-REQ message.
Test strategy	
Notes	

TP-ID	TP/BS/BWA/MCP/BO-H000
IEEE 802.16 Reference	clause 6.3.12 Figure "Multicast polling assignment-BS"
PICS Item	
Initial Condition	No multicast polling group transactions are outstanding.
Expected Behaviour	Check that: On receiving an unsolicited MCA-RSP message, the IUT silently discards the received message.
Test strategy	
Notes	

TP ID	TP/BS/BWA/MCP/TI-H000
IEEE 802.16 Reference	clause 6.3.12 Figure "Multicast polling assignment-BS"
PICS item	
Initial Condition	IUT is operational. To add an SS to a multicast polling group, the IUT has transmitted an MCA-REQ message with the Assignment field set to 0x01 and started T15.
Expected Behaviour	Check that: On not receiving a valid MCA-RSP and on Timer T15 expiry, the IUT resends the MCA-REQ message.
Test strategy	
Notes	

TP ID	TP/BS/BWA/MCP/TI-H001
IEEE 802.16 Reference	clause 6.3.12 Figure "Multicast polling assignment-BS"
PICS item	
Initial Condition	IUT is operational. To add an SS to a multicast polling group, the IUT has transmitted an MCA-REQ message with the Assignment field set to 0x01 and started T15.
Expected Behaviour	Check that: Each time for MCA Request retries on not receiving a valid MCA-RSP, the IUT retransmits the MCA-REQ after T15 expiry and restarts T15. After the maximum number of MCA-REQ retries is exceeded, the IUT then ceases transmitting the MCA-REQ.
Test strategy	
Notes	Need a PIXIT parameter for MCA Request retries. When attempts fail n times, Figure Multicast polling assignment-BS shows IUT going back to Wait state. Thus, the test for ceasing transmitting the MCA-REQ.

5.2.7 Reset and Re-Registration (RER)

TP-ID	TP/BS/RER/BV-H000
IEEE 802.16 Reference	clause 6.3.2.3.22
PICS Item	
Initial Condition	The IUT is operational. A downlink service is active.
Expected Behaviour	Check that: To reset the SS, the IUT sends the RES-CMD on the basic CID. The IUT accepts SS re-entry. The service is disrupted then resumes.
Test strategy	
Notes	Require a means to force the IUT to reset the SS.

TP-ID	TP/BS/RER/BV-H001
IEEE 802.16 Reference	clause 6.3.2.3.26
PICS Item	
Initial Condition	The IUT is operational. A downlink service is active.
Expected Behaviour	Check that: To deregister the SS and direct it to go to another channel, the IUT sends the DREG-CMD (action code 0x00) on the basic CID. The service is terminated.
Test strategy	
Notes	Require a means to force the IUT to deregister the SS with action code 0x00.

TP-ID	TP/BS/RER/BV-H002
IEEE 802.16 Reference	clause 6.3.2.3.26
PICS Item	
Initial Condition	The IUT is operational. A downlink service is active.
Expected Behaviour	Check that: To deregister the SS and telling it to wait for a RES-CMD, the IUT sends the DREG-CMD (action code 0x01) on the basic CID. The service is disrupted.
Test strategy	
Notes	Require a means to force the IUT to deregister the SS with action code 0x01.

TP-ID	TP/BS/RER/BV-H003
IEEE 802.16 Reference	clauses 6.3.2.3.26 and 6.3.2.3.22
PICS Item	
Initial Condition	The IUT is operational. A downlink service is active. The IUT has sent a DREG-CMD message with action code 0x01.
Expected Behaviour	Check that: After having sent a RES-CMD on the basic CID, the IUT successfully accepts SS re-entry to the system. The service resumes.
Test strategy	
Notes	Require a means to force the IUT to deregister the SS with action code 0x01.

TP-ID	TP/BS/RER/BV-H004
IEEE 802.16 Reference	clause 6.3.2.3.26
PICS Item	
Initial Condition	The IUT is operational. A downlink service is active.
Expected Behaviour	Check that: To deregister the SS and tell it to go to listen only mode, the IUT sends the DREG-CMD (action code 0x02) on the basic CID. The service is disrupted.
Test strategy	
Notes	Require a means to force the IUT to deregister the SS with action code 0x02.

TP-ID	TP/BS/RER/BV-H005
IEEE 802.16 Reference	clause 6.3.2.3.26
PICS Item	
Initial Condition	The IUT is operational. The IUT has sent a DREG-CMD message with action code 0x02.
Expected Behaviour	Check that: To re-register the SS, the IUT sends a DREG-CMD message with action code 0x03 on the basic CID. The service resumes.
Test strategy	
Notes	Require a means to force the IUT to re-register with action code 0x03.

TP ID	TP/BS/RER/BI-H000
IEEE 802.16 Reference	clause 6.3.2.3.22
PICS item	
Initial Condition	The IUT is operational.
Expected Behaviour	Check that: When the SS does not respond to RLC messages, the IUT transmits a RES-CMD message on the Basic CID.
Test strategy	
Notes	

TP ID	TP/BS/RER/BI-H001
IEEE 802.16 Reference	clause 6.3.2.3.22
PICS item	
Initial Condition	The IUT is operational.
Expected Behaviour	Check that: On receiving abnormalities in the uplink transmission, the IUT transmits a RES-CMD message on the Basic CID.
Test strategy	
Notes	

5.2.8   CloCk Comparison (CCC)

TP-ID	TP/BS/CCC/BV-H000
IEEE 802.16 Reference	clause 6.3.2.3.25
PICS Item	
Initial Condition	The IUT has initiated a UGS connection and is transmitting CLK-CMP messages.
Expected Behaviour	Check that: When it uses different sources for symbol and network clocks and when the network clock varies, the IUT transmits the corresponding clock values in the CLK-CMP message.
Test strategy	
Notes	

TP ID	TP/BS/CCC/BV-H001
IEEE 802.16 Reference	clause 6.3.2.3.25 Table "Parameters and constants"
PICS item	
Initial Condition	The IUT is operational.
Expected Behaviour	Check that: The IUT transmits every 50 ms on a broadcast connection a valid CLK-CMP message.
Test strategy	
Notes	

TP ID	TP/BS/CCC/BV-H002
IEEE 802.16 Reference	clauses 6.3.2.3.25 and 6.3.7.6 Table "Parameters and constants"
PICS item	
Initial Condition	The IUT is operational and AAS is in use.
Expected Behaviour	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.
Test strategy	
Notes	AAS in use

5.2.9   MAC PDU Construction (MAC)

TP-ID	TP/BS/MAC/BV-H000
IEEE 802.16 Reference	clause 6.3.3
PICS Item	
Initial Condition	IUT is operating. Packing is on.
Expected Behaviour	Check that: For data transport, primary, and secondary connections in the DL, the IUT correctly packs and fragments data.
Test strategy	
Notes	

TP-ID	TP/BS/MAC/BV-H001
IEEE 802.16 Reference	clause 6.3.3
PICS Item	
Initial Condition	IUT is operating. Packing is on.
Expected Behaviour	Check that: For data transport, primary, and secondary connections in the UL, the IUT correctly unpacks and de-fragments data.
Test strategy	
Notes	

TP ID	TP/BS/MAC/BV-H002
IEEE 802.16 Reference	clause 6.3.2.3
PICS item	
Initial Condition	IUT is operating.
Expected Behaviour	Check that: The IUT neither fragments nor packs MAC Management messages on the Basic, Broadcast, and Initial Ranging connections.
Test strategy	
Notes	

TP ID	TP/BS/MAC/BV-H100
IEEE 802.16 Reference	clause 6.3.3.7
PICS item	
Initial Condition	IUT is operating.
Expected Behaviour	Check that: When allocated space within a data burst cannot be used and its size is less than that of a MAC header, the IUT initializes the unused space to a known state by setting each unused byte to the stuff byte value.
Test strategy	
Notes	

TP ID	TP/BS/MAC/BV-H101
IEEE 802.16 Reference	clause 6.3.3.7 Table "CIDs"
PICS item	
Initial Condition	IUT is operating.
Expected Behaviour	Check that: when allocated space within a data burst cannot be used and its size at least the size of a MAC header, the IUT initializes the unused space to a known state: - either by setting each unused byte to the stuff byte value 0xFF; or - formats the unused space as a MAC Padding 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.
Test strategy	
Notes	

TP ID	TP/BS/MAC/BV-H102
IEEE 802.16 Reference	clause 6.3.2.2
PICS item	
Initial Condition	IUT is operating.
Expected Behaviour	Check that: When the ARQ_ACK Allocation sub header and other per-PDU sub headers are in the same PDU, the IUT constructs the MAC PDU with ARQ_ACK Allocation sub header as the last per-PDU sub header.
Test strategy	
Notes	

TP ID	TP/BS/MAC/BV-H103
IEEE 802.16 Reference	clause 6.3.2.2
PICS item	
Initial Condition	IUT is operating.
Expected Behaviour	Check that: The IUT does not construct MAC PDUs with Packing and Fragmentation sub headers in the same MAC PDU.
Test strategy	
Notes	

TP ID	TP/BS/MAC/BV-H104
IEEE 802.16 Reference	clause 6.3.2.2
PICS item	
Initial Condition	IUT is operating.
Expected Behaviour	Check that: When per-PDU sub headers and per-SDU sub headers are in the same MAC PDU, the IUT constructs the PDU with the per-PDU sub headers always before the first per-SDU sub header.
Test strategy	
Notes	

TP ID	TP/BS/MAC/BV-H105
IEEE 802.16 Reference	clause 6.3.2.2.4
PICS item	
Initial Condition	IUT is operating.
Expected Behaviour	Check that: When ARQ is enabled and packing is in use, the IUT transports the ARQ Feedback Payload as the first packed payload.
Test strategy	
Notes	

TP ID	TP/BS/MAC/BV-H106
IEEE 802.16 Reference	clause 6.3.2.1.1 Table "Generic MAC header fields"
PICS item	
Initial Condition	IUT is operating.
Expected Behaviour	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.
Test strategy	
Notes	

TP ID	TP/BS/MAC/BI-H000
IEEE 802.16 Reference	clause 6.3.2.3
PICS item	
Initial Condition	IUT is operating.
Expected Behaviour	Check that: On receiving a MAC management message containing a value in a "reserved" field, the IUT silently discards the message.
Test strategy	
Notes	

TP ID	TP/BS/MAC/BI-H001
IEEE 802.16 Reference	clause 6.3.2.3
PICS item	
Initial Condition	IUT is operating.
Expected Behaviour	Check that: On receiving a MAC management message not containing all required parameters, the IUT silently discards the message.
Test strategy	
Notes	

TP ID	TP/BS/MAC/BI-H002
IEEE 802.16 Reference	clause 6.3.2.3
PICS item	
Initial Condition	IUT is operating.
Expected Behaviour	Check that: On receiving a MAC management message containing erroneously encoded parameters, the IUT silently discards the message.
Test strategy	
Notes	

TP-ID	TP/BS/MAC/BI-H003
IEEE 802.16 Reference	clause 6.3.2.1.1 Table "Generic MAC header fields"
PICS Item	
Initial Condition	IUT is operating. SS is registered and authenticated with data service established.
Expected Behaviour	Check that: On receiving MAC PDUs with an incorrect HCS, the IUT silently discards the PDU.
Test strategy	
Notes	

5.2.9.1 PACKing (PACK)

TP ID	TP/BS/MAC/PACK/BV-H000
IEEE 802.16 Reference	clause 6.3.2.2.3
PICS item	
Initial Condition	IUT is operational.
Expected Behaviour	Check that: When packing variable-length MAC SDUs, the IUT precedes each one with a Packing sub header.
Test strategy	
Notes	

TP ID	TP/BS/MAC/PACK/BV-H001
IEEE 802.16 Reference	clause 6.3.3.4
PICS item	
Initial Condition	IUT is operational. Packing is possible for a connection.
Expected Behaviour	Check that: The IUT transmits MAC SDUs each in a separate PDU or packs a group of MAC SDUs into a single MAC PDU.
Test strategy	
Notes	Packing of a PDU is not mandatory even if implemented.

TP ID	TP/BS/MAC/PACK/BV-H002
IEEE 802.16 Reference	clause 6.3.3.4.1.1
PICS item	
Initial Condition	IUT is operational. The IUT has established a non-ARQ connection (Extended Type bit in generic MAC header set to 0) for fixed-length SDUs.
Expected Behaviour	Check that: For packing fixed length blocks, the IUT sets the Request/Transmission policy to allow packing and prohibit fragmentation.
Test strategy	
Notes	

TP ID	TP/BS/MAC/PACK/BV-H003
IEEE 802.16 Reference	clause 6.3.3.4.1.1
PICS item	
Initial Condition	IUT is operational. The IUT has established a non-ARQ connection (Extended Type bit in generic MAC header set to 0) for fixed-length SDUs.
Expected Behaviour	Check that: To establish a non-ARQ connection for fixed-length SDUs, the IUT includes the SDU size in the DSA-REQ message.
Test strategy	
Notes	

TP ID	TP/BS/MAC/PACK/BV-H004
IEEE 802.16 Reference	clause 6.3.3.4.1.2
PICS item	
Initial Condition	IUT is operational. The IUT has established a non-ARQ connection (Extended Type bit in generic MAC header set to 0) for variable-length SDUs.
Expected Behaviour	Check that: The IUT attaches a Packing sub header to each MAC SDU in the MAC PDU.
Test strategy	
Notes	

TP ID	TP/BS/MAC/PACK/BV-H005
IEEE 802.16 Reference	clause 6.3.3.4.2
PICS item	
Initial Condition	IUT is operational. The IUT has established an ARQ connection (Extended Type bit in generic MAC header set to 1) for variable-length SDUs.
Expected Behaviour	Check that: The IUT attaches a Packing sub header to each MAC SDU in the MAC PDU.
Test strategy	
Notes	

TP ID	TP/BS/MAC/PACK/BV-H100
IEEE 802.16 Reference	clause 6.3.3.4.2
PICS item	
Initial Condition	IUT is operational. ARQ and packing are enabled on the connection.
Expected Behaviour	Check that: On receiving a MAC SDU broken into multiple fragments that are then packed into the same MAC PDU, the IUT unpacks and de-fragments the MAC PDU to form the MAC SDU.
Test strategy	
Notes	

TP ID	TP/BS/MAC/PACK/BV-H101
IEEE 802.16 Reference	clause 6.3.3.4.2
PICS item	
Initial Condition	IUT is operational. ARQ and packing are enabled on the connection.
Expected Behaviour	Check that: On receiving a MAC PDU packed with SDU fragments from different SDUs including a mix of first transmissions and retransmissions, the IUT unpacks and de-fragments the MAC PDU to form the MAC SDUs.
Test strategy	
Notes	

TP ID	TP/BS/MAC/PACK/BV-H102
IEEE 802.16 Reference	clause 6.3.3.4.3
PICS item	
Initial Condition	ARQ not enabled on the connection.
Expected Behaviour	Check that: On receiving a fragmented and packed ARQ Feedback Payload, the IUT ignores the FSN/BSN and processes the ARQ Feedback Payload.
Test strategy	
Notes	

5.2.9.2   Fragmentation (FRAG)

TP-ID	TP/BS/MAC/FRAG/BV-H000
IEEE 802.16 Reference	clause 6.3.3.3
PICS Item	
Initial Condition	IUT is operational and using the ATM CS.
Expected Behaviour	Check that: When transmitting continuous downlink ATM cell data, the IUT transmits ATM cells without fragmentation.
Test strategy	
Notes	

TP ID	TP/BS/MAC/FRAG/BV-H001
IEEE 802.16 Reference	clause 6.3.3.3
PICS item	
Initial Condition	IUT is operational. 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.
Expected Behaviour	Check that: The IUT forms fragments whose length is less than or equal to the negotiated maximum size.
Test strategy	
Notes	

TP-ID	TP/BS/MAC/FRAG/BV-H002
IEEE 802.16 Reference	clause 6.3.3.3
PICS Item	
Initial Condition	IUT is operational and using the packet CS.
Expected Behaviour	Check that: When transmitting continuous downlink data including large packets, the IUT correctly transmits fragmented packets.
Test strategy	Guidance for the strategy: Use BPSK modulation to force fragmentation. Use Echo-Request either to the BS or to a IP device behind the BS to send the content to be returned in the fragmented form.
Notes	

TP-ID	TP/BS/MAC/FRAG/BV-H003
IEEE 802.16 Reference	clause 6.3.3.3
PICS Item	
Initial Condition	IUT is operational. An active connection has been set up with fragmentation enabled.
Expected Behaviour	Check that: When transmitting data which does not fit into one MAC PDU, the IUT transmits two or more consecutive MAC PDUs with the Fragmentation Sub Header and FC bits properly set.
Test strategy	
Notes	

TP ID	TP/BS/MAC/FRAG/BV-H004
IEEE 802.16 Reference	clause 6.3.2.2
PICS item	
Initial Condition	IUT is operational. Fragmentation and Grant Management sub headers are in the same PDU.
Expected Behaviour	Check that: The IUT constructs the MAC PDU with the Grant Management sub header first followed by the Fragmentation sub header.
Test strategy	
Notes	

TP ID	TP/BS/MAC/FRAG/BV-H005
IEEE 802.16 Reference	clause 6.3.3.3.1
PICS item	
Initial Condition	IUT is operational. Non-ARQ connection.
Expected Behaviour	Check that: The IUT transmits fragments once and in sequence.
Test strategy	
Notes	

TP ID	TP/BS/MAC/FRAG/BV-H006
IEEE 802.16 Reference	clause 6.3.3.4.1.2
PICS item	
Initial Condition	IUT is operational. The IUT has established a non-ARQ connection (Extended Type bit in generic MAC header set to 0) for variable-length SDUs.
Expected Behaviour	Check that: The IUT includes fragmentation information for individual MAC PDUs or MAC SDU fragments in the Packing sub header when packing is used.
Test strategy	
Notes	

TP ID	TP/BS/MAC/FRAG/BV-H007
IEEE 802.16 Reference	clause 6.3.3.4.1.2
PICS item	
Initial Condition	IUT is operational. The IUT has established a non-ARQ connection for variable-length SDUs.
Expected Behaviour	Check that: When no Packing sub header is present, the IUT places the fragmentation information for individual MAC SDU fragments in the corresponding Fragmentation sub header.
Test strategy	
Notes	

TP ID	TP/BS/MAC/FRAG/BV-H008
IEEE 802.16 Reference	clause 6.3.3.3.2
PICS item	
Initial Condition	IUT is operational. ARQ-enabled connection.
Expected Behaviour	Check that: The IUT forms fragments for transmission by concatenating sets of ARQ blocks with adjacent sequence numbers.
Test strategy	
Notes	

TP ID	TP/BS/MAC/FRAG/BV-H009
IEEE 802.16 Reference	clause 6.3.3.4.2
PICS item	
Initial Condition	IUT is operational. The IUT has established an ARQ connection for variable-length SDUs on the connection.
Expected Behaviour	Check that: The IUT includes fragmentation information for individual MAC SDUs or MAC SDU fragments in the Packing sub header when packing is used.
Test strategy	
Notes	

TP ID	TP/BS/MAC/FRAG/BV-H010
IEEE 802.16 Reference	clause 6.3.3.4.2
PICS item	
Initial Condition	IUT is operational. The IUT has established an ARQ connection for variable-length SDUs on the connection.
Expected Behaviour	Check that: When no Packing sub header is present, the IUT places the fragmentation information for individual MAC SDU fragments in the corresponding Fragmentation sub header.
Test strategy	
Notes	

TP-ID	TP/BS/MAC/FRAG/BV-H100
IEEE 802.16 Reference	clause 6.3.3.3
PICS Item	
Initial Condition	IUT is operational. An active connection has been set up with fragmentation enabled.
Expected Behaviour	Check that: On receiving two or more consecutive MAC PDUs with Fragmentation Sub-headers and FC bits properly set, the IUT correctly reassembles the Fragmented MAC PDUs.
Test strategy	
Notes	

TP ID	TP/BS/MAC/FRAG/BV-H101
IEEE 802.16 Reference	clause 6.3.3.3.1
PICS item	
Initial Condition	IUT is operational. Non-ARQ connection.
Expected Behaviour	Check that: On receiving fragments in sequence but one fragment is missing, the IUT discards all MAC PDUs on the connection until a new first fragment is detected.
Test strategy	
Notes	

TP ID	TP/BS/MAC/FRAG/BV-H102
IEEE 802.16 Reference	clause 6.3.3.3.1
PICS item	
Initial Condition	IUT is operational. Non-ARQ connection.
Expected Behaviour	Check that: On receiving fragments in sequence but one fragment is missing, the IUT discards all MAC PDUs on the connection until a non-fragmented MAC PDU is detected.
Test strategy	
Notes	

5.2.9.3 PDU Concatenation (CAT)

TP-ID	TP/BS/MAC/CAT/BV-H000
IEEE 802.16 Reference	clause 6.3.3.2
PICS Item	
Initial Condition	IUT is operational.
Expected Behaviour	Check that: To transmit multiple MAC PDUs that can fit into one downlink burst, the IUT concatenate the MAC PDUs into a single burst.
Test strategy	
Notes	

TP-ID	TP/BS/MAC/CAT/BV-H001
IEEE 802.16 Reference	clause 6.3.3.2
PICS Item	
Initial Condition	IUT is operational.
Expected Behaviour	Check that: On receiving multiple MAC PDUs concatenated into single burst, the IUT correctly extracts all the MAC PDUs included in the single burst.
Test strategy	
Notes	

5.2.9.4   Cyclic Redundancy Check (CRC)

TP-ID	TP/BS/MAC/CRC/BV-H000
IEEE 802.16 Reference	clause 6.3.2.3
PICS Item	
Initial Condition	IUT is operating. An SS is registered and authenticated with the IUT. A downlink service flow is established with CRC on.
Expected Behaviour	Check that: The IUT sends data over said connection in MAC PDUs with a correctly computed CRC.
Test strategy	
Notes	

TP ID	TP/BS/MAC/CRC/BV-H001
IEEE 802.16 Reference	clauses 6.3.1.1 and 6.3.3.5
PICS item	
Initial Condition	IUT is operating. CRC use is on.
Expected Behaviour	Check that: The IUT includes a CRC as defined in IEEE 802.3 [9] in each generic MAC header (HT set to 0). The CRC covers the generic MAC header and MAC PDU payload. If the PDU is encrypted, the CRC covers the payload after encryption.
Test strategy	
Notes	

TP ID	TP/BS/MAC/CRC/BV-H002
IEEE 802.16 Reference	clause 6.3.2.3
PICS item	
Initial Condition	IUT is operating.
Expected Behaviour	Check that: The IUT enables CRC usage for the Initial Ranging, Broadcast, Basic, and Primary Management connections.
Test strategy	
Notes	

TP ID	TP/BS/MAC/CRC/BV-H003
IEEE 802.16 Reference	clause 6.3.3.5
PICS item	
Initial Condition	IUT is operating.
Expected Behaviour	Check that: For every bandwidth request header (HT set to 1), the MAC PDU is not protected by a CRC.
Test strategy	
Notes	

TP-ID	TP/BS/MAC/CRC/BI-H000
IEEE 802.16 Reference	clause 6.3.2.3
PICS Item	
Initial Condition	IUT is operating. An SS is registered and authenticated with the IUT. An uplink service flow is established with CRC on.
Expected Behaviour	Check that: On receiving data with incorrect CRC, the IUT silently discards the PDU.
Test strategy	
Notes	

5.2.9.5   ARQ (ARQ)

5.2.9.5.1   Setup (SET)

TP ID	TP/BS/MAC/ARQ/SET/BV-H000
IEEE 802.16 Reference	clause 11.13.18.1
PICS item	
Initial Condition	IUT is operational.
Expected Behaviour	Check that: On receiving 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 and does not implement ARQ for the service flow.
Test strategy	
Notes	

TP ID	TP/BS/MAC/ARQ/SET/BV-H001
IEEE 802.16 Reference	clause 11.13.18.1
PICS item	
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.
Expected Behaviour	Check that: On receiving a DSA-RSP with the ARQ Enable TLV set to ARQ Not Accepted (0), the IUT accepts the DSA transaction and does not implement ARQ for the service flow.
Test strategy	
Notes	Require a means to force the IUT to transmit a DSA-REQ with the ARQ Enable TLV set to ARQ Requested (1) to establish a service flow.

TP ID	TP/BS/MAC/ARQ/SET/BV-H100
IEEE 802.16 Reference	clause 11.13.18.2
PICS item	
Initial Condition	IUT is operational. The IUT transmits a DSA-REQ with an ARQ_WINDOW_SIZE parameter.
Expected Behaviour	Check that: On receiving a DSA-RSP with an ARQ_WINDOW_SIZE parameter smaller than that in its previously sent DSA-REQ, the IUT implements the smaller value as the ARQ_WINDOW_SIZE.
Test strategy	
Notes	

TP ID	TP/BS/MAC/ARQ/SET/BV-H101
IEEE 802.16 Reference	clause 11.13.18.2
PICS item	
Initial Condition	IUT is operational. The IUT transmits a DSA-REQ with an ARQ_WINDOW_SIZE parameter.
Expected Behaviour	Check that: On receiving a DSA-RSP with an ARQ_WINDOW_SIZE parameter larger than that in its previously sent DSA-REQ, the IUT implements the smaller value as the ARQ_WINDOW_SIZE.
Test strategy	
Notes	

TP ID	TP/BS/MAC/ARQ/SET/BV-H102
IEEE 802.16 Reference	clause 11.13.18.3
PICS item	
Initial Condition	IUT is operational.
Expected Behaviour	Check that: On receiving a DSA-REQ with appropriate ARQ_RETRY_TIMEOUT parameters, the IUT sends a DSA-RSP with its appropriate ARQ_RETRY_TIMEOUT parameters and, when the transaction is successful, implements ARQ_RETRY_TIMEOUT as the sum of the parameters TRANSMITTER_DELAY and RECEIVER_DELAY.
Test strategy	
Notes	

TP ID	TP/BS/MAC/ARQ/SET/BV-H103
IEEE 802.16 Reference	clause 11.13.18.4
PICS item	
Initial Condition	IUT is operational.
Expected Behaviour	Check that: On receiving a DSA-REQ with the ARQ_BLOCK_LIFETIME parameter set to 0 and when the transaction is successful, the IUT handles ARQ_BLOCK_LIFETIME as infinite.
Test strategy	
Notes	

TP ID	TP/BS/MAC/ARQ/SET/BV-H104
IEEE 802.16 Reference	clause 11.13.18.7
PICS item	
Initial Condition	IUT is operational.
Expected Behaviour	Check that: On receiving a DSA-REQ with the ARQ_RX_PURGE_TIMEOUT parameter set to 0 and when the transaction is successful, the IUT handles ARQ_RX_PURGE_TIMEOUT as infinite.
Test strategy	
Notes	

TP ID	TP/BS/MAC/ARQ/SET/BV-H105
IEEE 802.16 Reference	clause 11.13.18.8
PICS item	
Initial Condition	IUT is operational.
Expected Behaviour	Check that: On receiving a DSA-REQ message with an ARQ_BLOCK_SIZE value, 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.
Test strategy	
Notes	

TP ID	TP/BS/MAC/ARQ/SET/BV-H106
IEEE 802.16 Reference	clause 11.13.18.8
PICS item	
Initial Condition	IUT is operational.
Expected Behaviour	Check that: On receiving a DSA-REQ message without an ARQ_BLOCK_SIZE parameter, 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.
Test strategy	
Notes	

TP ID	TP/BS/MAC/ARQ/SET/BV-H107
RIEEE 802.16 Reference	clause 6.3.4.1
PICS item	
Initial Condition	An ARQ connection is established and the IUT is the receiver on this connection. Fragmentation is not enabled.
Expected Behaviour	Check that: In the DSA-RSP message, the IUT sets the ARQ block size to match the fixed SDU size connection setting.
Test strategy	
Notes	

5.2.9.5.2   Reset (RE)

TP ID	TP/BS/MAC/ARQ/RE/BV-H000
IEEE 802.16 Reference	clause 6.3.4.6.2 Figure "ARQ Reset message dialog-receiver initiated"
PICS item	
Initial Condition	An ARQ connection is established and the IUT is the receiver on this connection. The IUT starts ARQ_SYNC_LOSS_TIMEOUT at block BSN_{n+1} reception and never received additional blocks. The IUT then transmitted an ARQ Reset message Type 0x0 (Request) after expiration of ARQ_SYNC_LOSS_TIMEOUT.
Expected Behaviour	Check that: On receiving an ARQ Reset message Type 0x1(Responder Ack), the IUT transmits an ARQ Reset message Type 0x2 (Confirmation).
Test strategy	
Notes	

TP ID	TP/BS/MAC/ARQ/RE/BV-H001
IEEE 802.16 Reference	clause 6.3.4.6.2 Figure "ARQ Reset message dialog-transmitter initiated"
PICS item	
Initial Condition	An ARQ connection is established and the IUT is the transmitter on this connection. The IUT transmits ARQ blocks and has started ARQ_SYNC_LOSS_TIMEOUT. On not receiving an ACK for block BSN_{n+1} despite its 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.
Expected Behaviour	Check that: On receiving an ARQ Reset message Type 0x1 (Responder Ack), the IUT resumes transmitting ARQ blocks with the first BSN = 0.
Test strategy	
Notes	ARQ_WINDOW_START=0 implies that BSN = 0.

TP ID	TP/BS/MAC/ARQ/RE/BV-H002
IEEE 802.16 Reference	clause 6.3.4.6.2 Figure "ARQ Reset message dialog-receiver initiated"
PICS item	
Initial Condition	An ARQ connection is established and the IUT is the receiver on this connection. The IUT starts ARQ_SYNC_LOSS_TIMEOUT at block BSN_{n+1} reception and has never received additional blocks. The IUT then transmitted an ARQ Reset message Type 0x0 (Request) after expiration of ARQ_SYNC_LOSS_TIMEOUT. It then received an ARQ Reset message Type 0x1(Responder Ack). The IUT then transmitted an ARQ Reset message Type 0x2 (Confirmation).
Expected Behaviour	Check that: On receiving ARQ blocks beginning with BSN=0, the IUT acknowledges the received ARQ blocks starting with a BSN=0.
Test strategy	
Notes	

TP ID	TP/BS/MAC/ARQ/RE/BV-H100
IEEE 802.16 Reference	clause 6.3.4.6.2 Figure "ARQ Reset message dialog-transmitter initiated"
PICS item	
Initial Condition	An ARQ connection is established and the IUT is the receiver on this connection.
Expected Behaviour	Check that: On receiving an ARQ Reset message Type 0x0, the IUT transmits an ARQ Reset message Type 0x1 (Responder Ack).
Test strategy	
Notes	

TP ID	TP/BS/MAC/ARQ/RE/BV-H101
IEEE 802.16 Reference	clause 6.3.4.6.2 Figure "ARQ Reset message dialog-receiver initiated"
PICS item	
Initial Condition	An ARQ connection is established and the IUT is the transmitter on this connection.
Expected Behaviour	Check that: On receiving an ARQ Reset message Type 0x0 (Initiator), the IUT stops transmitting ARQ blocks and transmits an ARQ Reset message Type 0x1 (Responder Ack).
Test strategy	
Notes	

TP ID	TP/BS/MAC/ARQ/RE/BV-H102
IEEE 802.16 Reference	clause 6.3.4.6.2 Figure "ARQ Reset message dialog-transmitter initiated"
PICS item	
Initial Condition	An ARQ connection is established and the IUT is the receiver on this connection. The IUT has received an ARQ Reset message Type 0x0 and stopped transmitting ARQ blocks on the connection. The IUT then transmitted an ARQ Reset message Type 0x (Responder Ack).
Expected Behaviour	Check that: On receiving ARQ blocks starting with a BSN=0, the IUT acknowledges the ARQ blocks received starting with BSN=0.
Test strategy	
Notes	

TP ID	TP/BS/MAC/ARQ/RE/BV-H103
IEEE 802.16 Reference	clause 6.3.4.6.2 Figure "ARQ Reset message dialog-receiver initiated"
PICS item	
Initial Condition	An ARQ connection is established and the IUT is the transmitter on this connection. The IUT then received an ARQ Reset message Type 0x0 (Initiator). The IUT stopped transmitting ARQ blocks and then transmitted an ARQ Reset message Type 0x1 (Responder Ack).
Expected Behaviour	Check that: On receiving an ARQ Reset message Type 0x2 (Confirmation), the IUT begins transmitting ARQ blocks with the first block's BSN=0.
Test strategy	
Notes	

TP ID	TP/BS/MAC/ARQ/RE/TI-H000
IEEE 802.16 Reference	clause 6.3.4.6.2 Figure "ARQ Reset message dialog-transmitter initiated"
PICS item	
Initial Condition	An ARQ connection is established and the IUT is the transmitter on this connection. The IUT has started ARQ_SYNC_LOSS_TIMEOUT.
Expected Behaviour	Check that: On not receiving an ACK for block BSN_{n+1} despite the IUT's repeated retransmissions and after ARQ_SYNC_LOSS_TIMEOUT expiry, the IUT transmits an ARQ Reset message Type 0x0 (Request) and stops transmitting on the connection.
Test strategy	
Notes	

TP ID	TP/BS/MAC/ARQ/RE/TI-H001
IEEE 802.16 Reference	clause 6.3.4.6.2 Figure "ARQ Reset message dialog-transmitter initiated"
PICS item	
Initial Condition	An ARQ connection is established and the IUT is the transmitter on this connection. The IUT has transmitted an ARQ Reset message Type 0x0 (Request) after expiration of ARQ_SYNC_LOSS_TIMEOUT, stopped transmitting on the connection, and started T22.
Expected Behaviour	Check that: On expiry of T22 without a response to the ARQ Reset, the IUT retransmits the ARQ Reset message Type 0x0.
Test strategy	
Notes	T22_retries is a vendor specific value.

TP ID	TP/BS/MAC/ARQ/RE/TI-H002
IEEE 802.16 Reference	clause 6.3.4.6.2 Figure "ARQ Reset message dialog-transmitter initiated"
PICS item	
Initial Condition	An ARQ connection is established and the IUT is the transmitter on this connection. The IUT has transmitted an ARQ Reset message Type 0x0 (Request) after expiration of ARQ_SYNC_LOSS_TIMEOUT, stopped transmitting on the connection, and started T22.
Expected Behaviour	Check that: After T22_retries of sending the ARQ Reset without receiving a response each time T22 expires and restarting it, the IUT re-initializes the DLC MAC layer.
Test strategy	
Notes	T22_retries is a vendor specific value.

TP ID	TP/BS/MAC/ARQ/RE/TI-H100
IEEE 802.16 Reference	clause 6.3.4.6.2 Figure "ARQ Reset message dialog-receiver initiated"
PICS item	
Initial Condition	An ARQ connection is established and the IUT is the receiver on this connection. The IUT starts ARQ_SYNC_LOSS_TIMEOUT at block BSN_{n+1} reception.
Expected Behaviour	Check that: On not receiving additional blocks, the IUT transmits an ARQ Reset message Type 0x0 (Request) after expiration of ARQ_SYNC_LOSS_TIMEOUT.
Test strategy	
Notes	

TP ID	TP/BS/MAC/ARQ/RE/TI-H101
IEEE 802.16 Reference	clause 6.3.4.6.2 Figure "ARQ Reset message dialog-receiver initiated"
PICS item	
Initial Condition	An ARQ connection is established and the IUT is the transmitter on this connection. The IUT has received an ARQ Reset message Type 0x0 (Initiator). The IUT stopped transmitting ARQ blocks, transmitted an ARQ Reset message Type 0x1 (Responder Ack), and started T22.
Expected Behaviour	Check that: On T22 expiry without receiving an ARQ Reset message Type 0x2 (Confirmation), the IUT retransmits the ARQ Reset message Type 0x1 (Responder Ack).
Test strategy	
Notes	T22_retries is a vendor specific value.

TP ID	TP/BS/MAC/ARQ/RE/TI-H102
IEEE 802.16 Reference	clause 6.3.4.6.2 Figure "ARQ Reset message dialog-receiver initiated"
PICS item	
Initial Condition	An ARQ connection is established and the IUT is the transmitter on this connection. The IUT has received an ARQ Reset message Type 0x0 (Initiator). The IUT stopped transmitting ARQ blocks, transmitted an ARQ Reset message Type 0x1 (Responder Ack), and started T22.
Expected Behaviour	Check that: After T22_retries of sending the ARQ Reset Type 0x1 without receiving a response each time T22 expires and restarting it, the IUT re-initializes the DLC MAC layer.
Test strategy	
Notes	T22_retries is a vendor specific value.

5.2.9.5.3 Receive Data (RXD)

TP ID	TP/BS/MAC/ARQ/RXD/BV-H000
IEEE 802.16 Reference	clauses 6.3.4 and 6.3.3.4
PICS item	
Initial Condition	An ARQ connection is established and the IUT is the receiver on this connection.
Expected Behaviour	Check that: On receiving ARQ blocks, the IUT transmits ARQ feedback information: - either in an ARQ Feedback standalone message; - or in the first piggy-backed packed PDU sub header where bit #4 in the Type encodings of the generic MAC header is set to 1.
Test strategy	
Notes	

TP ID	TP/BS/MAC/ARQ/RXD/BV-H001
IEEE 802.16 Reference	clause 6.3.3.4.3
PICS item	
Initial Condition	IUT is operating.
Expected Behaviour	Check that: When transmitting the ARQ Feedback Payload, the IUT 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.
Test strategy	
Notes	

TP ID	TP/BS/MAC/ARQ/RXD/BV-H002
IEEE 802.16 Reference	clause 6.3.4
PICS item	
Initial Condition	An ARQ connection is established and the IUT is the receiver on this connection.
Expected Behaviour	Check that: On receiving ARQ blocks, the IUT does not fragment ARQ feedback messages.
Test strategy	
Notes	

TP ID	TP/BS/MAC/ARQ/RXD/BV-H003
IEEE 802.16 Reference	clause 6.3.4.5
PICS item	
Initial Condition	ARQ is enabled for the connection.
Expected Behaviour	Check that: The IUT uses CRC-32 for error detection in MAC PDUs on the connection.
Test strategy	
Notes	

TP ID	TP/BS/MAC/ARQ/RXD/BV-H100
IEEE 802.16 Reference	clause 6.3.4.6.3 Figure "ARQ block reception"
PICS item	
Initial Condition	An ARQ connection is established and the IUT is the receiver on this connection.
Expected Behaviour	Check that: On receiving an ARQ block that is in the IUT's window that has not been acknowledged, the IUT acknowledges the ARQ block.
Test strategy	
Notes	

TP ID	TP/BS/MAC/ARQ/RXD/BV-H101
IEEE 802.16 Reference	clause 6.3.4.6.3 Figure "ARQ block reception"
PICS item	
Initial Condition	An ARQ connection is established and the IUT is the receiver on this connection.
Expected Behaviour	Check that: On receiving an ARQ block that is in the IUT's window that has already been acknowledged, the IUT again acknowledges the ARQ block.
Test strategy	
Notes	

TP ID	TP/BS/MAC/ARQ/RXD/BV-H102
IEEE 802.16 Reference	clause 6.3.4.6.2
PICS item	
Initial Condition	An ARQ connection is established and the IUT is the receiver on this connection.
Expected Behaviour	Check that: On receiving ARQ blocks packed in a PDU with a break in the contiguous BSN sequence numbers: …, BSN_n, BSN_{n+2}, the IUT transmits a NACK for block BSN_{n+1}.
Test strategy	
Notes	

TP ID	TP/BS/MAC/ARQ/RXD/BV-H103
IEEE 802.16 Reference	clause 6.3.4.6.3
PICS item	
Initial Condition	An ARQ connection is established and the IUT is the receiver on this connection. The IUT receives an ARQ block with a CRC-32 error.
Expected Behaviour	Check that: The IUT transmits a NACK for the ARQ block.
Test strategy	
Notes	

TP ID	TP/BS/MAC/ARQ/RXD/BV-H104
IEEE 802.16 Reference	clause 6.3.4.6.3 Figure "ARQ block reception"
PICS item	
Initial Condition	An ARQ connection is established and the IUT is the receiver on this connection.
Expected Behaviour	Check that: On receiving an ARQ block that is not in the IUT's window, the IUT discards the block and does not acknowledge its reception.
Test strategy	
Notes	

TP ID	TP/BS/MAC/ARQ/RXD/BV-H105
IEEE 802.16 Reference	clause 6.3.4.6.3
PICS item	
Initial Condition	An ARQ connection is established and the IUT is the receiver on this connection.
Expected Behaviour	Check that: On receiving a set of ARQ blocks with no errors, a block with a CRC error, and another set without errors in that order, 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.
Test strategy	
Notes	

TP ID	TP/BS/MAC/ARQ/RXD/BV-H110
IEEE 802.16 Reference	clause 6.3.4.6.3
PICS item	
Initial Condition	An ARQ connection is established and the IUT is the receiver on this connection. The IUT received ARQ blocks with some containing CRC errors. The IUT acknowledged the correct blocks and NACKed the blocks containing the CRC errors.
Expected Behaviour	Check that: On receiving an ARQ Discard message containing the BSNs of the blocks with the errors, 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.
Test strategy	
Notes	

TP ID	TP/BS/MAC/ARQ/RXD/BV-H111
IEEE 802.16 Reference	clause 6.3.4.6.2
PICS item	
Initial Condition	An ARQ connection is established and the IUT is the receiver on this connection.
Expected Behaviour	Check that: On receiving an ARQ Discard message in order to skip ARQ blocks up to the BSN value in the message, the IUT acknowledges skipping of all the blocks up to the BSN value in an ARQ Feedback IE.
Test strategy	
Notes	

TP ID	TP/BS/MAC/ARQ/RXD/BV-H112
IEEE 802.16 Reference	clause 6.3.4.6.2
PICS item	
Initial Condition	An ARQ connection is established and the IUT is the receiver on this connection. The IUT then received an ARQ Discard message in order to skip ARQ blocks up to the BSN value in the message. The IUT acknowledged the skipping of all the blocks up to the BSN value in an ARQ Feedback IE.
Expected Behaviour	Check that: On receiving ARQ blocks beginning with a BSN = BSN_n + 2, the IUT acknowledges the blocks starting with BSN_n + 2 and NACKS the block with BSN_n + 1.
Test strategy	
Notes	

TP ID	TP/BS/MAC/ARQ/RXD/BV-H113
IEEE 802.16 Reference	clause 6.3.4.6.2
PICS item	
Initial Condition	An ARQ connection is established and the IUT is the receiver on this connection. Block BSN_n does not arrive. The IUT NACKs the block and starts ARQ_BLOCK_LIFETIME. Block BSN_n never arrives. The IUT responds appropriately with NACKs.
Expected Behaviour	Check that: On receiving an ARQ DISCARD message for block BSN_n after ARQ_BLOCK_LIFETIME expiry, the IUT transmits an ACK for block BSN_n.
Test strategy	
Notes	

TP ID	TP/BS/MAC/ARQ/RXD/BV-H114
IEEE 802.16 Reference	clause 6.3.4.6.2
PICS item	
Initial Condition	An ARQ connection is established and the IUT is the receiver on this connection. Block BSN_n does not arrive. The IUT NACKs the block and starts ARQ_BLOCK_LIFETIME. Block BSN_n never arrives. The IUT responded appropriately with NACKs. On receiving an ARQ DISCARD message for block BSN_n after ARQ_BLOCK_LIFETIME expiry, the IUT transmitted an ACK for block BSN_n.
Expected Behaviour	Check that: The IUT transmits an ACK for block BSN_n each time it receives an ARQ DISCARD message for block BSN_n.
Test strategy	
Notes	

TP ID	TP/BS/MAC/ARQ/RXD/BV-H200
IEEE 802.16 Reference	clause 6.3.4.6.3
PICS item	
Initial Condition	An ARQ connection is established and the IUT is the receiver on this connection. ARQ_DELIVER_IN_ORDER is not enabled.
Expected Behaviour	Check that: On receiving an incomplete set for a MAC SDU and then a complete set of blocks for another MAC SDU, the IUT provides the convergence layer with the complete SDU immediately after reception of its last block.
Test strategy	
Notes	Requires an Upper Tester.

TP ID	TP/BS/MAC/ARQ/RXD/BV-H201
IEEE 802.16 Reference	clause 6.3.4.6.3
PICS item	
Initial Condition	An ARQ connection is established and the IUT is the receiver on this connection. ARQ_DELIVER_IN_ORDER is enabled.
Expected Behaviour	Check that: On receiving an incomplete set for a MAC SDU and then a complete set of blocks for another MAC SDU, 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.
Test strategy	
Notes	Requires an Upper Tester.

TP ID	TP/BS/MAC/ARQ/RXD/TI-H000
IEEE 802.16 Reference	clause 6.3.4.6.3
PICS item	
Initial Condition	An ARQ connection is established and the IUT is the receiver on this connection. The IUT received an ARQ block for BSN=m and ARQ block with BSN=n that contains a CRC error. The IUT ACKed block m and NACKed block n and started ARQ_RX_PURGE_TIMEOUT for block m. The IUT continues receiving ARQ blocks with block n always containing a CRC error (the block is always marked as not received by the IUT).
Expected Behaviour	Check that: At ARQ_RX_PURGE_TIMEOUT expiry, the IUT transmits the next ARQ feedback IE containing block n's BSN in the BSN field.
Test strategy	
Notes	

5.2.9.5.4   Transmit Data (TXD)

TP ID	TP/BS/MAC/ARQ/TXD/BV-H000
IEEE 802.16 Reference	clause 6.3.4.1
PICS item	
Initial Condition	An ARQ connection is established and the IUT is the transmitter on this connection.
Expected Behaviour	Check that: When the PDU is not packed, the IUT transmits the blocks with contiguous BSNs.
Test strategy	
Notes	

TP ID	TP/BS/MAC/ARQ/TXD/BV-H001
IEEE 802.16 Reference	clause 6.3.4.1
PICS item	
Initial Condition	An ARQ connection is established and the IUT is the transmitter on this connection.
Expected Behaviour	Check that: When fragmentation occurs on the connection, the IUT fragments the SDU only on ARQ block boundaries.
Test strategy	
Notes	

TP ID	TP/BS/MAC/ARQ/TXD/BV-H002
IEEE 802.16 Reference	clause 6.3.4.1
PICS item	
Initial Condition	An ARQ connection is established and the IUT is the transmitter on this connection.
Expected Behaviour	Check that: When the PDU is packed, the IUT transmits the sequence of blocks immediately between the MAC sub headers with contiguous sequence numbers and the sequence of blocks after the last packing sub header with contiguous sequence numbers.
Test strategy	
Notes	

TP ID	TP/BS/MAC/ARQ/TXD/BV-H003
IEEE 802.16 Reference	clause 6.3.4.1
PICS item	
Initial Condition	An ARQ connection is established and the IUT is the transmitter on this connection.
Expected Behaviour	Check that: When the PDU contains packing or fragmentation sub headers, the IUT places into the sub header's BSN field the sequence number of the first ARQ block in the sequence of blocks following the sub header.
Test strategy	
Notes	

TP-ID	TP/BS/MAC/ARQ/TXD/BV-H004
IEEE 802.16 Reference	clause 6.3.3.4.2
PICS Item	
Initial Condition	IUT is operational. An ARQ Enabled service flow is in active state and packing is also supported.
Expected Behaviour	Check that: To transmit data whose size exceeds ARQ_BLOCK_SIZE × 2 048, the IUT sends the data in different blocks each of ARQ_BLOCK_SIZE (last block can be less than ARQ_BLOCK_SIZE) and the assigned BSN in the packing sub header to the blocks wraps around after reaching value 2 048.
Test strategy	
Notes	ARQ_BLOCK_SIZE value is set during service addition.

TP-ID	TP/BS/MAC/ARQ/TXD/BV-H005
IEEE 802.16 Reference	clause 6.3.3.3
PICS Item	
Initial Condition	IUT is operational. An ARQ Enabled service flow is in the active state. Packing is off.
Expected Behaviour	Check that: When transmitting data whose size exceeds ARQ_BLOCK_SIZE × 2 048, the IUT sends the data in different blocks each of ARQ_BLOCK_SIZE (last block can be less than ARQ_BLOCK_SIZE) and the assigned BSN in the Fragmentation sub-header to the blocks wraps around after reaching value 2 048.
Test strategy	
Notes	ARQ_BLOCK_SIZE value is set during service addition.

TP ID	TP/BS/MAC/ARQ/TXD/BV-H006
IEEE 802.16 Reference	clause 6.3.3.4.3
PICS item	
Initial Condition	ARQ enabled on the connection.
Expected Behaviour	Check that: On receiving a fragmented and packed ARQ Feedback Payload, the IUT ignores the FSN/BSN and processes the ARQ Feedback Payload.
Test strategy	
Notes	

TP-ID	TP/BS/MAC/ARQ/TXD/BV-H007
IEEE 802.16 Reference	clause 6.3.4
PICS Item	
Initial Condition	An ARQ connection is established and the IUT is the transmitter on this connection. The IUT transmits ARQ blocks.
Expected Behaviour	Check that: On receiving an ARQ feedback message, the IUT transmits the subsequent blocks.
Test strategy	
Notes	

TP ID	TP/BS/MAC/ARQ/TXD/BV-H008
IEEE 802.16 Reference	clause 6.3.3.4.2
PICS item	
Initial Condition	ARQ and packing enabled on the connection.
Expected Behaviour	Check that: On receiving Packing sub headers in a MAC PDU and when the BSN in the packing sub header indicates that fragments are missing, the IUT uses the BSN to identify and transmit lost fragments.
Test strategy	
Notes	

TP ID	TP/BS/MAC/ARQ/TXD/BV-H009
IEEE 802.16 Reference	clause 6.3.4 Table "Type encodings"
PICS item	
Initial Condition	An ARQ connection is established and the IUT is the transmitter on this connection. The IUT transmitted ARQ blocks after which it received ARQ feedback information in an ARQ Feedback standalone message. The IUT then transmitted 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 sub header of the PDU.
Expected Behaviour	Check that: The IUT correctly processes the ARQ feedback information in both the ARQ Feedback standalone message and in the piggy-backed packed PDU sub header.
Test strategy	
Notes	

TP ID	TP/BS/MAC/ARQ/TXD/BV-H100
IEEE 802.16 Reference	clause 6.3.4.6.2
PICS item	
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 have been acknowledged except one.
Expected Behaviour	Check that: On receiving a NACK concerning this block using a selective ACK map. (This block is now in the "Waiting" state), the IUT retransmits the NACK block followed by other blocks not yet sent using the rules for fragmentation and packing.
Test strategy	
Notes	

TP ID	TP/BS/MAC/ARQ/TXD/BV-H101
IEEE 802.16 Reference	clause 6.3.4.6.2
PICS item	
Initial Condition	An ARQ connection is established and the IUT is the transmitter on this connection. The IUT has transmitted ARQ blocks.
Expected Behaviour	Check that: On receiving 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), 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.
Test strategy	
Notes	

TP ID	TP/BS/MAC/ARQ/TXD/BV-H102
IEEE 802.16 Reference	clause 6.3.4.6.2
PICS item	
Initial Condition	An ARQ connection is established and the IUT is the transmitter on this connection. The IUT has transmitted ARQ blocks.
Expected Behaviour	Check that: When not receiving either ACKs or NACKs for these blocks. (These blocks are now in the "Outstanding" state), the IUT does not retransmit these ARQ blocks.
Test strategy	
Notes	

TP ID	TP/BS/MAC/ARQ/TXD/BV-H103
IEEE 802.16 Reference	clause 6.3.4.6.2
PICS item	
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.
Expected Behaviour	Check that: On receiving a cumulative ACK for a subset of this set, the IUT does not retransmit any of the blocks in the cumulative ACK and retransmits the un-ACKed subset of the set.
Test strategy	
Notes	

TP ID	TP/BS/MAC/ARQ/TXD/BV-H104
IEEE 802.16 Reference	clause 6.3.4.6.2
PICS item	
Initial Condition	An ARQ connection is established and the IUT is the transmitter on this connection. The IUT has transmitted ARQ blocks.
Expected Behaviour	Check that: On receiving a selective ACK with gaps (indicating NACK for some of the transmitted blocks), the IUT does not retransmit any of the blocks in the selective ACK and retransmits the blocks not selectively ACKed.
Test strategy	
Notes	

TP ID	TP/BS/MAC/ARQ/TXD/BV-H105
IEEE 802.16 Reference	clause 6.3.4.6.2
PICS item	
Initial Condition	An ARQ connection is established and the IUT is the transmitter on this connection. The IUT has transmitted ARQ blocks and has received 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.
Expected Behaviour	Check that: After having received a selective ACK for BSN_k, the IUT then transmits more ARQ blocks including that for BSN_i.
Test strategy	
Notes	

TP ID	TP/BS/MAC/ARQ/TXD/BV-H106
IEEE 802.16 Reference	clause 6.3.4.6.2
PICS item	
Initial Condition	An ARQ connection is established and the IUT is the transmitter on this connection. The IUT has transmitted ARQ blocks and has received 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).
Expected Behaviour	Check that: On receiving a NACK for block BSN_i, the IUT transmits more ARQ blocks including that for BSN_i.
Test strategy	
Notes	

TP ID	TP/BS/MAC/ARQ/TXD/BV-H107
IEEE 802.16 Reference	clause 6.3.4.6.2
PICS item	
Initial Condition	An ARQ connection is established and the IUT is the transmitter on this connection.
Expected Behaviour	Check that: On receiving a block ACK for an invalid BSN, the IUT ignores the block ACK.
Test strategy	
Notes	

TP ID	TP/BS/MAC/ARQ/TXD/BV-H200
IEEE 802.16 Reference	clause 6.3.4.6.2
PICS item	
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).
Expected Behaviour	Check that: On not receiving any ACKs or NACKs for any block from BSN_n and after no response 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.
Test strategy	
Notes	

TP ID	TP/BS/MAC/ARQ/TXD/TI-H000
IEEE 802.16 Reference	clause 6.3.4.6.2
PICS item	
Initial Condition	An ARQ connection is established and the IUT is the transmitter on this connection. The IUT transmits ARQ blocks.
Expected Behaviour	Check that: On not receiving an ACKs or NACKs for any block from BSN_n after ARQ_RETRY_TIMEOUT, the IUT retransmits block BSN_n after ARQ_RETRY_TIMEOUT time from the first sending of block BSN_n.
Test strategy	
Notes	

TP ID	TP/BS/MAC/ARQ/TXD/TI-H001
IEEE 802.16 Reference	clauses 6.3.4.3.4 and 6.3.4.6.2
PICS item	
Initial Condition	An ARQ connection is established and the IUT is the transmitter on this connection. The IUT transmits ARQ blocks and has not received any ACKs or NACKs for any block from BSN_n and on. The IUT then retransmitted block BSN_n after ARQ_RETRY_TIMEOUT time from the first sending of block BSN_n.
Expected Behaviour	Check that: On not receiving any ACKs or NACKs for any block from BSN_n and again on ARQ_RETRY_TIMEOUT, the IUT retransmits block BSN_n after ARQ_RETRY_TIMEOUT time from the last sending of block BSN_n.
Test strategy	
Notes	

TP ID	TP/BS/MAC/ARQ/TXD/TI-H100
IEEE 802.16 Reference	clause 6.3.4.6.2
PICS item	
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 IUT does not receive any ACKs or NACKs for any block from BSN_n to any of the repeated transmissions. The IUT then transmitted an ARQ DISCARD message between ARQ_BLOCK_LIFETIME expiry and ARQ_RX_PURGE_TIMEOUT + ARQ_RETRY_TIMEOUT expiry (ARQ_RETRY_TIMEOUT begins).
Expected Behaviour	Check that: After ARQ_RETRY_TIMEOUT expiry without receiving an ACK for the discarded BSN_n, the IUT retransmits the ARQ DISCARD message.
Test strategy	
Notes	

TP ID	TP/BS/MAC/ARQ/TXD/TI-H101
IEEE 802.16 Reference	clause 6.3.4.6.2
PICS item	
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 IUT does not receive any ACKs or NACKs for any block from BSN_n to any of the repeated transmissions. The IUT then transmitted an ARQ DISCARD message between ARQ_BLOCK_LIFETIME expiry and ARQ_RX_PURGE_TIMEOUT + ARQ_RETRY_TIMEOUT expiry (ARQ_RETRY_TIMEOUT begins). The IUT did not send an ACK for the discarded BSN_n.
Expected Behaviour	Check that: After ARQ_RETRY_TIMEOUT expiry, the IUT repeatedly retransmits the ARQ DISCARD message and restarts ARQ_RETRY_TIMEOUT until receiving an ACK for the discarded BSN_n.
Test strategy	
Notes	

5.2.10   Packet Convergence Sublayer (PCS)

5.2.10.1   Packet CS Usage (PCU)

TP-ID	TP/BS/PCS/PCU/BV-H000
IEEE 802.16 Reference	clause 5.2.3
PICS Item	
Initial Condition	IUT is initialized and a service flow is established with IPv4 data flow.
Expected Behaviour	Check that: To transmit IPv4 packets, the IUT sends MAC PDUs containing the PHSI field (=0) followed by the IPv4 packet on the corresponding CID.
Test strategy	
Notes	

TP-ID	TP/BS/PCS/PCU/BV-H001
IEEE 802.16 Reference	clause 5.2.3
PICS Item	
Initial Condition	IUT is initialized and a service flow is established with IPv6 data flow.
Expected Behaviour	Check that: To transmit IPv6 packets, the IUT sends MAC PDUs containing the PHSI field (=0) followed by the IPv6 packet on the corresponding CID.
Test strategy	
Notes	

TP-ID	TP/BS/PCS/PCU/BV-H002
IEEE 802.16 Reference	clause 5.2.3
PICS Item	
Initial Condition	IUT is initialized and a service flow is established with Ethernet data flow.
Expected Behaviour	Check that: To transmit Ethernet packets, the IUT sends MAC PDUs containing the PHSI field (=0) followed by the Ethernet packet on the corresponding CID.
Test strategy	
Notes	

TP-ID	TP/BS/PCS/PCU/BV-H003
IEEE 802.16 Reference	clause 5.2.3
PICS Item	
Initial Condition	IUT is initialized and a service flow is established with Ethernet with VLAN tagging data flow.
Expected Behaviour	Check that: To transmit Ethernet with VLAN tagging packets, the IUT sends MAC PDUs containing the PHSI field (=0) followed by the Ethernet with VLAN tagging packet on the corresponding CID.
Test strategy	
Notes	

TP-ID	TP/BS/PCS/PCU/BV-H004
IEEE 802.16 Reference	clause 5.2.3
PICS Item	
Initial Condition	IUT is initialized and a service flow is established with IPv4 over Ethernet data flow.
Expected Behaviour	Check that: To transmit IPv4 over Ethernet packets, the IUT sends MAC PDUs containing the PHSI field (=0) followed by the IPv4 over Ethernet packet on the corresponding CID.
Test strategy	
Notes	

TP-ID	TP/BS/PCS/PCU/BV-H005
IEEE 802.16 Reference	clause 5.2.3
PICS Item	
Initial Condition	IUT is initialized and a service flow is established with IPv6 over Ethernet data flow.
Expected Behaviour	Check that: To transmit IPv6 over Ethernet packets, the IUT sends MAC PDUs containing the PHSI field (=0) followed by the IPv6 over Ethernet packet on the corresponding CID.
Test strategy	
Notes	

5.2.10.2   Classifier DSx Signaling (CDS)

TP-ID	TP/BS/PCS/CDS/BV-H000
IEEE 802.16 Reference	clause 11.13.19.3.2
PICS Item	
Initial Condition	IUT is operating and a service flow is established.
Expected Behaviour	Check that: To add a classifier for the connection, the IUT sends a DSC-REQ with Classifier Add.
Test strategy	
Notes	

TP-ID	TP/BS/PCS/CDS/BV-H001
IEEE 802.16 Reference	clause 11.13.19.3.2
PICS Item	
Initial Condition	IUT is operating and a service flow is established.
Expected Behaviour	Check that: To delete a classifier for the connection, the IUT sends a DSC-REQ with Classifier Delete.
Test strategy	
Notes	

TP-ID	TP/BS/PCS/CDS/BV-H002
IEEE 802.16 Reference	clause 11.13.19.3.2
PICS Item	
Initial Condition	IUT is operating and a service flow is established.
Expected Behaviour	Check that: To change the properties of a classifier for the connection, the IUT sends a DSC-REQ with Classifier Replace.
Test strategy	
Notes	

TP ID	TP/BS/PCS/CDS/BV-H003
P502.16 Reference	clause 11.13.19.3.3
PICS item	
Initial Condition	IUT is operating and a service flow is established with data flow.
Expected Behaviour	Check that: On receiving a DSC-REQ with an invalid Change Action for the classifier, the IUT transmits a DSC-RSP with a Classifier error parameter set indicating an invalid Change Action.
Test strategy	
Notes	

TP ID	TP/BS/PCS/CDS/BV-H004
IEEE 802.16 Reference	clause 11.13.19.3.3
PICS item	
Initial Condition	IUT is operating and a service flow is established with data flow.
Expected Behaviour	Check that: On receiving a DSC-REQ with an invalid IP Protocol value for the classifier, the IUT transmits a DSC-RSP with a Classifier error parameter set indicating an invalid IP Protocol value.
Test strategy	
Notes	

5.2.10.3   Classification (CLS)

TP ID	TP/BS/PCS/CLS/BV-H000
IEEE 802.16 Reference	clause 5.2.2
PICS item	
Initial Condition	IUT is operating and a service flow is established with data flow.
Expected Behaviour	Check that: On receiving connection data, the IUT provides the upper layer PDU via the CS SAP corresponding to the classifier associated with the CID.
Test strategy	
Notes	Requires an UT over the CS.

TP ID	TP/BS/PCS/CLS/BV-H001
IEEE 802.16 Reference	clause 5.2.2
PICS item	
Initial Condition	IUT is operating and a service flow is established with data flow.
Expected Behaviour	Check that: On receiving connection data that has a classifier in which all parameters match one of the existing classifiers, the IUT delivers the PDU to the corresponding connection (CID).
Test strategy	
Notes	Requires an UT over the CS.

TP ID	TP/BS/PCS/CLS/BV-H002
IEEE 802.16 Reference	clause 5.2.2
PICS item	
Initial Condition	The IUT has several connections each of which has an identical classifier assigned to them except for the classifier priority field.
Expected Behaviour	Check that: On receiving connection data using the classifier, the IUT transmits the PDU on the MAC CID having the highest priority.
Test strategy	
Notes	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 has then received 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	TP/BS/PCS/CLS/BV-H003
IEEE 802.16 Reference	clause 5.2.2
PICS item	
Initial Condition	The IUT has several connections each of which has identical classifier assigned to them except for the classifier priority field.
Expected Behaviour	Check that: On receiving connection data using the highest priority for the classifier and the service flow for that MAC CID is deleted, the IUT transmits the data on the MAC CID having the next highest priority for the same classifier.
Test strategy	
Notes	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	TP/BS/PCS/CLS/BV-H004
IEEE 802.16 Reference	clause 11.13.19.3.2
PICS item	
Initial Condition	IUT is operating and a service flow is established with data flow. The IUT is receiving data PDUs for a CS SAP that does not match any classifier. The IUT is discarding the data.
Expected Behaviour	Check that: After a classifier matching the data received on the connection has been added by use of a DSC transaction, the IUT transmits the data on the MAC CID corresponding to the added classifier.
Test strategy	
Notes	

TP ID	TP/BS/PCS/CLS/BV-H005
IEEE 802.16 Reference	clause 11.13.19.3.2
PICS item	
Initial Condition	IUT is operating. The IUT is transmitting data on two MAC CIDs. The classifiers associated with each CID are not identical and have different priorities.
Expected Behaviour	Check that: After having replaced a classifier with another identical to the other classifier but having a lower priority, the IUT transmits the data that was on the two MAC CIDs on the MAC CID with the classifier having the highest priority.
Test strategy	
Notes	

TP ID	TP/BS/PCS/CLS/BV-H100
IEEE 802.16 Reference	clause 5.2.2
PICS item	
Initial Condition	IUT is operating and a service flow is established with data flow.
Expected Behaviour	Check that: On receiving connection data that does not have a classifier in which all parameters match one of the existing classifiers, the IUT discards the packet.
Test strategy	
Notes	Requires an UT over the CS. The action is vendor-specific.

TP ID	TP/BS/PCS/CLS/BV-H101
IEEE 802.16 Reference	clause 11.13.19.3.2
PICS item	
Initial Condition	IUT is operating. The IUT is transmitting data on a MAC CID corresponding to the classifier established during connection setup.
Expected Behaviour	Check that: After the classifier is deleted and when there is no longer any classifier that matches the data being transmitted, the IUT discards the data.
Test strategy	
Notes	

5.2.10.3.1   IPv4 and IPv6 (IP)

TP ID	TP/BS/PCS/CLS/IP/BV-H000
IEEE 802.16 Reference	clause 5.2.2, paragraph 3
PICS Item	
Initial Condition	IUT is operational and two DL IP CS service flows are established having different CIDs. Packet classifiers are defined for both connections.
Expected Behaviour	Check that: When the classifiers for the two connections do not overlap, the IUT transmits IP CS SDUs matching the classifier for the first connection on the first connection and transmits IP CS SDUs matching the classifier for the second connection on the second connection.
Test strategy	
Notes	IP service flows can either be IPv4 or IPv6.

TP ID	TP/BS/PCS/CLS/IP/BV-H001
IEEE 802.16 Reference	clause 5.2.2, paragraph 3 and clause 11.13.19.3.4.2
PICS Item	
Initial Condition	IUT is operational and two DL IP CS service flows are established having different CIDs. Packet classifiers are defined for both connections.
Expected Behaviour	Check that: When the classifiers for the two connections overlap on the IP Type of Service/DSCP, the IUT transmits CS SDUs matching the common IP Type of Service/DSCP on the connection having the higher classifier priority.
Test strategy	
Notes	IP service flows can either be IPv4 or IPv6.

TP ID	TP/BS/PCS/CLS/IP/BV-H002
IEEE 802.16 Reference	clause 5.2.2, paragraph 3 and clause 11.13.19.3.4.3
PICS Item	
Initial Condition	IUT is operational and two DL IP CS service flows are established having different CIDs. Packet classifiers are defined for both connections.
Expected Behaviour	Check that: When the classifiers for the two connections overlap on the IP Protocol, the IUT transmits CS SDUs matching the common IP Protocol on the connection having the higher classifier priority.
Test strategy	
Notes	IP service flows can either be IPv4 or IPv6.

TP ID	TP/BS/PCS/CLS/IP/BV-H003
IEEE 802.16 Reference	clause 5.2.2, paragraph 3 and clause 11.13.19.3.4.4
PICS Item	
Initial Condition	IUT is operational and two DL IP CS service flows are established having different CIDs. Packet classifiers are defined for both connections.
Expected Behaviour	Check that: When the classifiers for the two connections overlap on the IP Masked Source Address, the IUT transmits CS SDUs matching the common IP Masked Source Address on the connection having the higher classifier priority.
Test strategy	
Notes	IP service flows can either be IPv4 or IPv6.

TP ID	TP/BS/PCS/CLS/IP/BV-H004
IEEE 802.16 Reference	clause 5.2.2, paragraph 3 and clause 11.13.19.3.4.5
PICS Item	
Initial Condition	IUT is operational and two DL IP CS service flows are established having different CIDs. Packet classifiers are defined for both connections.
Expected Behaviour	Check that: When the classifiers for the two connections overlap on the IP Destination Address, the IUT transmits CS SDUs matching the common IP Destination Address on the connection having the higher classifier priority.
Test strategy	
Notes	IP service flows can either be IPv4 or IPv6.

TP ID	TP/BS/PCS/CLS/IP/BV-H005
IEEE 802.16 Reference	clause 5.2.2, paragraph 3 and clause 11.13.19.3.4.6
PICS Item	
Initial Condition	IUT is operational and two DL IP CS service flows are established having different CIDs. Packet classifiers are defined for both connections.
Expected Behaviour	Check that: When the classifiers for the two connections overlap on the IP Protocol Source Port, the IUT transmits CS SDUs matching the common IP Protocol Source Port on the connection having the higher classifier priority.
Test strategy	
Notes	IP service flows can either be IPv4 or IPv6.

TP ID	TP/BS/PCS/CLS/IP/BV-H006
IEEE 802.16 Reference	clause 5.2.2, paragraph 3 and clause 11.13.19.3.4.7
PICS Item	
Initial Condition	IUT is operational and two DL IP CS service flows are established having different CIDs. Packet classifiers are defined for both connections.
Expected Behaviour	Check that: When the classifiers for the two connections overlap on the IP Protocol Destination Port, the IUT transmits CS SDUs matching the common IP Protocol Destination Port on the connection having the higher classifier priority.
Test strategy	
Notes	IP service flows can either be IPv4 or IPv6.

TP ID	TP/BS/PCS/CLS/IP/BV-H007
IEEE 802.16 Reference	clause 5.2.2, paragraph 3 and clause 11.13.19.3.4.2-7
PICS Item	
Initial Condition	IUT is operational and two DL IP CS service flows are established having different CIDs. Packet classifiers are defined for both connections.
Expected Behaviour	Check that: When the classifiers for the two connections overlap on the: - IP Protocol Destination Port; - IP Type of Service/DSCP; - IP Protocol; - IP Masked Source Address; - IP Destination Address; - IP Protocol Source Port; and - IP Protocol Destination Port. the IUT transmits CS SDUs matching the common: - IP Protocol Destination Port; - IP Type of Service/DSCP; - IP Protocol; - IP Masked Source Address; - IP Destination Address; - IP Protocol Source Port; and - IP Protocol Destination Port on the connection having the higher classifier priority.
Test strategy	
Notes	IP service flows can either be IPv4 or IPv6.

5.2.10.3.2 Ethernet (ENET)

TP ID	TP/BS/PCS/CLS/ENET/BV-H000
IEEE 802.16 Reference	clause 5.2.2, paragraph 3
PICS Item	
Initial Condition	IUT is operational and two DL Ethernet CS service flows are established having different CIDs. Packet classifiers are defined for both connections.
Expected Behaviour	Check that: When the classifiers for the two connections do not overlap, the IUT transmits Ethernet CS SDUs matching the classifier for the first connection on the first connection and transmits Ethernet CS SDUs matching the classifier for the second connection on the second connection.
Test strategy	
Notes	

TP ID	TP/BS/PCS/CLS/ENET/BV-H001
IEEE 802.16 Reference	clause 5.2.2, paragraph 3 and clause 11.13.19.3.4.8
PICS Item	
Initial Condition	IUT is operational and two DL Ethernet CS service flows are established having different CIDs. Packet classifiers are defined for both connections.
Expected Behaviour	Check that: When the classifiers for the two connections overlap on the Ethernet MAC Destination Address, the IUT transmits CS SDUs matching the common Ethernet MAC Destination Address on the connection having the higher classifier priority.
Test strategy	
Notes	

TP ID	TP/BS/PCS/CLS/ENET/BV-H002
IEEE 802.16 Reference	clause 5.2.2, paragraph 3 and clause 11.13.19.3.4.9
PICS Item	
Initial Condition	IUT is operational and two DL Ethernet CS service flows are established having different CIDs. Packet classifiers are defined for both connections.
Expected Behaviour	Check that: When the classifiers for the two connections overlap on the Ethernet MAC Source Address, the IUT transmits CS SDUs matching the common Ethernet MAC Source Address on the connection having the higher classifier priority.
Test strategy	
Notes	

TP ID	TP/BS/PCS/CLS/ENET/BV-H003
IEEE 802.16 Reference	clause 5.2.2, paragraph 3 and clause 11.13.19.3.4.10
PICS Item	
Initial Condition	IUT is operational and two DL Ethernet CS service flows are established having different CIDs. Packet classifiers are defined for both connections.
Expected Behaviour	Check that: When the classifiers for the two connections overlap on the Ethertype SAP, the IUT transmits CS SDUs matching the common Ethertype SAP on the connection having the higher classifier priority.
Test strategy	
Notes	

TP ID	TP/BS/PCS/CLS/ENET/BV-H004
	Deleted

TP ID	TP/BS/PCS/CLS/ENET/BV-H005
IEEE 802.16 Reference	clause 5.2.2, paragraph 3 and clause 11.13.19.3.4.8-11
PICS Item	
Initial Condition	IUT is operational and two DL Ethernet CS service flows are established having different CIDs. Packet classifiers are defined for both connections.

Expected Behaviour	Check that: When the classifiers for the two connections overlap on the:
	   - Ethernet MAC Destination Address;
	   - Ethernet MAC Source Address; and
	   - Ethertype SAP
	the IUT transmits CS SDUs matching the common:
	   - Ethernet MAC Destination Address;
	   - Ethernet MAC Source Address; and
	   - Ethertype SAP
	on the connection having the higher classifier priority.

Test strategy	
Notes	

5.2.10.3.3   VLAN (VLAN)

TP ID	TP/BS/PCS/CLS/VLAN/BV-H000
IEEE 802.16 Reference	clause 5.2.2, paragraph 3
PICS Item	
Initial Condition	IUT is operational and two DL VLAN CS service flows are established having different CIDs. Packet classifiers are defined for both connections.
Expected Behaviour	Check that: When the classifiers for the two connections do not overlap, the IUT transmits VLAN CS SDUs matching the classifier for the first connection on the first connection and transmits VLAN CS SDUs matching the classifier for the second connection on the second connection.
Test strategy	
Notes	

TP ID	TP/BS/PCS/CLS/VLAN/BV-H001
IEEE 802.16 Reference	clause 5.2.2, paragraph 3 and clause 11.13.19.3.4.12
PICS Item	
Initial Condition	IUT is operational and two DL VLAN CS service flows are established having different CIDs. Packet classifiers are defined for both connections.
Expected Behaviour	Check that: When the classifiers for the two connections overlap on the VLAN ID, the IUT transmits CS SDUs matching the common VLAN ID on the connection having the higher classifier priority.
Test strategy	
Notes	

TP ID	TP/BS/PCS/CLS/VLAN/BV-H002
IEEE 802.16 Reference	clause 5.2.2, paragraph 3 and clause 11.13.19.3.4.11
PICS Item	
Initial Condition	IUT is operational and two DL Ethernet CS service flows are established having different CIDs. Packet classifiers are defined for both connections.
Expected Behaviour	Check that: When the classifiers for the two - overlap on the Ethernet User Priority, the IUT transmits CS SDUs matching the common Ethernet User Priority on the connection having the higher classifier priority.
Test strategy	
Notes	

TP ID	TP/BS/PCS/CLS/VLAN/BV-H003
IEEE 802.16 Reference	clause 5.2.2, paragraph 3 and clause 11.13.19.3.4.11
PICS Item	
Initial Condition	IUT is operational and two DL IP over Ethernet CS service flows are established having different CIDs. Packet classifiers are defined for both connections.
Expected Behaviour	Check that: When the classifiers for the two connections overlap on the Ethernet User Priority, the IUT transmits CS SDUs matching the common Ethernet User Priority on the connection having the higher classifier priority.
Test strategy	
Notes	IP service flows can either be IPv4 or IPv6.

5.2.10.3.4   IP over Ethernet (IPoE)

TP ID	TP/BS/PCS/CLS/IPoE/BV-H000
IEEE 802.16 Reference	clause 5.2.2, paragraph 3
PICS Item	
Initial Condition	IUT is operational and two DL IP over Ethernet CS service flows are established having different CIDs. Packet classifiers are defined for both connections.
Expected Behaviour	Check that: When the classifiers for the two connections do not overlap, the IUT transmits IP over Ethernet SDUs matching the classifier for the first connection on the first connection and transmits IP over Ethernet CS SDUs matching the classifier for the second connection on the second connection.
Test strategy	
Notes	IP service flows can either be IPv4 or IPv6.

TP ID	TP/BS/PCS/CLS/IPoE/BV-H001
IEEE 802.16 Reference	clause 5.2.2, paragraph 3 and clause 11.13.19.3.4.2
PICS Item	
Initial Condition	IUT is operational and two DL IP over Ethernet CS service flows are established having different CIDs. Packet classifiers are defined for both connections.
Expected Behaviour	Check that: When the classifiers for the two connections overlap on the IP Type of Service/DSCP, the IUT transmits CS SDUs matching the common IP Type of Service/DSCP on the connection having the higher classifier priority.
Test strategy	
Notes	IP service flows can either be IPv4 or IPv6.

TP ID	TP/BS/PCS/CLS/IPoE/BV-H002
IEEE 802.16 Reference	clause 5.2.2, paragraph 3 and clause 11.13.19.3.4.3
PICS Item	
Initial Condition	IUT is operational and two DL IP over Ethernet CS service flows are established having different CIDs. Packet classifiers are defined for both connections.
Expected Behaviour	Check that: When the classifiers for the two connections overlap on the IP Protocol, the IUT transmits CS SDUs matching the common IP Protocol on the connection having the higher classifier priority.
Test strategy	
Notes	IP service flows can either be IPv4 or IPv6.

TP ID	TP/BS/PCS/CLS/IPoE/BV-H003
IEEE 802.16 Reference	clause 5.2.2, paragraph 3 and clause 11.13.19.3.4.4
PICS Item	
Initial Condition	IUT is operational and two DL IP over Ethernet CS service flows are established having different CIDs. Packet classifiers are defined for both connections.
Expected Behaviour	Check that: When the classifiers for the two connections overlap on the IP Masked Source Address, the IUT transmits CS SDUs matching the common IP Masked Source Address on the connection having the higher classifier priority.
Test strategy	
Notes	IP service flows can either be IPv4 or IPv6.

TP ID	TP/BS/PCS/CLS/IPoE/BV-H004
IEEE 802.16 Reference	clause 5.2.2, paragraph 3 and clause 11.13.19.3.4.5
PICS Item	
Initial Condition	IUT is operational and two DL IP over Ethernet CS service flows are established having different CIDs. Packet classifiers are defined for both connections.
Expected Behaviour	Check that: When the classifiers for the two connections overlap on the IP Destination Address, the IUT transmits CS SDUs matching the common IP Destination Address on the connection having the higher classifier priority.
Test strategy	
Notes	IP service flows can either be IPv4 or IPv6.

TP ID	TP/BS/PCS/CLS/IPoE/BV-H005
IEEE 802.16 Reference	clause 5.2.2, paragraph 3 and clause 11.13.19.3.4.6
PICS Item	
Initial Condition	IUT is operational and two DL IP over Ethernet CS service flows are established having different CIDs. Packet classifiers are defined for both connections.
Expected Behaviour	Check that: When the classifiers for the two connections overlap on the IP Source Port, the IUT transmits CS SDUs matching the common IP Source Port on the connection having the higher classifier priority.
Test strategy	
Notes	IP service flows can either be IPv4 or IPv6.

TP ID	TP/BS/PCS/CLS/IPoE/BV-H006
IEEE 802.16 Reference	clause 5.2.2, paragraph 3 and clause 11.13.19.3.4.7
PICS Item	
Initial Condition	IUT is operational and two DL IP over Ethernet CS service flows are established having different CIDs. Packet classifiers are defined for both connections.
Expected Behaviour	Check that: When the classifiers for the two connections overlap on the IP Protocol Destination Port, the IUT transmits CS SDUs matching the common IP Protocol Destination Port on the connection having the higher classifier priority.
Test strategy	
Notes	IP service flows can either be IPv4 or IPv6.

TP ID	TP/BS/PCS/CLS/IPoE/BV-H007
IEEE 802.16 Reference	clause 5.2.2, paragraph 3 and clause 11.13.19.3.4.8
PICS Item	
Initial Condition	IUT is operational and two DL IP over Ethernet CS service flows are established having different CIDs. Packet classifiers are defined for both connections.
Expected Behaviour	Check that: When the classifiers for the two connections overlap on the Ethernet MAC Destination Address, the IUT transmits CS SDUs matching the common Ethernet MAC Destination Address on the connection having the higher classifier priority.
Test strategy	
Notes	IP service flows can either be IPv4 or IPv6.

TP ID	TP/BS/PCS/CLS/IPoE/BV-H008
IEEE 802.16 Reference	clause 5.2.2, paragraph 3 and clause 11.13.19.3.4.9
PICS Item	
Initial Condition	IUT is operational and two DL IP over Ethernet CS service flows are established having different CIDs. Packet classifiers are defined for both connections.
Expected Behaviour	Check that: When the classifiers for the two connections overlap on the Ethernet MAC Source Address, the IUT transmits CS SDUs matching the common Ethernet MAC Source Address on the connection having the higher classifier priority.
Test strategy	
Notes	IP service flows can either be IPv4 or IPv6.

TP ID	TP/BS/PCS/CLS/IPoE/BV-H009
IEEE 802.16 Reference	clause 5.2.2, paragraph 3 and clause 11.13.19.3.4.10
PICS Item	
Initial Condition	IUT is operational and two UL IP over Ethernet CS service flows are established having different CIDs. Packet classifiers are defined for both connections.
Expected Behaviour	Check that: When the classifiers for the two connections overlap on the Ethertype SAP, the IUT transmits CS SDUs matching the common Ethertype SAP on the connection having the higher classifier priority.
Test strategy	
Notes	IP service flows can either be IPv4 or IPv6.

TP ID	TP/BS/PCS/CLS/IPoE/BV-H010
IEEE 802.16 Reference	clause 5.2.2, paragraph 3 and clause 11.13.19.3.4.11
PICS Item	
Initial Condition	IUT is operational and two DL IP over Ethernet CS service flows are established having different CIDs. Packet classifiers are defined for both connections.
Expected Behaviour	Check that: When the classifiers for the two connections overlap on the Ethernet User Priority, the IUT transmits CS SDUs matching the common Ethernet User Priority on the connection having the higher classifier priority.
Test strategy	
Notes	IP service flows can either be IPv4 or IPv6.

TP ID	TP/BS/PCS/CLS/IPoE/BV-H011
IEEE 802.16 Reference	clause 5.2.2, paragraph 3 and clause 11.13.19.3.4.2-11
PICS Item	
Initial Condition	IUT is operational and two DL IP over Ethernet CS service flows are established having different CIDs. Packet classifiers are defined for both connections.
Expected Behaviour	Check that: When the classifiers for the two connections overlap on the: - IP Protocol Destination Port; - IP Type of Service/DSCP; - IP Protocol; - IP Masked Source Address; - IP Destination Address; - IP Protocol Source Port; - IP Protocol Destination Port; - Ethernet MAC Destination Address; - Ethernet MAC Source Address; and - Ethertype SAP the IUT transmits CS SDUs matching the common: - IP Protocol Destination Port; - IP Type of Service/DSCP; - IP Protocol; - IP Masked Source Address; - IP Destination Address; - IP Protocol Source Port; - IP Protocol Destination Port; - Ethernet MAC Destination Address; - Ethernet MAC Source Address; and - Ethertype SAP on the connection having the higher classifier priority.
Test strategy	
Notes	IP service flows can either be IPv4 or IPv6.

5.2.10.3.5   IP over VLAN (IPoV)

TP ID	TP/BS/PCS/CLS/IPoV/BV-H000
IEEE 802.16 Reference	clause 5.2.2, paragraph 3
PICS Item	
Initial Condition	IUT is operational and two DL IP over VLAN CS service flows are established having different CIDs. Packet classifiers are defined for both connections.
Expected Behaviour	Check that: When the classifiers for the two connections do not overlap, the IUT transmits IP over VLAN SDUs matching the classifier for the first connection on the first connection and transmits VLAN CS SDUs matching the classifier for the second connection on the second connection.
Test strategy	
Notes	IP service flows can either be IPv4 or IPv6.

TP ID	TP/BS/PCS/CLS/IPoV/BV-H001
IEEE 802.16 Reference	clause 5.2.2, paragraph 3 and clause 11.13.19.3.4.2
PICS Item	
Initial Condition	IUT is operational and two DL IP over VLAN CS service flows are established having different CIDs. Packet classifiers are defined for both connections.
Expected Behaviour	Check that: When the classifiers for the two connections overlap on the IP Type of Service/DSCP, the IUT transmits CS SDUs matching the common IP Type of Service/DSCP on the connection having the higher classifier priority.
Test strategy	
Notes	IP service flows can either be IPv4 or IPv6.

TP ID	TP/BS/PCS/CLS/IPoV/BV-H002
IEEE 802.16 Reference	clause 5.2.2, paragraph 3 and clause 11.13.19.3.4.3
PICS Item	
Initial Condition	IUT is operational and two DL IP over VLAN CS service flows are established having different CIDs. Packet classifiers are defined for both connections.
Expected Behaviour	Check that: When the classifiers for the two connections overlap on the IP Protocol, the IUT transmits CS SDUs matching the common IP Protocol on the connection having the higher classifier priority.
Test strategy	
Notes	IP service flows can either be IPv4 or IPv6.

TP ID	TP/BS/PCS/CLS/IPoV/BV-H003
IEEE 802.16 Reference	clause 5.2.2, paragraph 3 and clause 11.13.19.3.4.4
PICS Item	
Initial Condition	IUT is operational and two DL IP over VLAN CS service flows are established having different CIDs. Packet classifiers are defined for both connections.
Expected Behaviour	Check that: When the classifiers for the two connections overlap on the IP Masked Source Address, the IUT transmits CS SDUs matching the common IP Masked Source Address on the connection having the higher classifier priority.
Test strategy	
Notes	IP service flows can either be IPv4 or IPv6.

TP ID	TP/BS/PCS/CLS/IPoV/BV-H004
IEEE 802.16 Reference	clause 5.2.2, paragraph 3 and clause 11.13.19.3.4.5
PICS Item	
Initial Condition	IUT is operational and two DL IP over VLAN CS service flows are established having different CIDs. Packet classifiers are defined for both connections.
Expected Behaviour	Check that: When the classifiers for the two connections overlap on the IP Destination Address, the IUT transmits CS SDUs matching the common IP Destination Address on the connection having the higher classifier priority.
Test strategy	
Notes	IP service flows can either be IPv4 or IPv6.

TP ID	TP/BS/PCS/CLS/IPoV/BV-H005
IEEE 802.16 Reference	clause 5.2.2, paragraph 3 and clause 11.13.19.3.4.6
PICS Item	
Initial Condition	IUT is operational and two DL IP over VLAN CS service flows are established having different CIDs. Packet classifiers are defined for both connections.
Expected Behaviour	Check that: When the classifiers for the two connections overlap on the IP Source Port, the IUT transmits CS SDUs matching the common IP Source Port on the connection having the higher classifier priority.
Test strategy	
Notes	IP service flows can either be IPv4 or IPv6.

TP ID	TP/BS/PCS/CLS/IPoV/BV-H006
IEEE 802.16 Reference	clause 5.2.2, paragraph 3 and clause 11.13.19.3.4.7
PICS Item	
Initial Condition	IUT is operational and two DL IP over VLAN CS service flows are established having different CIDs. Packet classifiers are defined for both connections.
Expected Behaviour	Check that: When the classifiers for the two connections overlap on the IP Protocol Destination Port, the IUT transmits CS SDUs matching the common IP Protocol Destination Port on the connection having the higher classifier priority.
Test strategy	
Notes	IP service flows can either be IPv4 or IPv6.

TP ID	TP/BS/PCS/CLS/IPoV/BV-H007
IEEE 802.16 Reference	clause 5.2.2, paragraph 3 and clause 11.13.19.3.4.12
PICS Item	
Initial Condition	IUT is operational and two DL VLAN CS service flows are established having different CIDs. Packet classifiers are defined for both connections.
Expected Behaviour	Check that: When the classifiers for the two connections overlap on the VLAN ID, the IUT transmits CS SDUs matching the common VLAN ID on the connection having the higher classifier priority.
Test strategy	
Notes	IP service flows can either be IPv4 or IPv6.

TP ID	TP/BS/PCS/CLS/IPoV/BV-H008
IEEE 802.16 Reference	clause 5.2.2, paragraph 3 and clause 11.13.19.3.4.2-7,12
PICS Item	
Initial Condition	IUT is operational and two DL VLAN CS service flows are established having different CIDs. Packet classifiers are defined for both connections.
Expected Behaviour	Check that: When the classifiers for the two connections overlap on the: - IP Protocol Destination Port; - IP Type of Service/DSCP; - IP Protocol; - IP Masked Source Address; - IP Destination Address; - IP Protocol Source Port; - IP Protocol Destination Port; and - VLAN ID the IUT transmits CS SDUs matching the common: - IP Protocol Destination Port; - IP Type of Service/DSCP; - IP Protocol; - IP Masked Source Address; - IP Destination Address; - IP Protocol Source Port; - IP Protocol Destination Port; and - VLAN ID on the connection having the higher classifier priority.
Test strategy	
Notes	IP service flows can either be IPv4 or IPv6.

5.2.10.4   Payload Header Suppression (PHS)

TP ID	TP/BS/PCS/PHS/BV-H000
IEEE 802.16 Reference	clause 5.2.3.2, paragraph 3
PICS Item	
Initial Condition	IUT is operating.
Expected Behaviour	Check that: To create a PHS rule, the IUT uses DSA or DSC messages.
Test strategy	
Notes	

TP ID	TP/BS/PCS/PHS/BV-H001
IEEE 802.16 Reference	clause 5.2.3.2, paragraph 5
PICS Item	
Initial Condition	IUT is operating and defining a PHS rule using more than one transaction with DSA and/or DSC messages.
Expected Behaviour	Check that: For each step whether using a DSA or DSC message, the IUT generates the messages containing both the SFID and the PHS index.
Test strategy	
Notes	Contradicts TP/SS/PCS/PHS/BV-H002 if DSx transaction is SS-initiated.

TP ID	TP/BS/PCS/PHS/BV-H002
IEEE 802.16 Reference	clause 5.2.3.2 paragraph 3 Figure "PHS Signaling Example"
PICS Item	
Initial Condition	IUT is operating. IUT is creating a PHS rule by initiating a DSA or a DSC transaction.
Expected Behaviour	Check that: When generating the DSA-REQ or the DSC-REQ, the IUT does not include the PHSI field.
Test strategy	
Notes	

TP-ID	TP/BS/PCS/PHS/BV-H003
IEEE 802.16 Reference	clause 5.2.3
PICS Item	
Initial Condition	The IUT has completed a DSA exchange setting up a connection. A set of classifiers has been established for this connection specifying that the payload header suppression rule applies. Another classifier has been established for this connection specifying that no header suppression rule applied.
Expected Behaviour	Check that: - to transmit data that matches the classifier with header payload suppression, the IUT a correct PHSI and sends data with headers suppressed according to the rule; and - to transmit data that matches the classifier without header payload suppression, the IUT sends data with headers and a correct PHSI.
Test strategy	
Notes	Test for all supported protocols. Test with different number of payload header suppression rules and different values for PHSI, PHSF, PHSM and PHSS.

TP ID	TP/BS/PCS/PHS/BV-H100
IEEE 802.16 Reference	clause 5.2.3.2.3 and 11.13.19.3.2
PICS Item	
Initial Condition	IUT is operating.
Expected Behaviour	Check that: To change or delete a PHS rule, the IUT uses DSC messages.
Test strategy	
Notes	

TP ID	TP/BS/PCS/PHS/BV-H101
IEEE 802.16 Reference	clause 5.2.3.2
PICS Item	
Initial Condition	IUT is operating. A packet CS service flow with PHS is established for a packet classifier.
Expected Behaviour	Check that: When the packet classifier is deleted, the IUT deletes the PHS rule associated with the packet classifier.
Test strategy	
Notes	

TP ID	TP/BS/PCS/PHS/BV-H102
IEEE 802.16 Reference	clause 5.2.3, paragraph 2
PICS Item	
Initial Condition	IUT is operating. A packet CS service flow with PHS is established for a packet classifier.
Expected Behaviour	Check that: To change the value of a PHSF on the service, the IUT removes the old PHS rule and adds a new PHS rule reflecting the change.
Test strategy	
Notes	The order of removal and add is not specified. Assume no order is required.

TP ID	TP/BS/PCS/PHS/BV-H103
IEEE 802.16 Reference	clause 5.2.3, paragraph 2
PICS Item	
Initial Condition	IUT is operating. A packet CS service flow with PHS is established for a packet classifier.
Expected Behaviour	Check that: On completion of a DSC transaction to delete a classifier and another DSC transaction to add a classifier in either order, the IUT treats the two transactions as a change to the PHSF.
Test strategy	
Notes	

TP-ID	TP/BS/PCS/PHS/BV-H200
IEEE 802.16 Reference	clause 5.2.3.1
PICS Item	
Initial Condition	The IUT has completed a DSA exchange setting up a connection. A classifier has been established for this connection specifying that the payload header suppression rule applies.
Expected Behaviour	Check that: On receiving data that matches the classifier with header payload suppression, the IUT correctly delivers data to its Upper Layer after having restored the headers.
Test strategy	
Notes	Test for all supported protocols. Test with different PHSF and PHSM and PHSS.

TP-ID	TP/BS/PCS/PHS/BV-H201
IEEE 802.16 Reference	clause 5.2.3.1
PICS Item	
Initial Condition	The IUT has completed a DSA exchange setting up a connection. A classifier has been established for this connection specifying that the payload header suppression rule applied.
Expected Behaviour	Check that: On receiving data that matches the classifier with header payload suppression and the PHSI is null, the IUT delivers the data to its Upper Layer without restoring the header.
Test strategy	
Notes	If PHSI is null, the header is contained in the data and no suppression is used.

TP ID	TP/BS/PCS/PHS/BV-H202
IEEE 802.16 Reference	clause 5.2.3.1, paragraph 2
PICS Item	
Initial Condition	IUT is operating. A DL packet CS service flow with PHS is established for a packet classifier. The PHSV was not present during the DSx transaction establishing the suppression rule.
Expected Behaviour	Check that: For a given upper layer protocol, the IUT correctly suppresses the payload header according to the payload header suppression rule.
Test strategy	
Notes	Upper layer protocol can be IPv4, IPv6, Ethernet, VLAN, IP over Ethernet, or IP over VLAN.

TP ID	TP/BS/PCS/PHS/BV-H203
IEEE 802.16 Reference	clause 5.2.3.1, paragraph 2
PICS Item	
Initial Condition	IUT is operating. A DL packet CS service flow with PHS is established for a packet classifier. The PHSV was present during the DSx transaction establishing the suppression rule.
Expected Behaviour	Check that: For a given upper layer protocol, the IUT correctly suppresses the payload header according to the payload header suppression rule.
Test strategy	
Notes	Upper layer protocol can be IPv4, IPv6, Ethernet, VLAN, IP over Ethernet, or IP over VLAN.

TP-ID	TP/BS/PCS/PHS/BO-H000
IEEE 802.16 Reference	clause 5.2.3
PICS Item	
Initial Condition	The IUT has completed a DSA exchange setting up a connection. A classifier has been established for this connection specifying that the payload header suppression rule applies. Another connection is in the active state.
Expected Behaviour	Check that: On receiving data on a connection that is not associated with the corresponding PHSI, the IUT silently discards the data.
Test strategy	
Notes	

5.2.11   Service Flow Control (SF)

TP ID	TP/BS/SF/BV-H000
IEEE 802.16 Reference	clause 6.3.14.6.2
PICS Item	
Initial Condition	IUT is operational and a service flow is Admitted.
Expected Behaviour	Check that: On receiving a DSA-REQ for an additional service flow that exceeds the provisioned QoS, the IUT transmits a DSA-RSP accepting the additional service flow and reserves resources for the service flow already admitted.
Test strategy	
Notes	

TP ID	TP/BS/SF/BV-H001
IEEE 802.16 Reference	clause 6.3.14.6.2
PICS Item	
Initial Condition	IUT is operational and a service flow is Active.
Expected Behaviour	Check that: On receiving a DSC-REQ for the active service flow with an AdmittedQoSParameterSet that is a subset of the current AdmittedQoSParameterSet and the ActiveQoSParameterSet remains a subset of the new AdmittedQoSParameterSet, the IUT transmits a DSC-RSP accepting the new AdmittedQoSParameterSet.
Test strategy	
Notes	

TP ID	TP/BS/SF/BV-H002
IEEE 802.16 Reference	clause 6.3.14.6.2
PICS Item	
Initial Condition	IUT is operational and a service flow is Active.
Expected Behaviour	Check that: On receiving a DSC-REQ for the active service flow with an AdmittedQoSParameterSet that is a subset of the current AdmittedQoSParameterSet and the ActiveQoSParameterSet no longer remains a subset of the new AdmittedQoSParameterSet, the IUT transmits a DSC-RSP rejecting the new AdmittedQoSParameterSet.
Test strategy	
Notes	

TP ID	TP/BS/SF/BV-H003
IEEE 802.16 Reference	clause 6.3.14.8
PICS Item	
Initial Condition	IUT is operational and a service flow is Active.
Expected Behaviour	Check that: On receiving a DSC-REQ message for the service flow containing only an AdmittedQoSParameter set and the on the DSC transaction being successful, the IUT deactivates the service flow.
Test strategy	
Notes	

TP ID	TP/BS/SF/BV-H004
IEEE 802.16 Reference	clause 6.3.14.8
PICS Item	
Initial Condition	IUT is operational and a service flow is Active. The IUT received a DSC-REQ for the service flow with neither an ActiveQoSParameter set nor an AdmittedQosParameter set. This DSC transaction was successful.
Expected Behaviour	Check that: On receiving a DSC-REQ containing only an ActiveQoSParameter set and successful DSC transaction completion, the IUT deactivates the service flow.
Test strategy	
Notes	

TP ID	TP/BS/SF/BV-H005
IEEE 802.16 Reference	clause 6.3.14.8
PICS Item	
Initial Condition	IUT is operational and a service flow is Active.
Expected Behaviour	Check that: On receiving a DSC-REQ containing both an ActiveQoSParameter set and an AdmittedQoSParameter set and on successful completion of the DSC transaction, the IUT implements the QoS contained in the new Admitted and Active QoS Parameter sets (the ActiveQoSParameter set is a subset of the AdmittedQoSParameter set).
Test strategy	
Notes	

TP ID	TP/BS/SF/BV-H006
IEEE 802.16 Reference	clause 6.3.14.8
PICS Item	
Initial Condition	IUT is operational and a service flow is Active.
Expected Behaviour	Check that: On receiving a DSC-REQ containing both an ActiveQoSParameter set and an AdmittedQoSParameter set but the Active set is not a subset of the Admitted set, the IUT transmits a DSC-RSP refusing the change and continues using the original QoS.
Test strategy	
Notes	

TP ID	TP/BS/SF/BV-H007
IEEE 802.16 Reference	clause 6.3.14.9.4
PICS Item	
Initial Condition	IUT is operational and a service flow is Active.
Expected Behaviour	Check that: On receiving a DSC-REQ with a null ActiveQoSParameter set, the IUT transmits a DSC-RSP accepting the transaction and after successful transaction completion the IUT deactivates the service flow.
Test strategy	
Notes	

TP ID	TP/BS/SF/BV-H008
IEEE 802.16 Reference	clauses 6.3.14.2 and 11.13.4
PICS Item	
Initial Condition	IUT has just initialized and is now provisioning a service flow.
Expected Behaviour	Check that: The IUT has service flow parameters containing a ProvisionedQoSParameter set.
Test strategy	
Notes	

TP ID	TP/BS/SF/BV-H009
IEEE 802.16 Reference	clauses 6.3.14.2 and 11.13.4
PICS Item	
Initial Condition	IUT has just initialized. A service flow is preprovisioned.
Expected Behaviour	Check that: The IUT has service flow parameters containing a ProvisionedQoSParameter set.
Test strategy	
Notes	

TP ID	TP/BS/SF/BV-H010
IEEE 802.16 Reference	clause 6.3.14.8
PICS item	
Initial Condition	IUT is operational. A downlink service flow is active. The IUT has received a DSC-REQ message with neither an Active QoS parameters set nor an Admitted QoS parameters set. The DSC transaction was successful and the downlink service was deactivated.
Expected Behaviour	Check that: On receiving a DSC-REQ message with only an Active QoS Parameters Set and when the DSC transaction is successfully completed, the IUT does not reactivate the downlink service flow.
Test strategy	

TP ID	TP/BS/SF/BV-H100
IEEE 802.16 Reference	clause 11.13.5
PICS Item	
Initial Condition	IUT is operating with two service flows.
Expected Behaviour	Check that: Given that two service flows are identical in al QoS parameters besides priority, the IUT gives the higher priority service flow lower delay and higher buffering preference.
Test strategy	
Notes	

TP ID	TP/BS/SF/BV-H101
IEEE 802.16 Reference	clause 11.13.6
PICS Item	
Initial Condition	IUT is operational and a service flow is Active and has a non-zero Maximum Sustained Traffic Rate parameter.
Expected Behaviour	Check that: The IUT provides the Maximum Sustained Traffic Rate on the average over time.
Test strategy	
Notes	

TP ID	TP/BS/SF/BV-H102
IEEE 802.16 Reference	clause 11.13.6
PICS Item	
Initial Condition	IUT is operational and a service flow is Active and has a Maximum Sustained Traffic Rate parameter = zero.
Expected Behaviour	Check that: The IUT does not provide a mandated maximum traffic rate.
Test strategy	
Notes	

TP ID	TP/BS/SF/BV-H103
IEEE 802.16 Reference	clause 11.13.6
PICS Item	
Initial Condition	IUT is operational and a service flow is Active and the Maximum Sustained Traffic Rate parameter was omitted during QoS negotiation.
Expected Behaviour	Check that: The IUT does not provide a mandated maximum traffic rate.
Test strategy	
Notes	

TP ID	TP/BS/SF/BV-H104
IEEE 802.16 Reference	clause 11.13.7
PICS Item	
Initial Condition	IUT is operational and a service flow is Active. A Maximum Traffic Burst Size was set during QoS negotiation.
Expected Behaviour	Check that: The IUT provides the Maximum Traffic Burst Size for this service flow.
Test strategy	
Notes	

TP ID	TP/BS/SF/BV-H105
IEEE 802.16 Reference	clause 11.13.10
PICS Item	
Initial Condition	The IUT is operational and a service flow is Active.
Expected Behaviour	Check that: On receiving a DSC-REQ containing Vendor-specific QoS Parameters that does not the Vendor ID as its first element, the IUT discards the Vendor-specific QoS Parameters, processes the remainder of the DSC-REQ, and transmits a valid DSC-RSP.
Test strategy	
Notes	

TP ID	TP/BS/SF/BV-H106
IEEE 802.16 Reference	clause 11.13.12
PICS Item	
Initial Condition	The IUT is operational.
Expected Behaviour	Check that: On receiving a DSA-REQ with the Request/Transmission Policy Bit #0 set to zero followed by a successful DSA transaction, the IUT does not provide broadcast bandwidth request opportunities for the service flow.
Test strategy	
Notes	

TP ID	TP/BS/SF/BV-H107
IEEE 802.16 Reference	clause 11.13.12
PICS Item	
Initial Condition	The IUT is operational.
Expected Behaviour	Check that: On receiving a DSA-REQ with the Request/Transmission Policy Bit #1 set to zero followed by a successful DSA transaction, the IUT does not provide multicast bandwidth request opportunities for the service flow.
Test strategy	
Notes	

TP ID	TP/BS/SF/BV-H108
IEEE 802.16 Reference	clause 11.13.12
PICS Item	
Initial Condition	The IUT is operational.
Expected Behaviour	Check that: On receiving a DSA-REQ with the Request/Transmission Policy Bit #2 set to prohibit piggy-backing requests with data followed by a successful DSA transaction, the IUT does not piggy-back requests with data for the service flow.
Test strategy	
Notes	

TP ID	TP/BS/SF/BV-H109
IEEE 802.16 Reference	clause 11.13.12
PICS Item	
Initial Condition	The IUT is operational.
Expected Behaviour	Check that: On receiving a DSA-REQ with the Request/Transmission Policy Bit #3 set to prohibit data fragmentation followed by a successful DSA transaction, the IUT does not fragment data for the service flow.
Test strategy	
Notes	

TP ID	TP/BS/SF/BV-H110
IEEE 802.16 Reference	clause 11.13.12
PICS Item	
Initial Condition	The IUT is operational.
Expected Behaviour	Check that: On receiving a DSA-REQ with the Request/Transmission Policy Bit #4 set to prohibit payload header suppression followed by a successful DSA transaction, the IUT does not suppress headers for the service flow.
Test strategy	
Notes	

TP ID	TP/BS/SF/BV-H111
IEEE 802.16 Reference	clause 11.13.12
PICS Item	
Initial Condition	The IUT is operational.
Expected Behaviour	Check that: On receiving a DSA-REQ with the Request/transmission Policy Bit #5 set to prohibit packing multiple SDUs (or fragments) into single MAC PDUs followed by a successful DSA transaction, the IUT does not pack multiple SDUs (or fragments) into single MAC PDUs for the service flow.
Test strategy	
Notes	

TP ID	TP/BS/SF/BV-H112
IEEE 802.16 Reference	clause 11.13.14
PICS Item	
Initial Condition	The IUT is operational.
Expected Behaviour	Check that: On receiving a DSA-REQ with a Maximum Latency parameter that does not exceed the Minimum Downlink Reserved Rate followed by a successful DSA transaction, the IUT satisfies Maximum Latency requirement for the service flow.
Test strategy	
Notes	

5.2.12   Adaptive Antenna Support (AAS)

TP ID	TP/BS/AAS/BV-H000
IEEE 802.16 Reference	clause 6.3.7.6.4
PICS item	
Initial Condition	IUT is ranging.
Expected Behaviour	Check that The IUT tunes the adaptive array during the ranging process.
Test strategy	
Notes	

TP ID	TP/BS/AAS/BV-H001
IEEE 802.16 Reference	clause 6.3.7.6.5
PICS item	
Initial Condition	The IUT is operational. An SS is in AAS mode and has accomplished network entry.
Expected Behaviour	Check that: To determine channel state, the IUT transmits the AAS-FBACK-REQ message and an uplink allocation.
Test strategy	
Notes	

TP ID	TP/BS/AAS/BV-H002
IEEE 802.16 Reference	clause 6.3.7.6.5
PICS item	
Initial Condition	The IUT is operational. The SS is in AAS mode and has accomplished network entry.
Expected Behaviour	Check that: To determine channel state, the IUT transmits the AAS-FBACK-REQ message and an uplink allocation.
Test strategy	
Notes	

TP ID	TP/BS/AAS/BV-H003
IEEE 802.16 Reference	clause 10.4 Table "CIDs"
PICS item	
Initial Condition	IUT begins initial ranging.
Expected Behaviour	Check that: The IUT uses the AAS initial ranging CID (0xFEFF) to allocate an Initial Ranging period.
Test strategy	
Notes	

TP ID	TP/BS/AAS/BV-H004
IEEE 802.16 Reference	clause 6.3.2.3
PICS item	
Initial Condition	
Expected Behaviour	Check that: For the AAS portion of the frame, the IUT transmits the DL-MAP, UL-MAP, DCD, UCD, and CLK-CMP messages with the Basic CID.
Test strategy	
Notes	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	TP/BS/AAS/BV-H100
IEEE 802.16 Reference	clause 6.3.7.6.6 Table "RNG-REQ message encodings (row 4)" Table "RNG-RSP message encodings (row 1)"
PICS item	
Initial Condition	The IUT is operational. The IUT has received a RNG-REQ message with AAS broadcast capability TLV set to 0x01 (SS cannot receive broadcast messages).
Expected Behaviour	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 bandwidth requirements or set to 0x00 (Contention-based bandwidth requests permitted) and correspondingly changes the array beam so that bandwidth requests are not lost.
Test strategy	
Notes	

TP ID	TP/BS/AAS/BV-H200
IEEE 802.16 Reference	clause 8.3.6.2.4
PICS item	
Initial Condition	IUT is operating.
Expected Behaviour	Check that: In the DL-MAP, the IUT indicates that the switch from non-AAS to AAS-enabled traffic is marked by 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 is set to the Broadcast CID. Check that subsequent AAS PHY bursts start with the short preamble.
Test strategy	
Notes	

TP ID	TP/BS/AAS/BV-H201
IEEE 802.16 Reference	clause 8.3.6.2.4
PICS item	
Initial Condition	IUT is operating.
Expected Behaviour	Check that: In the DL-MAP, the IUT indicates that the switch from non-AAS to AAS-enabled traffic is marked by 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 is set to the Broadcast ID. Check that subsequent AAS PHY bursts start with the short preamble.
Test strategy	
Notes	

TP ID	TP/BS/AAS/BV-H202
IEEE 802.16 Reference	clause 8.3.6.2.4
PICS item	
Initial Condition	IUT is operating.
Expected Behaviour	Check that: In the UL-MAP, the IUT indicates that the switch from non-AAS to AAS-enabled traffic is marked by 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.
Test strategy	
Notes	

5.3   Test purposes for SS (SS)

5.3.1   Channel Descriptors and Maps (CDM)

5.3.1.1   Map and Frame Structure (MAP)

5.3.1.1.1   Initialization (INIT)

TP ID	TP/SS/CDM/MAP/INIT/BV-H000
IEEE 802.16 Reference	clause 6.3.9.1
PICS Item	
Initial Condition	IUT is turned off. The IUT has not previously acquired a downlink channel.
Expected Behaviour	Check that: When switched on, the IUT scans the possible channels until it finds a valid downlink signal.
Test strategy	This TP is untestable without an Upper Tester. The TP is implicitly tested during the Initial Ranging and subsequent tests. If the IUT does not acquire a downlink channel, it cannot receive any PDUs from the TE.
Notes	

TP ID	TP/SS/CDM/MAP/INIT/BV-H001
IEEE 802.16 Reference	clause 6.3.9.1
PICS Item	
Initial Condition	IUT is configured to start scanning a given channel. IUT is receiving a valid downlink signal on a channel other than the IUT's given configured channel.
Expected Behaviour	Check that: When turned on, the IUT acquires the valid downlink signal on the transmitted channel.
Test strategy	
Notes	Implicitly tested by observing subsequent IUT behaviour.

TP ID	TP/SS/CDM/MAP/INIT/BV-H002
IEEE 802.16 Reference	clause 6.3.9.1
PICS Item	
Initial Condition	IUT is turned on and has begun scanning. The IUT has found a valid downlink channel.
Expected Behaviour	Check that: The IUT correctly decodes the DL-MAP.
Test strategy	This TP is untestable without an Upper Tester. It is implicitly tested during the Initial Ranging and subsequent tests. If the IUT does not decode a DL-MAP, it cannot receive any PDUs from the TE.
Notes	

TP ID	TP/SS/CDM/MAP/INIT/BV-H003
IEEE 802.16 Reference	clauses 6.3.9 and 8.3.5.1 Table "OFDM Downlink Frame Prefix Format"
PICS Item	
Initial Condition	IUT is turned on, has begun scanning, and has found the IUT's configured BS ID on a channel.
Expected Behaviour	Check that: The IUT accepts each frame having the IUT's configured BS ID where the BS ID in the DLFP matches the BS_ID in the DL-MAP.
Test strategy	1) The TE is configured to use BS_ID #1 in the DLFP and BS_ID #2 in the DL-MAP. 2) Turn on the IUT. 3) The TE is turned on. 4) A preliminary pass verdict is assigned after T21 expiry if the IUT does not send a RNG-REQ in response to the DL-MAPs. 5) The TE is then configured to transmit DL-MAPS with BS_ID #1 as in the DLFP. 6) The final pass verdict is assigned if the IUT sends a RNG-REQ in response to the new DL-MAPs. 7) The TE is then configured to send DLFP and DL-MAP with BS_ID #2 while the IUT is still registered. 8) The final pass verdict is assigned if the IUT restarts scanning before lostUlMaptimeout or lostDlMapTimeout.
Notes	

TP ID	TP/SS/CDM/MAP/INIT/BV-H004
IEEE 802.16 Reference	clauses 6.3.9 and 8.3.5.1 Table "OFDM Downlink Frame Prefix Format"
PICS Item	
Initial Condition	IUT has found the IUT's configured BS ID on a channel and is accepting each frame having the IUT's configured BS ID where the BS ID in the DLFP matches the BS_ID in the DL-MAP.
Expected Behaviour	Check that: On receiving frames where the BS ID in the DLFP does not match the BS ID in the DL-MAP for Lost DL-MAP Interval, the IUT scans for a new channel using its configured BS ID.
Test strategy	1) The TE is configured to use BS_ID #1 in the DLFP and BS_ID #1 in the DL-MAP. 2) Turn on the IUT. 3) The TE is turned on. 4) A preliminary pass verdict is assigned if the IUT sends a RNG-REQ in response to the DL-MAPs. 5) The TE is then configured to send DLFP and DL-MAP with BS_ID #2 while the IUT is still registered. 6) The final pass verdict is assigned if the IUT restarts scanning after Lost DL-MAP Interval.
Notes	

5.3.1.1.2   Operational (OPN)

TP ID	TP/SS/CDM/MAP/OPN/BV-H000
IEEE 802.16 Reference	clause 6.3.3.2
PICS Item	
Initial Condition	The IUT is generating MAC PDUs for management messages, user data, and bandwidth request.
Expected Behaviour	Check that: On receiving a UL-MAP allowing sufficient space to concatenate two or more MAC PDUs into the same uplink burst, the IUT concatenates the PDUs into the uplink burst.
Test strategy	1) Establish 2 uplink service flows. 2) TE sends 2 UL-MAP IEs per frame, each one sufficient for one of the service flows. 3) Interim verdict is PASS if the IUT delivers the uplink data for each service flow per the UL-MAP IEs. 4) TE then sends one UL-MAP IE per frame sufficiently large for both service flows to be transmitted in the same burst. 5) Verdict is PASS if the IUT places the uplink data for both service flows into the uplink burst per the UL-MAP IE.
Notes	1) Packing must be OFF for this test.

TP ID	TP/SS/CDM/MAP/OPN/BV-H001
IEEE 802.16 Reference	clause 8.3.5.1, paragraph 5
PICS Item	
Initial Condition	IUT is operating and receiving a DL service flow.
Expected Behaviour	Check that: On receiving multiple burst profiles in the same frame both at the negotiated DL PHY mode and more robust PHY modes per the DL-MAP, the IUT correctly decodes each of the MAC PDUs.
Test strategy	
Notes	

TP ID	TP/SS/CDM/MAP/OPN/TI-H000
IEEE 802.16 Reference	clause 6.3.9.3, paragraph 2 Figure "Maintaining downlink synchronization"
PICS Item	
Initial Condition	IUT is synchronized.
Expected Behaviour	Check that: On not receiving DL-MAP for Lost DL-MAP Interval, the IUT re-establishes synchronization by scanning for a valid DL channel.
Test strategy	
Notes	Implicitly tested by subsequent behaviour.

TP ID	TP/SS/CDM/MAP/OPN/TI-H001
IEEE 802.16 Reference	clause 6.3.9.3, paragraph 2 Figure "Maintain uplink parameters"
PICS Item	
Initial Condition	IUT is synchronized and UL parameters are established.
Expected Behaviour	Check that: On not receiving UL-MAP for Lost UL-MAP Interval, the IUT scans for a valid DL channel.
Test strategy	
Notes	Implicitly tested by subsequent behaviour.

5.3.1.1.3 Relevance (RLV)

TP ID	TP/SS/CDM/MAP/RLV/BV-H000
IEEE 802.16 Reference	clause 6.3.7.5
PICS Item	
Initial Condition	The IUT has scanned and synchronized to the DL-MAPs.
Expected Behaviour	Check that: On receiving UL-MAPs with minimum relevance (Allocation Start Time) granting bandwidth to the SS, the IUT correctly transmits MAC PDUs per the UL grant.
Test strategy	Unless otherwise noted, the grants for UL messages and the DCD and UCD messages necessary for operation are implicitly incorporated in the strategy. 1) The IUT has scanned and found a valid DL-MAP message with its configured BS ID. 2) The IUT then transmits a valid RNG-REQ message in an Initial Ranging Interval with a CID=0. 3) The TE then transmits a RNG-RSP with Status = Continue and the Basic and Primary CIDs. 4) The TE then transmits in a later frame an UL-MAP with minimum relevance for the Basic CID. 5) The pass verdict is assigned if the IUT transmits a valid Ranging Request per the UL-MAP for the Basic CID in the same frame as the UL-MAP's frame.
Notes	

TP ID	TP/SS/CDM/MAP/RLV/BV-H001
IEEE 802.16 Reference	clause 6.3.7.5
PICS Item	
Initial Condition	The IUT has scanned and synchronized to the DL-MAPs.
Expected Behaviour	Check that: On receiving UL-MAPs with maximum relevance (Allocation Start Time) granting bandwidth to the SS, the IUT correctly transmits MAC PDUs per the UL grant.
Test strategy	Unless otherwise noted, the grants for UL messages and the DCD and UCD messages necessary for operation are implicitly incorporated in the strategy. 1) The IUT has scanned and found a valid DL-MAP message with its configured BS ID. 2) The IUT then transmits a valid RNG-REQ message in an Initial Ranging Interval with a CID=0. 3) The TE then transmits a RNG-RSP with the Basic and Primary CIDs. 4) The TE then transmits in a later frame an UL-MAP MAPs with maximum relevance for the Basic CID. 5) The pass verdict is assigned if the IUT transmits a valid Ranging Request per the UL-MAP for the Basic CID in the frame following the UL-MAP's frame.
Notes	

TP ID	TP/SS/CDM/MAP/RLV/BV-H002
IEEE 802.16 Reference	clause 6.3.7.5
PICS Item	
Initial Condition	IUT is a Full FDD implementation. An UL service flow is established and IUT accepts data using minimum relevance.
Expected Behaviour	Check that: On receiving UL-MAPs that change the relevance from minimum to maximum, the IUT transmits the UL service flow data using maximum relevance.
Test strategy	
Notes	

TP ID	TP/SS/CDM/MAP/RLV/BV-H003
IEEE 802.16 Reference	clause 6.3.7.5
PICS Item	
Initial Condition	IUT is a Half FDD implementation. An UL service flow is established and IUT accepts data using minimum relevance.
Expected Behaviour	Check that: On receiving UL-MAPs that change the relevance from minimum to maximum, the IUT transmits the UL service flow data using maximum relevance.
Test strategy	
Notes	

5.3.1.2   Channel Descriptors (CD)

TP ID	TP/SS/CDM/CD/BV-H000
IEEE 802.16 Reference	clauses 6.3.9.2, 6.3.2.3.1 and 11.4.2
PICS Item	
Initial Condition	The IUT has just synchronized and received a valid DCD.
Expected Behaviour	Check that: The IUT responds to DL MAC PDUs received on the downlink PHY parameters and DL Burst Profiles contained in the DCD.
Test strategy	Unless otherwise noted, the grants for UL messages and the DCD and UCD messages necessary for operation are implicitly incorporated in the strategy. 1) The IUT is configured to initialize with the TE. 2) The TE transmits DL-MAPs followed by a DCD message in the DCD Interval with given downlink PHY parameters and DL Burst Profile. 3) IUT sends a RNG_REQ. 4) TE sends a RNG_RSP in accordance with the downlink PHY parameters and the chosen DL Burst profile. 5) The intermediate test verdict is assigned on the IUT transmitting a valid SBC-REQ (indicating that Burst Profile identified in the DCD was interpreted correctly by the IUT). 6) The IUT is switched off and then back on to initialize with the TE. 7) The TE transmits DL-MAPs followed by a DCD message in the DCD Interval with downlink PHY parameters and DL Burst Profiles different from the given parameters and profiles in step (2) above. 8) The test verdict is assigned on the IUT transmitting a valid RNG-REQ.
Notes	

TP ID	TP/SS/CDM/CD/BV-H001
IEEE 802.16 Reference	clauses 6.3.9.3 and 6.3.2.3.3
PICS Item	
Initial Condition	The IUT has just synchronized.
Expected Behaviour	Check that: When the IUT receives a valid UCD message, the IUT transmits MAC PDUs per the uplink PHY parameters and UL Burst Profiles in the UCD.
Test strategy	1) The IUT is configured to initialize with the TE. 2) The TE transmits UL-MAPs followed by a UCD message in the UCD Interval. 3) The IUT transmits a valid RNG-REQ. The test verdict is on the TE-received RNG-REQ's uplink PHY parameters and UL Burst Profile.
Notes	

TP ID	TP/SS/CDM/CD/BV-H100
IEEE 802.16 Reference	clauses 6.3.2.3.1 and 8.3.5.4
PICS Item	
Initial Condition	The IUT is operating.
Expected Behaviour	Check that: On receiving a DCD changing the Frame Duration Code, the IUT resynchronizes to the BS.
Test strategy	
Notes	

TP ID	TP/SS/CDM/CD/BV-H200
IEEE 802.16 Reference	clause 6.3.7.6.1, paragraph 4
PICS Item	
Initial Condition	The IUT is operating. IUT is not AAS-capable.
Expected Behaviour	Check that: The IUT ignores the AAS traffic indicated in DL-MAP and UL-MAP messages.
Test strategy	
Notes	

TP ID	TP/SS/CDM/CD/TI-H000
IEEE 802.16 Reference	clause 6.3.9.2, paragraph 1 Figure "Maintaining DL Synchronization"
PICS Item	
Initial Condition	IUT is synchronized and operating.
Expected Behaviour	Check that: On not receiving a valid DCD for greater than T1 duration, the IUT scans for the next valid DL channel.
Test strategy	
Notes	

TP ID	TP/SS/CDM/CD/TI-H001
IEEE 802.16 Reference	clause 6.3.9.3, paragraph 5 Figure "Maintain Uplink Parameters"
PICS Item	
Initial Condition	IUT is synchronized and operating.
Expected Behaviour	Check that: On not receiving a valid UCD for greater than T12 duration, the IUT does not use the uplink and scans for the next valid DL channel.
Test strategy	
Notes	

5.3.1.3   Channel Descriptor Change (CDC)

5.3.1.3.1   Uplink (UL)

TP ID	TP/SS/CDM/CDC/UL/BV-H000
IEEE 802.16 Reference	clause 6.3.11 Table "UCD update"
PICS Item	
Initial Condition	IUT is operating and transmitting data using Configuration Change Count = i. The IUT receives a UCD changing the uplink channel descriptor with a Configuration Change Count = (i + 1 MOD 256).
Expected Behaviour	Check that: On receiving a UL-MAP with Configuration Change Count = i, the IUT continues to transmit data using the burst profile corresponding to the Configuration Change Count = i.
Test strategy	
Notes	

TP ID	TP/SS/CDM/CDC/UL/BV-H001
IEEE 802.16 Reference	clause 6.3.11 Table "UCD update"
PICS Item	
Initial Condition	IUT is operating and transmitting data using Configuration Change Count = i. The IUT receives a UCD changing the uplink channel descriptor with a Configuration Change Count = (i + 1 MOD 256) followed by a UL-MAP with Configuration Change Count = i. The IUT then transmits data using the burst profiles corresponding to the Configuration Change Count = i. The IUT then receives another UCD with a Configuration Change Count = (i + 1 MOD 256).
Expected Behaviour	Check that: On receiving a UL-MAP with Configuration Change Count = i, the IUT continues to transmit data using the burst profile corresponding to the Configuration Change Count = i.
Test strategy	
Notes	

TP ID	TP/SS/CDM/CDC/UL/BV-H002
IEEE 802.16 Reference	clause 6.3.11 Table "UCD update"
PICS Item	
Initial Condition	IUT is operating and transmitting data using Configuration Change Count = i. The IUT receives a UCD changing the uplink channel descriptor with a Configuration Change Count = (i + 1 MOD 256) followed by a UL-MAP with Configuration Change Count = i. The IUT then transmits data using the burst profiles defined in the UCD with Configuration Change Count = i. The IUT then receives another UCD with a Configuration Change Count = (i + 1 MOD 256).
Expected Behaviour	Check that: On receiving successive UL-MAPs each having Configuration Change Count = i, the IUT continues to transmit data using the burst profile corresponding to the Configuration Change Count = i.
Test strategy	
Notes	

TP ID	TP/SS/CDM/CDC/UL/BV-H003
IEEE 802.16 Reference	clause 6.3.11 Table "UCD update"
PICS Item	
Initial Condition	IUT is operating and transmitting data using Configuration Change Count = i. The IUT receives a UCD changing the uplink channel descriptor with a Configuration Change Count = (i + 1 MOD 256) followed by a UL-MAP with Configuration Change Count = i. The IUT then transmits data using the burst profiles defined in the UCD with Configuration Change Count = i. The IUT then receives another UCD with a Configuration Change Count = (i + 1 MOD 256) followed by successive UL-MAPs each having Configuration Change Count = i. The IUT continues to transmit data using the burst profile corresponding to the Configuration Change Count = i.
Expected Behaviour	Check that: On receiving a UL-MAP with a Configuration Change Count = (i + 1 MOD 256), the IUT transmits the data using the new burst profile corresponding to the Configuration Change Count = (i + 1 MOD 256).
Test strategy	
Notes	

5.3.1.3.2   Downlink (DL)

TP ID	TP/SS/CDM/CDC/DL/BV-H000
IEEE 802.16 Reference	clause 6.3.11 Table "DCD update"
PICS Item	
Initial Condition	IUT is operating and receiving downlink data Configuration Change Count = i. The IUT receives a DCD message with Configuration Change Count = (i + 1 MOD 256).
Expected Behaviour	Check that: On receiving a DL-MAP with Configuration Change Count = i, the IUT continues to process the DL data using the DCD settings corresponding to Configuration Change Count = i.
Test strategy	
Notes	

TP ID	TP/SS/CDM/CDC/DL/BV-H001
IEEE 802.16 Reference	clause 6.3.11 Table "DCD update"
PICS Item	
Initial Condition	IUT is operating and receiving downlink data Configuration Change Count = i. The IUT receives a DCD message with Configuration Change Count = (i + 1 MOD 256) followed by DL-MAPs with Configuration Change Count = i. The IUT continues to process the DL data using burst profile corresponding to Configuration Change Count = i. The IUT then receives another DCD message with Configuration Change Count = (i + 1 MOD 256).
Expected Behaviour	Check that: On receiving a DL-MAP with Configuration Change Count = i, the IUT continues to process the DL data using the DCD settings corresponding to Configuration Change Count = i.
Test strategy	
Notes	

TP ID	TP/SS/CDM/CDC/DL/BV-H002
IEEE 802.16 Reference	clause 6.3.11 Table "DCD update"
PICS Item	
Initial Condition	IUT is operating and receiving downlink data Configuration Change Count = i. The IUT receives a DCD message with Configuration Change Count = (i + 1 MOD 256) followed by DL-MAPs with Configuration Change Count = i. The IUT continues to process the DL data using burst profile corresponding to Configuration Change Count = i. The IUT then receives another DCD message with Configuration Change Count = (i + 1 MOD 256).
Expected Behaviour	Check that: On receiving a DL-MAP with Configuration Change Count = (i + 1 MOD 256), the IUT processes the DL data using the new burst profile corresponding to Configuration Change Count = (i + 1 MOD 256).
Test strategy	
Notes	

5.3.2   Radio Link Control (RLC)

5.3.2.1   Initial Ranging (IRNG)

TP ID	TP/SS/RLC/IRNG/BV-H000
IEEE 802.16 Reference	clause 6.3.9.5.1
PICS Item	
Initial Condition	The IUT is synchronized and UL and DL parameters are established.
Expected Behaviour	Check that: The IUT transmits a RNG-REQ with CID=0 in the nth Transmission Opportunity where n is a random value in the range $0 < n < (2^m - 1)$. "m" is the value in the latest UCD message's Ranging Backoff Start field.
Test strategy	1) The TE transmits valid DCD, DL-MAP, and UCD during sufficient time to allow the IUT to become synchronized and to establish UL and DL parameters. The TE also transmits UL-MAP messages that do not contain Initial Ranging Intervals. 2) The TE then transmits UL-MAPs containing Initial Ranging Intervals. 3) A PASS verdict is assigned if the IUT transmits a valid RNG-REQ with CID=0 in one of the UL-MAP's Initial Ranging Intervals with backoff.
Notes	

TP ID	TP/SS/RLC/IRNG/BV-H001
IEEE 802.16 Reference	clause 6.3.9.5
PICS Item	
Initial Condition	The IUT has started Initial Ranging and has transmitted the first RNG-REQ message on the Initial Ranging CID (zero).
Expected Behaviour	Check that: On receiving a RNG-RSP message with timing and power corrections and the Status field set to Continue, the IUT applies the power and timing corrections and transmits a RNG-REQ using the Basic CID in the RNG-RSP message in an invited Initial Ranging Interval.
Test strategy	Straightforward.
Notes	

TP ID	TP/SS/RLC/IRNG/BV-H002
IEEE 802.16 Reference	clause 6.3.9.5.1
PICS Item	
Initial Condition	The IUT is in Initial Ranging and has just transmitted a RNG-REQ message.
Expected Behaviour	Check that: On receiving a RNG-RSP message containing Status = Continue and timing adjustments, the IUT incorporates the timing adjustments to transmit a RNG-REQ message.
Test strategy	Straightforward.
Notes	

TP ID	TP/SS/RLC/IRNG/BV-H003
IEEE 802.16 Reference	clause 6.3.9.5.1, paragraph 10
PICS Item	
Initial Condition	IUT is in Initial Ranging.
Expected Behaviour	Check that: On receiving a RNG-RSP on its Basic CID with Status = Continue requiring a frequency adjustment, the IUT transmits at the adjusted frequency a valid RNG-REQ message.
Test strategy	
Notes	

TP ID	TP/SS/RLC/IRNG/BV-H004
IEEE 802.16 Reference	clauses 6.3.2.3.5-6 and 6.3.9.5 Table "RNG-RSP Message Encodings" Figure "Initial Ranging-SS (Part 2)"
PICS Item	
Initial Condition	IUT is Initializing and has finished the contention part of Initial Ranging.
Expected Behaviour	Check that: Each time on receiving a RNG-RSP containing a Ranging Status set to continue (1) and Contention Ranging Retries is not exhausted, the IUT 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).
Test strategy	
Notes	

TP ID	TP/SS/RLC/IRNG/BV-H005
IEEE 802.16 Reference	clause 8.3.7.2, paragraph 8 Figure "Subchannelized Initial Ranging - SS (Parts 1a and 1b)"
PICS Item	
Initial Condition	IUT supports subchannelization and its initialization. IUT has attempted to use the maximum power level without success. IUT has then sent a Subchannelization Ranging Signal on a subchannel.
Expected Behaviour	Check that: On receiving a UL-MAP with a Subchannelized Network_Entry_IE for the Initial Ranging CID (= zero), the IUT sends a subchannelized RNG-REQ at maximum power.
Test strategy	
Notes	

TP ID	TP/SS/RLC/IRNG/BV-H100
IEEE 802.16 Reference	clause 6.3.9.6 Figure "Initial Ranging-SS (part 2)"
PICS Item	
Initial Condition	The IUT is in Initial Ranging and has just transmitted at maximum power a RNG-REQ message.
Expected Behaviour	Check that: On receiving a RNG-RSP message containing Status = Continue and an increase in power, the IUT transmits a RNG-REQ in the next grant (UIUC=1) on its Basic CID with Ranging Anomalies set to "SS already at maximum power".
Test strategy	Straightforward.
Notes	

TP ID	TP/SS/RLC/IRNG/BV-H101
IEEE 802.16 Reference	clause 6.3.9.6 Figure "Initial Ranging-SS (part 2)"
PICS Item	
Initial Condition	The IUT is in Initial Ranging and has just transmitted at minimum power a RNG-REQ message.
Expected Behaviour	Check that: On receiving a RNG-RSP message containing Status = Continue and a decrease in power, the IUT transmits a RNG-REQ in the next grant (UIUC=1) on its Basic CID with Ranging Anomalies set to "SS already at minimum power".
Test strategy	Straightforward.
Notes	

TP ID	TP/SS/RLC/IRNG/BV-H102
IEEE 802.16 Reference	clause 6.3.9.6 Figure "Initial Ranging-SS (part 2)"
PICS Item	
Initial Condition	The IUT is in Initial Ranging and has just transmitted RNG-REQ message.
Expected Behaviour	Check that: On receiving a RNG-RSP message containing Status = Continue with timing adjustments whose sum is too large, the IUT transmits a RNG-REQ in the next grant (UIUC=1) on its Basic CID with Ranging Anomalies set to "Sum of commanded timing adjustments is too large".
Test strategy	Straightforward.
Notes	

TP ID	TP/SS/RLC/IRNG/BV-H103
IEEE 802.16 Reference	clauses 6.3.2.3.5-6 and 6.3.9.5 Figure "Initial Ranging-SS (Part 2)"
PICS Item	
Initial Condition	For License-exempt operation. The IUT is in Initial Ranging
Expected Behaviour	Check that: On receiving a RNG-RSP containing an Uplink Channel ID Override TLV, the IUT moves to the designated channel and sends a RNG-REQ (CID = zero).
Test strategy	
Notes	

TP ID	TP/SS/RLC/IRNG/BV-H104
IEEE 802.16 Reference	Figure "Initial Ranging-SS (Part 2)"
PICS Item	
Initial Condition	IUT is in Initial Ranging.
Expected Behaviour	Check that: On receiving a RNG-RSP on its Basic CID with Status = Abort and containing a DL Frequency Override TLV, the IUT moves to the frequency given in the DL Frequency Override TLV and scans for a valid DL-MAP.
Test strategy	
Notes	

TP ID	TP/SS/RLC/IRNG/BV-H105
IEEE 802.16 Reference	clause 6.3.9.5.1 Figure "Initial Ranging-SS (part 2)"
PICS Item	
Initial Condition	The IUT is Initial Ranging and has transmitted a RNG-REQ message.
Expected Behaviour	Check that: On receiving a RNG-RSP message with Status = Abort and not containing a DL Frequency Override TLV, the IUT scans for the next DL channel and resets the MAC layer.
Test strategy	1) Straightforward up to the TE sending the RNG-RSP message with the criteria in the Test Purpose. 2) Begin transmitting DL-MAPs, DCDs, UL-MAPs, and UCDs on the next DL channel. 3) Assign a PASS if the IUT transmits a RNG-REQ on the DL channel used in 2) and with a CID=0.
Notes	

TP ID	TP/SS/RLC/IRNG/BV-H106
IEEE 802.16 Reference	clause 11.1.3
PICS Item	
Initial Condition	The IUT conforms to only the current versions of IEEE 802.16-2004 [2]. It is initializing and transmitted a RNG-REQ containing the current MAC version value. The IUT has received a RNG-RSP indicating a prior MAC version value.
Expected Behaviour	Check that: IUT disables any attempt for uplink transmission.
Test strategy	
Notes	

TP ID	TP/SS/RLC/IRNG/BV-H107
IEEE 802.16 Reference	clause 11.1.3
PICS Item	
Initial Condition	The IUT conforms to past and current versions of IEEE 802.16-2004 [2]. It is initializing and transmitted a RNG-REQ containing the current MAC version value. The IUT has received a RNG-RSP indicating a prior MAC version value.
Expected Behaviour	Check that: IUT continues operation in conformance with the prior MAC version.
Test strategy	
Notes	

TP ID	TP/SS/RLC/IRNG/BV-H108
IEEE 802.16 Reference	clause 6.3.9.5.1, paragraph 8 Table "Ranging and automatic adjustments procedure (continued)"
PICS Item	
Initial Condition	The IUT has started Initial Ranging and has transmitted the first RNG-REQ message on the Initial Ranging CID (zero).
Expected Behaviour	Check that: On receiving a RNG-RSP message on the Initial Ranging CID (zero) with transmission parameters, the Frame Number, and the Initial Ranging Opportunity Number, the IUT adjusts transmission parameters and transmits another RNG-REQ on the Initial Ranging CID in the next transmission opportunity.
Test strategy	
Notes	

TP ID	TP/SS/RLC/IRNG/TI-H000
IEEE 802.16 Reference	Figure Obtaining Uplink Parameters Figure "Initial Ranging-SS (Part 2)"
PICS Item	
Initial Condition	IUT has found a valid DL channel, obtained UL parameters, started T2, and is waiting for a contention ranging opportunity.
Expected Behaviour	Check that: On T2 expiry without receiving a contention ranging opportunity, the IUT scans for another valid downlink channel.
Test strategy	
Notes	

TP ID	TP/SS/RLC/IRNG/TI-H001
IEEE 802.16 Reference	clause 6.3.9.5.1, paragraph 7 Figure "Initial Ranging-SS (Part 2)" clause 6.3.8 paragraph 7
PICS Item	
Initial Condition	IUT has begun initialization and sent the first contention RNG-REQ (CID = ZERO) with backoff.
Expected Behaviour	Check that: On not receiving a valid RNG-RSP, the IUT transmits another contention RNG-REQ in a backoff window whose Start and End values are 2 times greater than the first backoff window.
Test strategy	
Notes	The TE should ensure that the 2nd backoff window's end value will be less than the maximum backoff window end value.

TP ID	TP/SS/RLC/IRNG/TI-H002
IEEE 802.16 Reference	clauses 6.3.2.3.5-6 and 6.3.9.5 Table "Parameters and Constants", Contention Ranging Retries
PICS Item	
Initial Condition	IUT is has begun contention Initial Ranging and is receiving Initial Contention ranging slots. The IUT has sent a RNG-REQ (CID = zero) with backoff and started T3.
Expected Behaviour	Check that: Each time T3 expires and a RNG-RSP is not received, the IUT sends a RNG-REQ message (CID = zero) in a backoff window twice as large as the previous window or maximum backoff window (whichever is smaller) and re-started T3 until Contention Request Retries is exhausted.
Test strategy	
Notes	

TP ID	TP/SS/RLC/IRNG/TI-H003
IEEE 802.16 Reference	Figure "Initial Ranging-SS (Part 2)"
PICS Item	
Initial Condition	IUT has begun Initialization, started T3, and sent Contention Ranging Retries to which there has been no response.
Expected Behaviour	Check that: When T3 expires, the IUT scans for a valid DL channel.
Test strategy	
Notes	

5.3.2.2   Periodic Ranging (PRNG)

TP ID	TP/SS/RLC/PRNG/BV-H000
IEEE 802.16 Reference	
PICS Item	
Initial Condition	IUT is operational. An UL data flow is established with data being sent. The IUT has transmitted a MAC DATA PDU.

Expected Behaviour	Check that: On receiving a RNG-RSP message to adjust power with Status = Continue that does not cause Ranging Anomalies followed by a Data grant, the IUT implements the RNG-RSP's power correction, stops sending data, and transmits a short preamble with:
	    - either a RNG-REQ without anomalies (see note); or
	    - a padding PDU; or
	    - stuff bytes.

Test strategy	
Notes	It is implicit that there are stuff bytes or a padding PDU in the remainder of the burst filled by the RNG-REQ.

TP ID	TP/SS/RLC/PRNG/BV-H001
IEEE 802.16 Reference	
PICS Item	
Initial Condition	IUT is operational. An UL data flow is established with data being sent.

Expected Behaviour	Check that: On receiving a RNG-RSP message to change the timing advance with Status = Continue that does not cause Ranging Anomalies followed by a Data grant, the IUT implements the RNG-RSP's timing adjustments, stops sending data, and transmits a short preamble with:
	    - either a RNG-REQ without anomalies (see note); or
	    - a padding PDU; or
	    - stuff bytes.

Test strategy	
Notes	It is implicit that there are stuff bytes or a padding PDU in the remainder of the burst filled by the RNG-REQ.

TP ID	TP/SS/RLC/PRNG/BV-H002
IEEE 802.16 Reference	
PICS Item	
Initial Condition	IUT is operational. An UL data flow is established with data being sent.

Expected Behaviour	Check that: On receiving a RNG-RSP message to adjust power with Status = Continue that does not cause Ranging Anomalies followed by an Invited Ranging opportunity, the IUT implements the RNG-RSP's corrections, stops sending data, and transmits a long preamble with:
	   - either a RNG-REQ without anomalies (see note); or
	   - a padding PDU; or
	   - stuff bytes.

Test strategy	
Notes	It is implicit that there are stuff bytes or a padding PDU in the remainder of the burst filled by the RNG-REQ.

TP ID	TP/SS/RLC/PRNG/BV-H003
IEEE 802.16 Reference	
PICS Item	
Initial Condition	IUT is operational. An UL data flow is established with data being sent.

Expected Behaviour	Check that: On receiving a RNG-RSP message to change the timing advance with Status = Continue that does not cause Ranging Anomalies followed by an Invited Ranging opportunity, the IUT implements the RNG-RSP's timing adjustments, stops sending data, and transmits a long preamble with:
	   - either a RNG-REQ without anomalies (see note); or
	   - a padding PDU; or
	   - stuff bytes.

Test strategy	
Notes	It is implicit that there are stuff bytes or a padding PDU in the remainder of the burst filled by the RNG-REQ.

TP ID	TP/SS/RLC/PRNG/BV-H004
IEEE 802.16 Reference	
PICS Item	
Initial Condition	IUT is operational. An uplink data flow is established. There is no UL data pending transfer or being transferred.

Expected Behaviour	Check that: On receiving a RNG-RSP with Status = Success that does not cause Ranging Anomalies followed by a Data grant, the IUT implements the RNG-RSP's corrections and transmits a short preamble with:
	   - either a RNG-REQ without anomalies (see note); or
	   - a padding PDU; or
	   - stuff bytes.

Test strategy	
Notes	It is implicit that there are stuff bytes or a padding PDU in the remainder of the burst filled by the RNG-REQ.

TP ID	TP/SS/RLC/PRNG/BV-H005
IEEE 802.16 Reference	
PICS Item	
Initial Condition	IUT is operational. An UL data flow is established. There is no UL data pending transfer or being transferred.

Expected Behaviour	Check that: On receiving an FPC that does not cause Ranging Anomalies followed by a Data grant, the IUT implements the FPC's corrections and transmits a short preamble with:
	   - either a RNG-REQ without anomalies (see note); or
	   - a padding PDU; or
	   - stuff bytes.

Test strategy	
Notes	It is implicit that there are stuff bytes or a padding PDU in the remainder of the burst filled by the RNG-REQ.

TP ID	TP/SS/RLC/PRNG/BV-H006
IEEE 802.16 Reference	
PICS Item	
Initial Condition	IUT is operational. An UL data flow is established. There is no UL data pending transfer or being transferred.

Expected Behaviour	Check that: On receiving a Power Control IE that does not cause Ranging Anomalies followed by a Data grant, the IUT implements the Power Control IE's corrections and transmits a short preamble with:
	  - either a RNG-REQ without anomalies (see note); or
	  - a padding PDU; or
	  - stuff bytes.

Test strategy	
Notes	It is implicit that there are stuff bytes or a padding PDU in the remainder of the burst filled by the RNG-REQ.

TP ID	TP/SS/RLC/PRNG/BV-H007
IEEE 802.16 Reference	
PICS Item	
Initial Condition	IUT is operational. An UL data flow is established. UL data is being transferred.

Expected Behaviour	Check that: On receiving a RNG-RSP with Status = Success that does not cause Ranging Anomalies followed by a Data grant, the IUT implements the RNG-RSP's corrections and:
	  - either continues transmitting data in the Data grant; or
	  - transmits a RNG-REQ without anomalies in the Data grant (see note); or
	  - transmits data and a RNG-REQ without anomalies using the Data grant.

Test strategy	
Notes	It is implicit that there are stuff bytes or a padding PDU in the remainder of the burst filled by the RNG-REQ.

TP ID	TP/SS/RLC/PRNG/BV-H008
IEEE 802.16 Reference	
PICS Item	
Initial Condition	IUT is operational. An UL data flow is established. UL data is being transferred.

Expected Behaviour	Check that: On receiving an FPC that does not cause Ranging Anomalies followed by a Data grant, the IUT implements the FPC's corrections and:
	  - either continues transmitting data in the Data grant; or
	  - transmits a RNG-REQ without anomalies in the Data grant (see note); or
	  - transmits data and a RNG-REQ without anomalies in the Data grant.

Test strategy	
Notes	It is implicit that there are stuff bytes or a padding PDU in the remainder of the burst filled by the RNG-REQ.

TP ID	TP/SS/RLC/PRNG/BV-H009
IEEE 802.16 Reference	
PICS Item	
Initial Condition	IUT is operational. An UL data flow is established. UL data is being transferred.

Expected Behaviour	Check that: On receiving a Power Control IE that does not cause Ranging Anomalies followed by a Data grant, the IUT implements the Power Control IE's corrections and:
	  - either continues transmitting data in the Data grant; or
	  - transmits a RNG-REQ without anomalies in the Data grant (see note); or
	  - transmits data and a RNG-REQ without anomalies in the Data grant.

Test strategy	
Notes	It is implicit that there are stuff bytes or a padding PDU in the remainder of the burst filled by the RNG-REQ.

TP ID	TP/SS/RLC/PRNG/BV-H010
IEEE 802.16 Reference	
PICS Item	
Initial Condition	IUT is operational. An UL data flow is established. UL data is being transferred.

Expected Behaviour	Check that: On receiving a RNG-RSP with Status = Success that does not cause Ranging Anomalies followed by an Invited Ranging Opportunity, the IUT implements the RNG-RSP's corrections and transmits:
	   - either a padding PDU; or
	   - stuff bytes; or
	   - a RNG-REQ without anomalies (see note).

Test strategy	
Notes	It is implicit that there are stuff bytes or a padding PDU in the remainder of the burst filled by the RNG-REQ.

TP ID	TP/SS/RLC/PRNG/BV-H011
IEEE 802.16 Reference	
PICS Item	
Initial Condition	IUT is operational. An UL data flow is established. UL data is being transferred.

Expected Behaviour	Check that: On receiving an FPC that does not cause Ranging Anomalies followed by an Invited Ranging Opportunity, the IUT implements the FPC's corrections and transmits:
	   - either a padding PDU; or
	   - stuff bytes; or
	   - a RNG-REQ without anomalies (see note).

Test strategy	
Notes	It is implicit that there are stuff bytes or a padding PDU in the remainder of the burst filled by the RNG-REQ.

TP ID	TP/SS/RLC/PRNG/BV-H012
IEEE 802.16 Reference	
PICS Item	
Initial Condition	IUT is operational. An UL data flow is established. UL data is being transferred.

Expected Behaviour	Check that: On receiving a Power Control IE that does not cause Ranging Anomalies followed by an Invited Ranging Opportunity, the IUT implements the Power Control IE's corrections and transmits:
	   - either a padding PDU; or
	   - stuff bytes; or
	   - a RNG-REQ without anomalies (see note).

Test strategy	
Notes	It is implicit that there are stuff bytes or a padding PDU in the remainder of the burst filled by the RNG-REQ.

TP ID	TP/SS/RLC/PRNG/BV-H013
IEEE 802.16 Reference	
PICS Item	
Initial Condition	IUT is operational. The UL data flow is established. IUT is transmitting UL data at or near maximum power.
Expected Behaviour	Check that: On receiving a RNG-RSP message with Status = Continue to increase power above the IUT's maximum power followed by a Data grant, the IUT stops transmitting data, adjusts transmission power to the maximum if required, and sends a RNG-REQ with Ranging Anomalies = "SS already at maximum power" in the Data grant.
Test strategy	
Notes	

TP ID	TP/SS/RLC/PRNG/BV-H014
IEEE 802.16 Reference	
PICS Item	
Initial Condition	IUT is operational. The UL data flow is established. IUT is transmitting UL data at or near minimum power.
Expected Behaviour	Check that: On receiving a RNG-RSP message with Status = Continue to decrease power below the IUT's minimum power followed by a Data grant, the IUT stops transmitting data, adjusts transmission power to the minimum if required, and sends a RNG-REQ with Ranging Anomalies = "SS already at minimum power" in the Data grant.
Test strategy	
Notes	

TP ID	TP/SS/RLC/PRNG/BV-H015
IEEE 802.16 Reference	
PICS Item	
Initial Condition	IUT is operational. The UL data flow is established. IUT is transmitting UL data at or near maximum power.
Expected Behaviour	Check that: On receiving a RNG-RSP message with Status = Continue to increase power above the IUT's maximum power followed by an Invited Ranging opportunity (UIUC = 1), the IUT stops transmitting data, adjusts transmission power to maximum if required, and sends a RNG-REQ with Ranging Anomalies = "SS already at maximum power" in the Invited Ranging opportunity.
Test strategy	
Notes	

TP ID	TP/SS/RLC/PRNG/BV-H016
IEEE 802.16 Reference	
PICS Item	
Initial Condition	IUT is operational. The UL data flow is established. IUT is transmitting UL data at or near minimum power.
Expected Behaviour	Check that: On receiving a RNG-RSP message with Status = Continue to decrease power the IUT's minimum power followed by an Invited Ranging opportunity (UIUC = 1), the IUT stops transmitting data, adjusts transmission power to minimum if required, and sends a RNG-REQ with Ranging Anomalies = "SS already at minimum power" in the Invited Ranging opportunity.
Test strategy	
Notes	

TP ID	TP/SS/RLC/PRNG/BV-H017
IEEE 802.16 Reference	
PICS Item	
Initial Condition	IUT is operational.
Expected Behaviour	Check that: On receiving a RNG-RSP containing the Ranging Status set to Abort, the IUT re-initializes its MAC layer and restarts its MAC operations.
Test strategy	
Notes	

TP ID	TP/SS/RLC/PRNG/BV-H018
IEEE 802.16 Reference	
PICS Item	
Initial Condition	IUT is operational. The UL data flow is established. IUT was transmitting data at or near maximum power, received an RNG-RSP message with Status = Continue to increase power above the IUT's maximum power, stopped transmitting data, and sent a RNG-REQ with Ranging Anomalies = "SS already at maximum power".

Expected Behaviour	Check that: On receiving Data grants, the IUT transmits in the Data grants at maximum power:
	    - either a padding PDU; or
	    - stuff bytes; or
	    - a RNG-REQ without anomalies (see note).

Test strategy	
Notes	IUT does not send a RNG-REQ with anomalies nor does it send data. It is implicit that there are stuff bytes or a padding PDU in the remainder of the burst filled by the RNG-REQ.

TP ID	TP/SS/RLC/PRNG/BV-H019
IEEE 802.16 Reference	
PICS Item	
Initial Condition	IUT is operational. The UL data flow is established. IUT was transmitting data at or near minimum power, received an RNG-RSP message with Status = Continue to decrease power below the IUT's minimum power, stopped transmitting data, and sent a RNG-REQ with Ranging Anomalies = "SS already at minimum power".

Expected Behaviour	Check that: On receiving Data grants, the IUT transmits in the Data grants at minimum power:
	    - either a padding PDU; or
	    - stuff bytes; or
	    - a RNG-REQ without anomalies (see note).

Test strategy	
Notes	IUT does not send a RNG-REQ with anomalies nor does it send data. It is implicit that there are stuff bytes or a padding PDU in the remainder of the burst filled by the RNG-REQ.

TP ID	TP/SS/RLC/PRNG/BV-H020
IEEE 802.16 Reference	
PICS Item	
Initial Condition	IUT is operational. The UL data flow is established. IUT was transmitting data at or near maximum power, received an RNG-RSP message with Status = Continue to increase power above the IUT's maximum power, stopped transmitting data, and sent a RNG-REQ with Ranging Anomalies = "SS already at maximum power".

Expected Behaviour	Check that: On receiving an Invited Ranging Opportunity, the IUT transmits in the Opportunity at maximum power:
	    - either a padding PDU; or
	    - stuff bytes; or
	    - a RNG-REQ without anomalies (see note).

Test strategy	
Notes	IUT does not send a RNG-REQ with anomalies nor does it send data. It is implicit that there are stuff bytes or a padding PDU in the remainder of the burst filled by the RNG-REQ.

TP ID	TP/SS/RLC/PRNG/BV-H021
IEEE 802.16 Reference	
PICS Item	
Initial Condition	IUT is operational. The UL data flow is established. IUT was transmitting data at or near minimum power, received an RNG-RSP message with Status = Continue to decrease power below the IUT's minimum power, stopped transmitting data, and sent a RNG-REQ with Ranging Anomalies = "SS already at minimum power".

Expected Behaviour	Check that: On receiving an Invited Ranging Opportunity, the IUT transmits in the Opportunity at minimum power:
	   - either a padding PDU; or
	   - stuff bytes; or
	   - a RNG-REQ without anomalies (see note).

Test strategy	
Notes	IUT does not send a RNG-REQ with anomalies nor does it send data. It is implicit that there are stuff bytes or a padding PDU in the remainder of the burst filled by the RNG-REQ.

TP ID	TP/SS/RLC/PRNG/BV-H022
IEEE 802.16 Reference	
PICS Item	
Initial Condition	IUT is operational. The UL data flow is established. IUT is transmitting UL data at or near maximum power.

Expected Behaviour	Check that: On receiving a RNG-RSP message with Status = Success to increase power above the IUT's maximum power followed by a Data grant, the IUT adjusts to maximum power if required and sends:
	   - either a RNG-REQ with Ranging Anomalies = "SS already at maximum power" in the Data grant; or
	   - a RNG-REQ with Ranging Anomalies = "SS already at maximum power" and a DATA PDU in the Data grant.

Test strategy	
Notes	The IUT continues transmitting data using subsequent Data grants. (see note)It is implicit that there are stuff bytes or a padding PDU in the remainder of the burst filled by the RNG-REQ.

TP ID	TP/SS/RLC/PRNG/BV-H023
IEEE 802.16 Reference	
PICS Item	
Initial Condition	IUT is operational. The UL data flow is established with no data pending transfer or being transferred. IUT is transmitting at or near maximum power.
Expected Behaviour	Check that: On receiving a RNG-RSP message with Status = Success to increase power above the IUT's maximum power followed by a Data grant, the IUT adjusts to maximum power if required and transmits a RNG-REQ with Ranging Anomalies = "SS already at maximum power" in the grant.
Test strategy	
Notes	

TP ID	TP/SS/RLC/PRNG/BV-H024
IEEE 802.16 Reference	
PICS Item	
Initial Condition	IUT is operational. The UL data flow is established. IUT is transmitting UL data at or near minimum power.

Expected Behaviour	Check that: On receiving a RNG-RSP message with Status = Success to decrease power below the IUT's minimum power followed by a Data grant, the IUT adjusts to minimum power if required and sends:
	   - either a RNG-REQ with Ranging Anomalies = "SS already at minimum power" in the Data grant (see note); or
	   - a RNG-REQ with Ranging Anomalies = "SS already at minimum power" and a DATA PDU in the Data grant.

Test strategy	
Notes	It is implicit that there are stuff bytes or a padding PDU in the remainder of the burst filled by the RNG-REQ.

TP ID	TP/SS/RLC/PRNG/BV-H025
IEEE 802.16 Reference	
PICS Item	
Initial Condition	IUT is operational. The UL data flow is established with no data pending transfer or being transferred. IUT is transmitting at or near minimum power.
Expected Behaviour	Check that: On receiving a RNG-RSP message with Status = Success to decrease power below the IUT's minimum power followed by a Data grant, the IUT adjusts to minimum power if required and transmits a RNG-REQ with Ranging Anomalies = "SS already at minimum power" in the grant.
Test strategy	
Notes	

TP ID	TP/SS/RLC/PRNG/BV-H026
IEEE 802.16 Reference	
PICS Item	
Initial Condition	IUT is operational. The UL data flow is established. IUT is transmitting UL data at or near maximum power.
Expected Behaviour	Check that: On receiving a RNG-RSP message with Status = Success to increase power above the IUT's maximum power followed by an Invited Ranging Opportunity, the IUT adjusts to maximum power if required and transmits a RNG-REQ with Ranging Anomalies = "SS already at maximum power" in the Opportunity.
Test strategy	
Notes	

TP ID	TP/SS/RLC/PRNG/BV-H027
IEEE 802.16 Reference	
PICS Item	
Initial Condition	IUT is operational. The UL data flow is established. IUT is transmitting UL data at or near minimum power.
Expected Behaviour	Check that: On receiving a RNG-RSP message with Status = Success to decrease power below the IUT's minimum power followed by an Invited Ranging Opportunity, the IUT adjusts to minimum power if required and transmits a RNG-REQ with Ranging Anomalies = "SS already at minimum power" in the Opportunity.
Test strategy	
Notes	The IUT continues transmitting Data PDUs using the Data grants n.

TP ID	TP/SS/RLC/PRNG/BV-H028
IEEE 802.16 Reference	
PICS Item	
Initial Condition	IUT is operational. The UL data flow is established. IUT is transmitting UL data at or near maximum power.
Expected Behaviour	Check that: On receiving an FPC message to increase power above the IUT's maximum power followed by a Data grant, the IUT adjusts to maximum power if required and sends: - either a RNG-REQ with Ranging Anomalies = "SS already at maximum power" in the Data grant (see note); or - a RNG-REQ with Ranging Anomalies = "SS already at maximum power" and a DATA PDU in the Data grant.
Test strategy	
Notes	It is implicit that there are stuff bytes or a padding PDU in the remainder of the burst filled by the RNG-REQ.

TP ID	TP/SS/RLC/PRNG/BV-H029
IEEE 802.16 Reference	
PICS Item	
Initial Condition	IUT is operational. The UL data flow is established with no data pending transfer or being transferred. IUT is transmitting at or near maximum power.
Expected Behaviour	Check that: On receiving an FPC message to increase power above the IUT's maximum power followed by a Data grant, the IUT adjusts to maximum power if required and sends a RNG-REQ with Ranging Anomalies = "SS already at maximum power" in the grant.
Test strategy	
Notes	

TP ID	TP/SS/RLC/PRNG/BV-H30
IEEE 802.16 Reference	
PICS Item	
Initial Condition	IUT is operational. The UL data flow is established. IUT is transmitting UL data at or near minimum power.
Expected Behaviour	Check that: On receiving an FPC message to decrease power below the IUT's minimum power followed by a Data grant, the IUT adjusts to minimum power if required and sends: - either a RNG-REQ with Ranging Anomalies = "SS already at minimum power" in the Data grant (see note); or - RNG-REQ with Ranging Anomalies = "SS already at minimum power" and a DATA PDU in the Data grant.
Test strategy	
Notes	It is implicit that there are stuff bytes or a padding PDU in the remainder of the burst filled by the RNG-REQ.

TP ID	TP/SS/RLC/PRNG/BV-H031
IEEE 802.16 Reference	
PICS Item	
Initial Condition	IUT is operational. The UL data flow is established with no data pending transfer or being transferred. IUT is transmitting at or near minimum power.
Expected Behaviour	Check that: On receiving an FPC message to decrease power below the IUT's minimum power followed by a Data grant, the IUT adjusts to minimum power if required and sends a RNG-REQ with Ranging Anomalies = "SS already at minimum power" in the grant.
Test strategy	
Notes	

TP ID	TP/SS/RLC/PRNG/BV-H032
IEEE 802.16 Reference	
PICS Item	
Initial Condition	IUT is operational. The UL data flow is established. IUT is transmitting UL data at or near maximum power.
Expected Behaviour	Check that: On receiving an FPC message to increase power above the IUT's maximum power followed by a Invited Ranging Opportunity, the IUT adjusts to maximum power if required and sends a RNG-REQ with Ranging Anomalies = "SS already at maximum power" in the opportunity.
Test strategy	
Notes	IUT continues transmitting data on Data grants.

TP ID	TP/SS/RLC/PRNG/BV-H033
IEEE 802.16 Reference	
PICS Item	
Initial Condition	IUT is operational. The UL data flow is established. IUT is transmitting UL data at or near minimum power.
Expected Behaviour	Check that: On receiving an FPC message to decrease power below the IUT's minimum power followed by a Invited Ranging Opportunity, the IUT adjusts to minimum power if required and sends a RNG-REQ with Ranging Anomalies = "SS already at minimum power" in the opportunity.
Test strategy	
Notes	IUT continues transmitting data on Data grants.

TP ID	TP/SS/RLC/PRNG/BV-H034
IEEE 802.16 Reference	
PICS Item	
Initial Condition	IUT is operational. The UL data flow is established. IUT is transmitting UL data at or near maximum power.

Expected Behaviour	Check that: On receiving a Power Control IE to increase power above the IUT's maximum power followed by a Data grant, the IUT adjusts to maximum power if required and sends:
	  - either a RNG-REQ with Ranging Anomalies = "SS already at maximum power" in the Data grant (see note); or
	  - a RNG-REQ with Ranging Anomalies = "SS already at maximum power" and a DATA PDU in the Data grant.

Test strategy	
Notes	It is implicit that there are stuff bytes or a padding PDU in the remainder of the burst filled by the RNG-REQ.

TP ID	TP/SS/RLC/PRNG/BV-H035
IEEE 802.16 Reference	
PICS Item	
Initial Condition	IUT is operational. The UL data flow is established with no data pending transfer or being transferred. IUT is transmitting at or near maximum power.
Expected Behaviour	Check that: On receiving a Power Control IE to increase power above the IUT's maximum power followed by a Data grant, the IUT adjusts to maximum power if required and sends a RNG-REQ with Ranging Anomalies = "SS already at maximum power" in the grant.
Test strategy	
Notes	

TP ID	TP/SS/RLC/PRNG/BV-H037
IEEE 802.16 Reference	
PICS Item	
Initial Condition	IUT is operational. The UL data flow is established. IUT is transmitting UL data at or near minimum power.

Expected Behaviour	Check that: On receiving a Power Control IE to decrease power below the IUT's minimum power followed by a Data grant, the IUT adjusts to minimum power if required and sends:
	  - either a RNG-REQ with Ranging Anomalies = "SS already at minimum power" in the Data grant (see note); or
	  - a RNG-REQ with Ranging Anomalies = "SS already at minimum power" and a DATA PDU in the Data grant.

Test strategy	
Notes	It is implicit that there are stuff bytes or a padding PDU in the remainder of the burst filled by the RNG-REQ.

TP ID	TP/SS/RLC/PRNG/BV-H038
IEEE 802.16 Reference	
PICS Item	
Initial Condition	IUT is operational. The UL data flow is established with no data pending transfer or being transferred. IUT is transmitting at or near minimum power.
Expected Behaviour	Check that: On receiving a Power Control IE to decrease power below the IUT's minimum power followed by a Data grant, the IUT adjusts to minimum power if required and sends a RNG-REQ with Ranging Anomalies = "SS already at minimum power" in the grant.
Test strategy	
Notes	

TP ID	TP/SS/RLC/PRNG/BV-H039
IEEE 802.16 Reference	
PICS Item	
Initial Condition	IUT is operational. The UL data flow is established. IUT is transmitting UL data at or near maximum power.
Expected Behaviour	Check that: On receiving a Power Control IE to increase power above the IUT's maximum power followed by an Invited Ranging Opportunity, the IUT adjusts to maximum power if required and sends a RNG-REQ with Ranging Anomalies = "SS already at maximum power" in the opportunity.
Test strategy	
Notes	IUT continues transmitting data on Data grants.

TP ID	TP/SS/RLC/PRNG/BV-H040
IEEE 802.16 Reference	
PICS Item	
Initial Condition	IUT is operational. The UL data flow is established. IUT is transmitting UL data at or near minimum power.
Expected Behaviour	Check that: On receiving a Power Control IE to decrease power below the IUT's minimum power followed by an Invited Ranging Opportunity, the IUT adjusts to minimum power if required and sends a RNG-REQ with Ranging Anomalies = "SS already at minimum power" in the opportunity.
Test strategy	
Notes	

TP ID	TP/SS/RLC/PRNG/TI-H000
IEEE 802.16 Reference	clause 6.3.10.2, paragraph 2 (2)
PICS Item	
Initial Condition	IUT is operational. IUT has received an uplink data grant UIUC = (5 to 12) or invited ranging opportunity UIUC = (1) and started T4.
Expected Behaviour	Check that: On T4 expiry without receiving any Data grants or Invited Ranging Opportunities, the IUT re-initializes its MAC layer and restarts its MAC operations.
Test strategy	
Notes	

TP ID	TP/SS/RLC/PRNG/BV-H100
IEEE 802.16 Reference	
PICS Item	
Initial Condition	IUT is operational. An UL data flow is established with data being sent.
Expected Behaviour	Check that: On receiving a RNG-RSP message to change the Tx frequency offset with Status = Continue that does not cause Ranging Anomalies followed by a Data grant, the IUT implements the RNG-RSP's frequency changes, stops sending data, and transmits a short preamble with: - either a RNG-REQ without anomalies (see note); or - a padding PDU; or - stuff bytes.
Test strategy	
Notes	It is implicit that there are stuff bytes or a padding PDU in the remainder of the burst filled by the RNG-REQ.

TP ID	TP/SS/RLC/PRNG/BV-H101
IEEE 802.16 Reference	
PICS Item	
Initial Condition	IUT is operational. An UL data flow is established with data being sent.

Expected Behaviour	Check that: On receiving a RNG-RSP message to change the frequency with Status = Continue that does not cause Ranging Anomalies followed by an Invited Ranging opportunity, the IUT implements the RNG-RSP's frequency adjustments, stops sending data, and transmits a long preamble with:
	    - either a RNG-REQ without anomalies (see note); or
	    - a padding PDU; or
	    - stuff bytes.

Test strategy	
Notes	It is implicit that there are stuff bytes or a padding PDU in the remainder of the burst filled by the RNG-REQ.

5.3.2.3   Downlink Burst Profile Management (DBPC)

5.3.2.3.1   To a Less Robust Profile (LRP)

TP ID	TP/SS/RLC/DBPC/LRP/BV-H000
IEEE 802.16 Reference	clause 6.3.10.1 Figure "State transition diagram for downlink burst profile management-SS" Figure "Transition to a less robust operational burst profile"
PICS Item	
Initial Condition	The IUT is operational and receiving data on a DL data transport connection with a burst profile more or equally robust as the Downlink Burst Profile defined by DIUC Y.
Expected Behaviour	Check that: On receiving data at a CINR that is high enough to receive data at a less robust profile denoted by DIUC Z, the IUT transmits in a data grant a valid DBPC-REQ containing the DIUC field set to DIUC Z. The IUT monitors the DL data on a DIUC more or equally robust as DIUC Z.
Test strategy	
Notes	

TP ID	TP/SS/RLC/DBPC/LRP/BV-H001
IEEE 802.16 Reference	clause 6.3.10.1 Figure "State transition diagram for downlink burst profile management-SS" Figure "Transition to a less robust operational burst profile"
PICS Item	
Initial Condition	The IUT is operational and receiving data on a DL data transport connection with a burst profile more or equally robust as the Downlink Burst Profile defined by DIUC Y. On receiving data at a CINR that is high enough to receive data at a less robust profile denoted by DIUC Z, the IUT has transmitted in a data grant a valid DBPC-REQ containing the DIUC field set to DIUC Z. The IUT is monitoring the DL data on a DIUC more or equally robust as DIUC Z.
Expected Behaviour	Check that: On receiving a valid DBPC-RSP with the DIUC field set to DIUC Z, the IUT sets the operational burst profile to DIUC Z and monitors the DL data having a burst profile more or equally robust as DIUC Z.
Test strategy	
Notes	

TP ID	TP/SS/RLC/DBPC/LRP/BV-H002
IEEE 802.16 Reference	clause 6.3.10.1 Figure "State transition diagram for downlink burst profile management-SS" Figure "Transition to a less robust operational burst profile"
PICS Item	
Initial Condition	The IUT is operational and receiving data on a DL data transport connection with burst profile DIUC Y. On receiving data at a CINR that is high enough to receive data at a less robust profile denoted by DIUC Z, the IUT has transmitted in a data grant a valid DBPC-REQ containing the DIUC field set to DIUC Z. The IUT is monitoring the DL data on a DIUC more or equally robust as DIUC Z.
Expected Behaviour	Check that: On receiving a valid DBPC-RSP with the DIUC field set to DIUC Y, the IUT resets the operational burst profile to DIUC Y and monitors the DL data having a burst profile more or equally robust as DIUC Y.
Test strategy	
Notes	

TP ID	TP/SS/RLC/DBPC/LRP/TI-H000
IEEE 802.16 Reference	clause 6.3.10.1 Figure "State transition diagram for downlink burst profile management-SS" Figure "Transition to a less robust operational burst profile"
PICS Item	
Initial Condition	The IUT is operational and receiving data on a DL data transport connection with burst profile DIUC Y. On receiving data at a CINR that is high enough to receive data at a less robust profile denoted by DIUC Z, the IUT has transmitted in a data grant a valid DBPC-REQ containing the DIUC field set to DIUC Z. The IUT is monitoring the DL data on a DIUC more or equally robust as DIUC Z. On receiving a valid DBPC-RSP with the DIUC field set to DIUC Y, the IUT has reset the operational burst profile to DIUC Y, is monitoring the DL data having a burst profile more or equally robust as DIUC Y, and has started T28.
Expected Behaviour	Check that: On receiving data before T28 expiry at a CINR that is high enough to receive data at a less robust profile denoted by DIUC Z, the IUT continues to monitor data having a burst profile more or equally robust as DIUC Y and does not transmit a valid DBPC-REQ.
Test strategy	
Notes	

TP ID	TP/SS/RLC/DBPC/LRP/TI-H001
IEEE 802.16 Reference	clause 6.3.10.1 Figure "State transition diagram for downlink burst profile management-SS" Figure "Transition to a less robust operational burst profile"
PICS Item	
Initial Condition	The IUT is operational and receiving data on a DL data transport connection with burst profile DIUC Y. On receiving data at a CINR that is high enough to receive data at a less robust profile denoted by DIUC Z, the IUT has transmitted in a data grant a valid DBPC-REQ containing the DIUC field set to DIUC Z. The IUT is monitoring the DL data on a DIUC more or equally robust as DIUC Z. On receiving a valid DBPC-RSP with the DIUC field set to DIUC Y, the IUT has reset the operational burst profile to DIUC Y, is monitoring the DL data having a burst profile more or equally robust as DIUC Y, and has started T28. On receiving data before T28 expiry at a CINR that is high enough to receive data at a less robust profile denoted by DIUC Z, the IUT continues to monitor data having a burst profile more or equally robust as DIUC Y and has not transmitted a valid DBPC-REQ.
Expected Behaviour	Check that: On T28 expiry, the IUT transmits a valid DBC-REQ containing the DIUC field set to DIUC Z. The IUT monitors the DL data on a DIUC more or equally robust as DIUC Z.
Test strategy	
Notes	

TP ID	TP/SS/RLC/DBPC/LRP/TI-H002
IEEE 802.16 Reference	clause 6.3.10.1 Figure "State transition diagram for downlink burst profile management-SS" Figure "Transition to a less robust operational burst profile"
PICS Item	
Initial Condition	The IUT is operational and receiving data on a DL data transport connection with burst profile DIUC Y. On receiving data at a CINR that is high enough to receive data at a less robust profile denoted by DIUC Z, the IUT has transmitted in a data grant a valid DBPC-REQ containing the DIUC field set to DIUC Z. The IUT is monitoring the DL data on a DIUC more or equally robust as DIUC Z and has started T30.
Expected Behaviour	Check that: On expiry of T30 without receiving a valid DBPC-RSP, the IUT sets the operational burst profile to DIUC Y and monitors the DL data having a burst profile more or equally robust as DIUC Y.
Test strategy	
Notes	

5.3.2.3.2   To a More Robust Profile (MRP)

TP ID	TP/SS/RLC/DBPC/MRP/BV-H000
IEEE 802.16 Reference	clause 6.3.10.1 Figure "State transition diagram for downlink burst profile management-SS" Figure "Transition to a more robust operational burst profile"
PICS Item	
Initial Condition	The IUT is operational and receiving data on a DL data transport connection with a burst profile more or equally robust as the Downlink Burst Profile defined by DIUC Y.

Expected Behaviour	Check that: On receiving data at a CINR that is low enough to receive data at a more robust profile denoted by DIUC X:
	    - either the IUT transmits in a data grant a valid DBPC-REQ containing the DIUC field set to DIUC X. The IUT continues to monitor the DL data on a DIUC more or equally robust as DIUC Y;
	    - or the IUT transmits in an Initial Ranging Interval a valid RNG-REQ containing the DIUC field set to DIUC X. The IUT continues to monitor the DL data on a DIUC more or equally robust as DIUC Y.

Test strategy	
Notes	

TP ID	TP/SS/RLC/DBPC/MRP/BV-H100
IEEE 802.16 Reference	clause 6.3.10.1 Figure "State transition diagram for downlink burst profile management-SS" Figure "Transition to a more robust operational burst profile"
PICS Item	
Initial Condition	The IUT is operational and receiving data on a DL data transport connection with a burst profile more or equally robust as the Downlink Burst Profile defined by DIUC Y. On receiving data at a CINR that is low enough to receive data at a more robust profile denoted by DIUC X, the IUT has transmitted in a data grant a valid DBPC-REQ containing the DIUC field set to DIUC X. The IUT is monitoring the DL data on a DIUC more or equally robust as DIUC Y.
Expected Behaviour	Check that: On receiving a valid DBPC-RSP message containing the DIUC field set to DIUC X, the IUT changes the operational burst profile to DIUC X and processes data on a burst profile more or equally robust as the DIUC X profile.
Test strategy	
Notes	

TP ID	TP/SS/RLC/DBPC/MRP/BV-H101
IEEE 802.16 Reference	clause 6.3.10.1 Figure "State transition diagram for downlink burst profile management-SS" Figure "Transition to a more robust operational burst profile"
PICS Item	
Initial Condition	The IUT is operational and receiving data on a DL data transport connection with a burst profile more or equally robust as the Downlink Burst Profile defined by DIUC Y. On receiving data at a CINR that is low enough to receive data at a more robust profile denoted by DIUC X, the IUT has transmitted in a data grant a valid DBPC-REQ containing the DIUC field set to DIUC X. The IUT is monitoring the DL data on a DIUC more or equally robust as DIUC Y.
Expected Behaviour	Check that: On receiving a valid DBPC-RSP message containing the DIUC field set to DIUC Y, the IUT keeps the operational burst profile at DIUC Y and processes data on a burst profile more or equally robust as the DIUC Y profile.
Test strategy	
Notes	

TP ID	TP/SS/RLC/DBPC/MRP/BV-H200
IEEE 802.16 Reference	clause 6.3.10.1 Figure "State transition diagram for downlink burst profile management-SS" Figure "Transition to a more robust operational burst profile"
PICS Item	
Initial Condition	The IUT is operational and receiving data on a DL data transport connection with a burst profile more or equally robust as the Downlink Burst Profile defined by DIUC Y. On receiving data at a CINR that is low enough to receive data at a more robust profile denoted by DIUC X, the IUT has transmitted in an Initial Ranging Interval a valid RNG-REQ containing the DIUC field set to DIUC X. The IUT is monitoring the DL data on a DIUC more or equally robust as DIUC Y.
Expected Behaviour	Check that: On receiving a valid RNG-RSP message containing the DIUC field set to DIUC X, the IUT changes the operational burst profile to DIUC X and processes data on a burst profile more or equally robust as the DIUC X profile.
Test strategy	
Notes	

TP ID	TP/SS/RLC/DBPC/MRP/BV-H201
IEEE 802.16 Reference	clause 6.3.10.1 Figure "State transition diagram for downlink burst profile management-SS" Figure "Transition to a more robust operational burst profile"
PICS Item	
Initial Condition	The IUT is operational and receiving data on a DL data transport connection with a burst profile more or equally robust as the Downlink Burst Profile defined by DIUC Y. On receiving data at a CINR that is low enough to receive data at a more robust profile denoted by DIUC X, the IUT has transmitted in an Initial Ranging Interval a valid RNG-REQ containing the DIUC field set to DIUC X. The IUT is monitoring the DL data on a DIUC more or equally robust as DIUC Y.
Expected Behaviour	Check that: On receiving a valid RNG-RSP message containing the DIUC field set to DIUC Y, the IUT keeps the operational burst profile at DIUC Y and processes data on a burst profile more or equally robust as the DIUC Y profile.
Test strategy	
Notes	

TP ID	TP/SS/RLC/DBPC/MRP/TI-H100
IEEE 802.16 Reference	clause 6.3.10.1 Figure "State transition diagram for downlink burst profile management-SS" Figure "Transition to a more robust operational burst profile"
PICS Item	
Initial Condition	The IUT is operational and receiving data on a DL data transport connection with a burst profile more or equally robust as the Downlink Burst Profile defined by DIUC Y. On receiving data at a CINR that is low enough to receive data at a more robust profile denoted by DIUC X, the IUT has transmitted in a data grant a valid DBPC-REQ containing the DIUC field set to DIUC X. The IUT monitors the DL data on a DIUC more or equally robust as DIUC Y. The IUT then received a valid DBPC-RSP message containing the DIUC field set to DIUC Y, keeps the operational burst profile at DIUC Y, processes data on a burst profile more or equally robust as the DIUC Y profile, and starts T29.
Expected Behaviour	Check that: On receiving data before T29 expiry at a CINR that is low enough to receive data at a more robust profile denoted by DIUC X, the IUT continues to monitor data having a burst profile more or equally robust as DIUC Y and does not transmit a valid DBPC-REQ or RNG-REQ.
Test strategy	
Notes	

TP ID	TP/SS/RLC/DBPC/MRP/TI-H101
IEEE 802.16 Reference	clause 6.3.10.1 Figure "State transition diagram for downlink burst profile management-SS" Figure "Transition to a more robust operational burst profile"
PICS Item	
Initial Condition	The IUT is operational and receiving data on a DL data transport connection with a burst profile more or equally robust as the Downlink Burst Profile defined by DIUC Y. On receiving data at a CINR that is low enough to receive data at a more robust profile denoted by DIUC X, the IUT has transmitted in a data grant a valid DBPC-REQ containing the DIUC field set to DIUC X. The IUT monitors the DL data on a DIUC more or equally robust as DIUC Y. The IUT then received a valid DBPC-RSP message containing the DIUC field set to DIUC Y, keeps the operational burst profile at DIUC Y, processes data on a burst profile more or equally robust as the DIUC Y profile, and starts T29.

Expected Behaviour	Check that: After T29 expiry and on receiving data at a CINR that is low enough to receive data at a more robust profile denoted by DIUC X
	  - either the IUT transmits in a data grant a valid DBPC-REQ containing the DIUC field set to DIUC X. The IUT continues to monitor the DL data on a DIUC more or equally robust as DIUC Y;or
	  - the IUT transmits in an Initial Ranging Interval a valid RNG-REQ containing the DIUC field set to DIUC X. The IUT continues to monitor the DL data on a DIUC more or equally robust as DIUC Y.

Test strategy	
Notes	

TP ID	TP/SS/RLC/DBPC/MRP/TI-H102
IEEE 802.16 Reference	clause 6.3.10.1 Figure "State transition diagram for downlink burst profile management-SS" Figure "Transition to a more robust operational burst profile"
PICS Item	
Initial Condition	The IUT is operational and receiving data on a DL data transport connection with burst profile DIUC Y. On receiving data at a CINR that is low enough to receive data at a more robust profile denoted by DIUC X, the IUT has transmitted in a data grant a valid DBPC-REQ containing the DIUC field set to DIUC X. The IUT is monitoring the DL data on a DIUC more or equally robust as DIUC Y and has started T30.
Expected Behaviour	Check that: On expiry of T30 without receiving a valid DBPC-RSP, the IUT sets the operational burst profile to DIUC Y and monitors the DL data having a burst profile more or equally robust as DIUC Y.
Test strategy	
Notes	

TP ID	TP/SS/RLC/DBPC/MRP/TI-H200
IEEE 802.16 Reference	clause 6.3.10.1 Figure "State transition diagram for downlink burst profile management-SS" Figure "Transition to a more robust operational burst profile"
PICS Item	
Initial Condition	The IUT is operational and receiving data on a DL data transport connection with a burst profile more or equally robust as the Downlink Burst Profile defined by DIUC Y. On receiving data at a CINR that is low enough to receive data at a more robust profile denoted by DIUC X, the IUT has transmitted in a data grant a valid RNG-REQ containing the DIUC field set to DIUC X. The IUT monitors the DL data on a DIUC more or equally robust as DIUC Y. The IUT then received a valid RNG-RSP message containing the DIUC field set to DIUC Y, keeps the operational burst profile at DIUC Y, processes data on a burst profile more or equally robust as the DIUC Y profile, and starts T29.
Expected Behaviour	Check that: On receiving data before T29 expiry at a CINR that is low enough to receive data at a more robust profile denoted by DIUC X, the IUT continues to monitor data having a burst profile more or equally robust as DIUC Y and does not transmit a valid DBPC-REQ or RNG-REQ.
Test strategy	
Notes	

TP ID	TP/SS/RLC/DBPC/MRP/TI-H201
IEEE 802.16 Reference	clause 6.3.10.1 Figure "State transition diagram for downlink burst profile management-SS" Figure "Transition to a more robust operational burst profile"
PICS Item	
Initial Condition	The IUT is operational and receiving data on a DL data transport connection with a burst profile more or equally robust as the Downlink Burst Profile defined by DIUC Y. On receiving data at a CINR that is low enough to receive data at a more robust profile denoted by DIUC X, the IUT has transmitted in a data grant a valid RNG-REQ containing the DIUC field set to DIUC X. The IUT monitors the DL data on a DIUC more or equally robust as DIUC Y. The IUT then received a valid RNG-RSP message containing the DIUC field set to DIUC Y, keeps the operational burst profile at DIUC Y, processes data on a burst profile more or equally robust as the DIUC Y profile, and starts T29.
Expected Behaviour	Check that: After T29 expiry and on receiving data at a CINR that is low enough to receive data at a more robust profile denoted by DIUC X: - either the IUT transmits in a data grant a valid DBPC-REQ containing the DIUC field set to DIUC X. The IUT continues to monitor the DL data on a DIUC more or equally robust as DIUC Y; or - the IUT transmits in an Initial Ranging Interval a valid RNG-REQ containing the DIUC field set to DIUC X. The IUT continues to monitor the DL data on a DIUC more or equally robust as DIUC Y.
Test strategy	
Notes	

TP ID	TP/SS/RLC/DBPC/MRP/TI-H202
IEEE 802.16 Reference	clause 6.3.10.1 Figure "State transition diagram for downlink burst profile management-SS" Figure "Transition to a more robust operational burst profile"
PICS Item	
Initial Condition	The IUT is operational and receiving data on a DL data transport connection with burst profile DIUC Y. On receiving data at a CINR that is low enough to receive data at a more robust profile denoted by DIUC X, the IUT has transmitted in a data grant a valid RNG-REQ containing the DIUC field set to DIUC X. The IUT is monitoring the DL data on a DIUC more or equally robust as DIUC Y and has started T3.
Expected Behaviour	Check that: On expiry of T3 without receiving a valid RNG-RSP, the IUT sets the operational burst profile to DIUC Y and monitors the DL data having a burst profile more or equally robust as DIUC Y.
Test strategy	
Notes	

5.3.2.4   Negotiate Basic Capabilities (SBC)

TP ID	TP/SS/RLC/SBC/BV-H000
IEEE 802.16 Reference	clause 6.3.9.7
PICS Item	
Initial Condition	The IUT has completed Initial Ranging.
Expected Behaviour	Check that: The IUT transmits a valid SBC-REQ on its Basic CID containing the Physical Parameters and Bandwidth Allocation Support.
Test strategy	Straightforward.
Notes	

TP ID	TP/SS/RLC/SBC/BV-H001
IEEE 802.16 Reference	clauses 6.3.2.3.24 and 6.3.9.7
PICS Item	
Initial Condition	The IUT has completed Initial Ranging and has transmitted a valid SBC-REQ on its Basic CID containing the Physical Parameters and Bandwidth Allocation Support.

Expected Behaviour	Check that: On receiving an SBC-RSP containing an identical set of the IUT's SBC-REQ capabilities parameters set to "on", the IUT transmits:
	    - either valid AUTH-INFO and AUTH-REQ; or
	    - a REG-REQ when Authorization is unsupported.

Test strategy	Check that: On receiving an SBC-RSP containing an identical set of the IUT's SBC-REQ capabilities parameters set to "on", the IUT transmits:
	    - either valid AUTH-INFO and AUTH-REQ; or
	    - a REG-REQ when Authorization is unsupported.

Notes	

TP ID	TP/SS/RLC/SBC/BV-H002
	Replaced by TP/SS/RLC/SBC/BV-H004

TP ID	TP/SS/RLC/SBC/BV-H003
	Deleted

TP ID	TP/SS/RLC/SBC/BV-H004
IEEE 802.16 Reference	clauses 6.3.2.3.24 and 6.3.9.7, paragraph 1 Figure "Wait for SBC-RSP - SS"
PICS Item	
Initial Condition	The IUT has completed Initial Ranging and has transmitted a valid SBC-REQ on its Basic CID containing the Physical Parameters and Bandwidth Allocation Support. Authorization is supported.
Expected Behaviour	Check that: On receiving a valid SBC-RSP, the IUT transmits valid AUTH-INFO and AUTH-REQ.
Test strategy	
Notes	

TP ID	TP/SS/RLC/SBC/BV-H100
IEEE 802.16 Reference	clause 11.1.1
PICS Item	
Initial Condition	The IUT has just finished Initial Ranging and its current transmitted power is outside the range -64 dBm to 63,5 dBm.
Expected Behaviour	Check that: On sending the SBC-REQ, the IUT assigns the closest of these extremes to the Current Transmit Power in the SBC-REQ.
Test strategy	
Notes	

TP ID	TP/SS/RLC/SBC/BV-H101
IEEE 802.16 Reference	clause 11.8.3.2
PICS Item	
Initial Condition	The IUT does not support QAM64 and has just finished Initial Ranging.
Expected Behaviour	Check that: On sending the SBC-REQ, the IUT sets Byte 3 of the Maximum Power TLV to zero (QAM64 not supported).
Test strategy	
Notes	

TP ID	TP/SS/RLC/SBC/TI-H000
IEEE 802.16 Reference	clauses 6.3.2.3.23 and 24 Figure "Wait for SBC-RSP - SS" Table "Parameters and Constants" SBC Request Retries
PICS Item	
Initial Condition	IUT has just finished Initial Ranging, sent a valid SBC-REQ, and started T18.
Expected Behaviour	Check that: Each time T18 expires for SBC Request Retries without receiving a valid SBC-RSP, the IUT retransmits the SBC-REQ and restarts T18.
Test strategy	
Notes	

TP ID	TP/SS/RLC/SBC/TI-H001
IEEE 802.16 Reference	clauses 6.3.2.3.23 and 24 Figure "Wait for SBC-RSP - SS" Table "Parameters and Constants" SBC Request Retries
PICS Item	
Initial Condition	IUT has finished Ranging, started Basic Capabilities negotiation, and re-transmitted the SBC-REQ for SBC Request Retries without receiving any SBC-RSP. IUT has re-started T18.
Expected Behaviour	Check that: After T18 expiry, the IUT re-initializes the MAC layer.
Test strategy	
Notes	All retries are exhausted and after T18 expires, the IUT re-initializes the MAC.

5.3.3   Registration, IP Connectivity, and Parameter Transfer (INI)

5.3.3.1   Registration (REG)

TP ID	TP/SS/INI/REG/BV-H000
IEEE 802.16 Reference	clauses 6.3.2.3.7 and 6.3.9.9
PICS Item	A.27/1
Initial Condition	The IUT is initializing and has negotiated Basic Capabilities where SS Authorization and Key Exchange are not required.
Expected Behaviour	Check that: On receiving an UL bandwidth grant, the IUT sends a valid REG-REQ message on the Primary CID containing at a minimum the SS Management Support, the IP Management Mode, the Uplink CID Support, and the HMAC tuple TLVs.
Test strategy	1) Perform initialization. During the SBC transaction, the TE sets Authorization Policy Support to "Not Supported" (paragraph 11.8.5). 2) Straightforward hereafter assuming that Authorization and Key Exchange are not required.
Notes	

TP ID	TP/SS/INI/REG/BV-H001
IEEE 802.16 Reference	clauses 6.3.2.3.7 and 6.3.9.9
PICS Item	
Initial Condition	The IUT is initializing and has negotiated SS Authorization and Key Exchange.
Expected Behaviour	Check that: On receiving an UL bandwidth grant, the IUT sends a valid REG-REQ message on the Primary CID containing at a minimum the SS Management Support, the IP Management Mode, the Uplink CID Support, and the HMAC tuple TLVs.
Test strategy	
Notes	

TP ID	TP/SS/INI/REG/BV-H002
	Deleted

TP ID	TP/SS/INI/REG/BV-H003
IEEE 802.16 Reference	clause 11.1.5, paragraph 2
PICS Item	
Initial Condition	IUT is starting Registration.
Expected Behaviour	Check that: On sending a REG-REQ containing a Vendor ID TLV, the ID assigned to the IUT's Vendor is the value in the Vendor ID TLV.
Test strategy	
Notes	Vendor ID TLV is optional.

TP ID	TP/SS/INI/REG/BV-H004
IEEE 802.16 Reference	clause 6.3.2.3.7
PICS Item	
Initial Condition	IUT is a managed SS and Authorization is complete.
Expected Behaviour	Check that: To request fragmentation and ARQ for the Secondary Management connection, the IUT transmits a REG-REQ containing the ARQ Parameters.
Test strategy	
Notes	

TP ID	TP/SS/INI/REG/BI-H000
IEEE 802.16 Reference	clauses 6.3.2.3.7 and 6.3.2.3.8, paragraph 3 "Response" Figure "Wait for REG-RSP - SS"
PICS Item	
Initial Condition	IUT is in Registration and has sent a valid REG-REQ.
Expected Behaviour	Check that: On receiving a REG-RSP containing an invalid HMAC value, the IUT retransmits the REG-REQ.
Test strategy	
Notes	

TP ID	TP/SS/INI/REG/BI-H001
IEEE 802.16 Reference	clause 11.1.6, paragraph 1
PICS Item	
Initial Condition	IUT has started Registration and sent a REG-REQ.
Expected Behaviour	Check that: On receiving a REG-RSP containing a Vendor-specific Information Compound TLV whose first TLV is not of Vendor ID type, the IUT discards the Vendor-specific Information Compound TLV.
Test strategy	
Notes	

TP ID	TP/SS/INI/REG/TI-H000
IEEE 802.16 Reference	Figure "Wait for REG-RSP - SS" Table "Parameters and Constants""T6"
PICS Item	
Initial Condition	IUT is in Registration, has sent a valid REG-REQ, and started T6.
Expected Behaviour	Check that: After T6 expiry without receiving a REG-RSP, the IUT retransmits the REG-REQ.
Test strategy	
Notes	

TP ID	TP/SS/INI/REG/TI-H001
IEEE 802.16 Reference	Figure "Wait for REG-RSP - SS" Table "Parameters and Constants" "Registration Request Retries" and "T6"
PICS Item	
Initial Condition	IUT is in Registration, has sent a valid REG-REQ and started T6.
Expected Behaviour	Check that: For Registration Request Retries, each time the IUT does not receive a REG-RSP and T6 expires, the IUT retransmits the REG-REQ and restarts T6.
Test strategy	
Notes	

TP ID	TP/SS/INI/REG/TI-H002
IEEE 802.16 Reference	Figure "Wait for REG-RSP - SS" Table "Parameters and Constants" "Registration Request Retries"
PICS Item	
Initial Condition	IUT is in Registration, has sent a valid REG-REQ, and started T6.
Expected Behaviour	Check that: After Registration Request Retries of T6 expiry and resending the REG-REQ without receiving a REG-RSP, the IUT reinitializes its MAC layer.
Test strategy	
Notes	

TP ID	TP/SS/INI/REG/TI-H003
IEEE 802.16 Reference	Figure "Wait for REG-RSP - SS" Table "Parameters and Constants" "Registration Request Retries"
PICS Item	
Initial Condition	IUT is in Registration, has sent a valid REG-REQ.
Expected Behaviour	Check that: For Registration Request Retries, each time the IUT receives a REG-RSP containing an invalid HMAC value, the IUT retransmits the REG-REQ.
Test strategy	
Notes	

TP ID	TP/SS/INI/REG/TI-H004
IEEE 802.16 Reference	Figure "Wait for REG-RSP - SS" Table "Parameters and Constants" "Registration Request Retries"
PICS Item	
Initial Condition	IUT is in Registration, has sent a valid REG-REQ. For Registration Request Retries, each time the IUT received a REG-RSP containing an invalid HMAC value, the IUT retransmitted the REG-REQ.
Expected Behaviour	Check that: On receiving a REG-RSP containing an invalid HMAC value, the IUT reinitializes its MAC layer.
Test strategy	
Notes	

5.3.3.2 IP Connectivity (IPC)

TP ID	TP/SS/INI/IPC/BV-H000
IEEE 802.16 Reference	clause 6.3.9.10 Table "Establishing IP Connectivity"
PICS Item	
Initial Condition	IUT is authorized and registered. A Secondary Management Connection is required. The IUT has sent a valid REG-REQ.
Expected Behaviour	Check that: On receiving a valid REG-RSP, the IUT establishes the Secondary Management Connections and sends a valid DHCP-Discover message on this connection.
Test strategy	
Notes	

TP ID	TP/SS/INI/IPC/BV-H001
IEEE 802.16 Reference	clause 6.3.9.11
PICS Item	
Initial Condition	IUT is authorized, registered and has an IP-address.
Expected Behaviour	Check that: The IUT invokes the Time Protocol above UDP with the Time Server over Secondary Management Connection.
Test strategy	
Notes	

TP ID	TP/SS/INI/IPC/BV-H002
IEEE 802.16 Reference	clause 6.3.9.12
PICS Item	
Initial Condition	IUT is authorized, registered, has an IP-address and Time of Day is initialized.
Expected Behaviour	Check that: The IUT downloads the SS Configuration file at the TFTP server over the Secondary Management Connection.
Test strategy	
Notes	

TP ID	TP/SS/INI/IPC/BV-H003
IEEE 802.16 Reference	clause 6.3.9.12
PICS Item	
Initial Condition	IUT is authorized, registered, has an IP-address and Time of Day is initialized. The IUT has terminated the download of the configuration file.
Expected Behaviour	Check that: To complete the download of the configuration file, the IUT sends a TFTP-CPLT message.
Test strategy	
Notes	

TP ID	TP/SS/INI/IPC/BV-H004
IEEE 802.16 Reference	clauses 6.3.9.12 and 9.2.1
PICS Item	
Initial Condition	IUT is authorized, registered, has an IP-address and Time of Day is initialized. 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.
Expected Behaviour	Check that: The IUT ignores the configurations settings that cannot be interpreted.
Test strategy	
Notes	

TP ID	TP/SS/INI/IPC/BV-H005
IEEE 802.16 Reference	clauses 6.3.9.12 and 9.2.1
PICS Item	
Initial Condition	IUT is authorized, registered, has an IP-address and Time of Day is initialized. The IUT downloads the SS Configuration file at the TFTP server on the Secondary Management Connection.
Expected Behaviour	Check that: The IUT supports at a minimum an 8192 byte configuration file.
Test strategy	
Notes	

TP ID	TP/SS/INI/IPC/BV-H006
IEEE 802.16 Reference	clauses 6.3.9.12 and 9.2.1
PICS Item	
Initial Condition	IUT is authorized, registered, has an IP-address and Time of Day is initialized. The IUT downloads the SS Configuration file at the TFTP server on the Secondary Management Connection.
Expected Behaviour	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.
Test strategy	
Notes	

TP ID	TP/SS/INI/IPC/BV-H007
IEEE 802.16 Reference	clauses 6.3.9.12 and 9.2.1
PICS Item	
Initial Condition	IUT is authorized, registered, has an IP-address and Time of Day is initialized. 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.
Expected Behaviour	Check that: The IUT discards the configuration file.
Test strategy	
Notes	

TP ID	TP/SS/INI/IPC/TI-H000
IEEE 802.16 Reference	clauses 6.3.2.3.28-29 and 6.3.9.12
PICS Item	
Initial Condition	IUT is authorized, registered, has an IP-address and Time of Day is initialized. The IUT has terminated the download of the configuration file and has informed the SS of the completion by sending a TFTP-CPLT message.
Expected Behaviour	Check that: On expiry of timer T26 and having not received a TFTP-RSP message, the IUT resends the TFTP-CPLT message each time for TFTP Request Retries times.
Test strategy	
Notes	

TP ID	TP/SS/INI/IPC/TI-H001
IEEE 802.16 Reference	clauses 6.3.2.3.28-29 and 6.3.9.12
PICS Item	
Initial Condition	IUT is authorized, registered, has an IP-address and Time of Day is initialized. The IUT has terminated the download of the configuration file and has informed the SS of the completion by sending a TFTP-CPLT message.
Expected Behaviour	Check that: On expiry of timer T26 and after TFTP Request Retries number of retransmission of the TFTP-CPLT message, the IUT resets and starts over.
Test strategy	
Notes	

5.3.4   Privacy and Key Management (PKM)

5.3.4.1   Authentication/Authorization (AUTH)

5.3.4.1.1   Initialization (INIT)

TP ID	TP/SS/PKM/AUTH/INIT/BV-H000
IEEE 802.16 Reference	clause 7.2.4.5, 1-A
PICS Item	
Initial Condition	IUT is initializing.
Expected Behaviour	Check that: On completion of Basic Capabilities negotiation, the IUT transmits a valid Auth Info message followed by a valid Auth Request message.
Test strategy	
Notes	

TP ID	TP/SS/PKM/AUTH/INIT/BV-H001
IEEE 802.16 Reference	clause 7.2.4.5, 4-B Figure "TEK state machine flow diagram"
PICS Item	
Initial Condition	IUT has begun Authorization and sent a valid Auth Info and Auth Request messages.
Expected Behaviour	Check that: On receiving an Auth Reply, the IUT goes to the Authorized State and sends one Key request message for each SAID in the Auth Reply.
Test strategy	
Notes	

TP ID	TP/SS/PKM/AUTH/INIT/BV-H100
IEEE 802.16 Reference	clause 7.2.4.5, 2-B Table "Operational ranges for privacy configuration settings" "Authorize Reject Wait Timeout"
PICS Item	
Initial Condition	Basic Capabilities Negotiation is completed. The IUT has transmitted a valid Auth Info message followed by a valid Auth Request message and started T_AuthWait (the IUT is now in the Auth Wait state).
Expected Behaviour	Check that: On receiving an Auth Reject message (no permanent error), the IUT waits at a minimum until Authorize Reject Wait expiry and then retransmits the Auth Info and the Auth Request.
Test strategy	
Notes	

TP ID	TP/SS/PKM/AUTH/INIT/BV-H101
IEEE 802.16 Reference	clauses 7.2.4.5, 3-B and 7.2.4.3 "Permanent Authorization Reject" 2
PICS Item	
Initial Condition	Negotiate Basic Capabilities is completed. The IUT has transmitted a valid Auth Info message followed by a valid Auth Request message.
Expected Behaviour	Check that: On receiving an Auth Reject message with a failure due to a permanent error condition, the IUT continues to respond to management messages.
Test strategy	
Notes	

TP ID	TP/SS/PKM/AUTH/INIT/TI-H000
IEEE 802.16 Reference	clause 7.2.4.5, 5-B Table "Operational ranges for privacy configuration settings" "Authorize Wait Timeout"
PICS Item	
Initial Condition	Negotiate Basic Capabilities is completed. The IUT has transmitted a valid Auth Info message followed by a valid Auth Request message and started T_AuthWait.
Expected Behaviour	Check that: On T_AuthWait expiry without receiving an Auth Reject or Perm Auth Reject, the IUT retransmits the Auth Info followed by the Auth Request.
Test strategy	
Notes	

TP ID	TP/SS/PKM/AUTH/INIT/TI-H001
IEEE 802.16 Reference	clause 7.2.4.5, 5-B Table "Operational ranges for privacy configuration settings" "Authorize Wait Timeout"
PICS Item	
Initial Condition	IUT is operational.
Expected Behaviour	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.
Test strategy	
Notes	

TP ID	TP/SS/PKM/AUTH/INIT/BI-H000
IEEE 802.16 Reference	clause 6.3.2.3.9, paragraph 5 "Code"
PICS Item	
Initial Condition	IUT is has negotiated basic capabilities and transmitted PKM-REQ Auth Info and Auth Req messages (the IUT is now in Auth Wait State).
Expected Behaviour	Check that: On receiving a PKM-RSP message with an invalid Code value, the IUT silently discards the PKM-RSP and remains in the same state.
Test strategy	
Notes	

TP ID	TP/SS/PKM/AUTH/INIT/BI-H001
IEEE 802.16 Reference	clause 6.3.2.3, paragraph 1 Figure "Authorization state machine flow diagram"
PICS Item	
Initial Condition	Basic Capabilities Negotiation is completed. The IUT has transmitted a valid Auth Info message followed by a valid Auth Request message and started T_AuthWait (the IUT is now in Auth Wait State).
Expected Behaviour	Check that: On receiving an Auth Reply with erroneously encoded parameters, the IUT ignores the Auth Reply and remains in the same state.
Test strategy	
Notes	

TP ID	TP/SS/PKM/AUTH/INIT/BO-H000
IEEE 802.16 Reference	clause 6.3.2.3.9, paragraph 5
PICS Item	
Initial Condition	IUT is has negotiated basic capabilities and transmitted PKM-REQ Auth Info and Auth Req messages (the IUT is now in Auth Wait State).
Expected Behaviour	Check that: On receiving a PKM-RSP Auth Reply message with an Identifier field not matching that of the Auth Req message, the IUT silently discards the message and remains in the same state.
Test strategy	
Notes	

TP ID	TP/SS/PKM/AUTH/INIT/BO-H001
IEEE 802.16 Reference	clause 6.3.2.3.9, paragraph 5
PICS Item	
Initial Condition	IUT is has negotiated basic capabilities and transmitted PKM-REQ Auth Info and Auth Req messages.
Expected Behaviour	Check that: On receiving a PKM-RSP Auth Reject message with an Identifier field not matching that of the Auth Req message, the IUT silently discards the message and remains in the same state.
Test strategy	
Notes	

TP ID	TP/SS/PKM/AUTH/INIT/BO-H100
IEEE 802.16 Reference	clause 7.2.4 Table "Authorization FSM State Transition Matrix"
PICS Item	
Initial Condition	Basic Capabilities Negotiation is in process.
Expected Behaviour	Check that: On receiving a valid SBC-RSP to close out Basic Capabilities negotiation immediately followed by an Auth Reply message, the IUT ignores the Auth Reply message and transmits a valid Auth Info followed by a valid Auth Request message.
Test strategy	
Notes	

TP ID	TP/SS/PKM/AUTH/INIT/BO-H101
IEEE 802.16 Reference	clause 7.2.4 Table "Authorization FSM State Transition Matrix"
PICS Item	
Initial Condition	Basic Capabilities Negotiation is in process.
Expected Behaviour	Check that: On receiving a valid SBC-RSP to close out Basic Capabilities negotiation immediately followed by an Auth Invalid message, the IUT ignores the Auth Invalid message and transmits a valid Auth Info followed by a valid Auth Request message.
Test strategy	
Notes	

TP ID	TP/SS/PKM/AUTH/INIT/BO-H102
IEEE 802.16 Reference	clause 7.2.4 Table "Authorization FSM State Transition Matrix"
PICS Item	
Initial Condition	Basic Capabilities Negotiation is in process.
Expected Behaviour	Check that: On receiving a valid SBC-RSP to close out Basic Capabilities negotiation immediately followed by an Auth Reject message, the IUT ignores the Auth Reject message and transmits a valid Auth Info followed by a valid Auth Request message.
Test strategy	
Notes	

TP ID	TP/SS/PKM/AUTH/INIT/BO-H103
IEEE 802.16 Reference	clause 7.2.4 Table "Authorization FSM State Transition Matrix"
PICS Item	
Initial Condition	Basic Capabilities Negotiation is in process.
Expected Behaviour	Check that: On receiving a valid SBC-RSP to close out Basic Capabilities negotiation immediately followed by a Perm Auth Reject message, the IUT ignores the Perm Auth Reject message and transmits a valid Auth Info followed by a valid Auth Request message.
Test strategy	
Notes	

TP ID	TP/SS/PKM/AUTH/INIT/BO-H200
IEEE 802.16 Reference	clause 7.2.4, paragraph 5 Figure "Authorization state machine flow diagram" Table "Operational ranges for privacy configuration settings" "Authorize Wait Timeout"
PICS Item	
Initial Condition	Negotiating Basic Capabilities is completed. The IUT has transmitted a valid Auth Info and Auth Request messages and started T_AuthWait (the IUT is now in Auth Wait State).
Expected Behaviour	Check that: On receiving an Auth Invalid message, the IUT ignores the Auth Invalid and remains in the same state.
Test strategy	
Notes	

TP ID	TP/SS/PKM/AUTH/INIT/BO-H300
IEEE 802.16 Reference	clause 7.2.4, paragraph 5 Table "Authorization FSM State Transition Matrix" Figure "Authorization state machine flow diagram" Table "Operational ranges for privacy configuration settings" "Authorize Reject Wait Timeout"
PICS Item	
Initial Condition	Basic Capabilities Negotiation is completed. The IUT has transmitted a valid Auth Info message followed by a valid Auth Request message. The IUT then received an Auth Reject message not due to a permanent error condition (the IUT is now in the Auth Reject Wait State).
Expected Behaviour	Check that: On receiving an Auth Reply message, the IUT ignores the Auth Reply and remains in the same state.
Test strategy	
Notes	

TP ID	TP/SS/PKM/AUTH/INIT/BO-H301
IEEE 802.16 Reference	clause 7.2.4, paragraph 5 Table "Authorization FSM State Transition Matrix" Figure "Authorization state machine flow diagram" Table "Operational ranges for privacy configuration settings" "Authorize Reject Wait Timeout"
PICS Item	
Initial Condition	Basic Capabilities Negotiation is completed. The IUT has transmitted a valid Auth Info message followed by a valid Auth Request message. The IUT then received an Auth Reject message not due to a permanent error condition (the IUT is now in the Auth Reject Wait State).
Expected Behaviour	Check that: On receiving an Auth Invalid message, the IUT ignores the Auth Invalid and remains in the same state.
Test strategy	
Notes	

TP ID	TP/SS/PKM/AUTH/INIT/BO-H302
IEEE 802.16 Reference	clause 7.2.4, paragraph 5 Table "Authorization FSM State Transition Matrix" Figure "Authorization state machine flow diagram" Table "Operational ranges for privacy configuration settings" "Authorize Reject Wait Timeout"
PICS Item	
Initial Condition	Basic Capabilities Negotiation is completed. The IUT has transmitted a valid Auth Info message followed by a valid Auth Request message. The IUT then received an Auth Reject message not due to a permanent error condition (the IUT is now in the Auth Reject Wait State).
Expected Behaviour	Check that: On receiving an Auth Reject message, the IUT ignores the Auth Reject and remains in the same state.
Test strategy	
Notes	

TP ID	TP/SS/PKM/AUTH/INIT/BO-H303
IEEE 802.16 Reference	clause 7.2.4, paragraph 5 Table "Authorization FSM State Transition Matrix" Figure "Authorization state machine flow diagram" Table "Operational ranges for privacy configuration settings" "Authorize Reject Wait Timeout"
PICS Item	
Initial Condition	Basic Capabilities Negotiation is completed. The IUT has transmitted a valid Auth Info message followed by a valid Auth Request message. The IUT then received an Auth Reject message not due to a permanent error condition (the IUT is now in the Auth Reject Wait State).
Expected Behaviour	Check that: On receiving a Perm Auth Reject message, the IUT ignores the Perm Auth Reject and remains in the same state.
Test strategy	
Notes	

TP ID	TP/SS/PKM/AUTH/INIT/BO-H400
IEEE 802.16 Reference	Table "Authorization FSM State Transition Matrix" clause 7.2.4.3 "Permanent Authorization Reject" paragraph 2
PICS Item	
Initial Condition	Basic Capabilities Negotiation is completed. The IUT has transmitted a valid Auth Info message followed by a valid Auth Request message. The IUT then received an Auth Reject message due to a permanent error condition (the IUT is now in the Silent state).
Expected Behaviour	Check that: On receiving a Auth Reply message, the IUT ignores the Auth Reply and remains in the same state.
Test strategy	
Notes	

TP ID	TP/SS/PKM/AUTH/INIT/BO-H401
IEEE 802.16 Reference	Table "Authorization FSM State Transition Matrix" clause 7.2.4.3 "Permanent Authorization Reject" paragraph 2
PICS Item	
Initial Condition	Basic Capabilities Negotiation is completed. The IUT has transmitted a valid Auth Info message followed by a valid Auth Request message. The IUT then received an Auth Reject message due to a permanent error condition (the IUT is now in the Silent state).
Expected Behaviour	Check that: On receiving a Auth Invalid message, the IUT ignores the Auth Invalid and remains in the same state.
Test strategy	
Notes	

TP ID	TP/SS/PKM/AUTH/INIT/BO-H402
IEEE 802.16 Reference	Table "Authorization FSM State Transition Matrix" clause 7.2.4.3 "Permanent Authorization Reject" paragraph 2
PICS Item	
Initial Condition	Basic Capabilities Negotiation is completed. The IUT has transmitted a valid Auth Info message followed by a valid Auth Request message. The IUT then received an Auth Reject message due to a permanent error condition (the IUT is now in the Silent state).
Expected Behaviour	Check that: On receiving an Auth Reject message, the IUT ignores the Auth Reject and remains in the same state.
Test strategy	
Notes	

TP ID	TP/SS/PKM/AUTH/INIT/BO-H403
IEEE 802.16 Reference	Table "Authorization FSM State Transition Matrix" clause 7.2.4.3 "Permanent Authorization Reject" paragraph 2
PICS Item	
Initial Condition	Basic Capabilities Negotiation is completed. The IUT has transmitted a valid Auth Info message followed by a valid Auth Request message. The IUT then received an Auth Reject message due to a permanent error condition (the IUT is now in the Silent state).
Expected Behaviour	Check that: On receiving a Perm Auth Reject message, the IUT ignores the Perm Auth Reject and remains in the same state.
Test strategy	
Notes	

5.3.4.1.2   Operational (OPN)

TP ID	TP/SS/PKM/AUTH/OPN/BV-H000
IEEE 802.16 Reference	clause 7.2.4.5, 6-C Table "Values for privacy configuration setting for protocol testing"
PICS Item	
Initial Condition	IUT has started Authorization and has just received the Auth Reply to enter the Authorized state.
Expected Behaviour	Check that: For reauthorization, the IUT transmits an Auth Request between (AK Lifetime - AK Grace Time) and AK Lifetime seconds after the IUT received the Auth Reply (the IUT is now in Reauth Wait State).
Test strategy	
Notes	Protocol testing time values are different than field values in "Operational ranges for privacy configuration settings" Table.

TP ID	TP/SS/PKM/AUTH/OPN/BV-H001
IEEE 802.16 Reference	clause 7.2.4.5, 4-D
PICS Item	
Initial Condition	The IUT is operational and in Reauth Wait State.
Expected Behaviour	Check that: On receiving a valid Auth Reply, the IUT goes to the Authorized state, adopts the new AK contained in the Auth Reply, and sets the Authorization Grace timer to go off "Authorization Grace Time" seconds prior to the supplied AK's scheduled expiration.
Test strategy	
Notes	

TP ID	TP/SS/PKM/AUTH/OPN/BV-H002
IEEE 802.16 Reference	clause 7.2.4.4 Table "Operational ranges for privacy configurations settings"
PICS Item	
Initial Condition	IUT is operational has transmitted a valid Auth Request message to reauthorize. It has then received a valid Auth Reply message with a AK Grace Time and AK Lifetime values different than the default values in Table "Operational ranges for privacy configurations settings". The IUT is now reauthorized.
Expected Behaviour	Check that: The IUT uses the new AK Grace Time and AK Lifetime values for the next reauthorization.
Test strategy	
Notes	

TP ID	TP/SS/PKM/AUTH/OPN/BV-H100
IEEE 802.16 Reference	clause 7.2.4.5, 8-C
PICS Item	
Initial Condition	IUT is operational and Authorized.
Expected Behaviour	Check that: When a vendor-specified action occurs, the IUT transmits an Auth Request (the IUT is now in Reauth Wait State).
Test strategy	
Notes	An SNMP set to reauthorize would be an example of a "vendor-specified action".

TP ID	TP/SS/PKM/AUTH/OPN/BV-H101
IEEE 802.16 Reference	clause 7.2.4.5, 7-C
PICS Item	
Initial Condition	IUT is operational and Authorized.
Expected Behaviour	Check that: On receiving an Auth Invalid message associated with a particular TEK, the IUT transmits an Auth Request (the IUT is now in Reauth Wait State).
Test strategy	
Notes	

TP ID	TP/SS/PKM/AUTH/OPN/BV-H200
IEEE 802.16 Reference	clause 7.2.4.5, 7-D
PICS Item	
Initial Condition	IUT is Operational and in Reauth Wait state.
Expected Behaviour	Check that: On receiving an Auth Invalid for a particular TEK, the IUT remains in the Reauth Wait state.
Test strategy	
Notes	To test that IUT is in Reauth Wait state, wait for T_ReauthWait expiry and then check if IUT transmits a valid Auth Request for reauthorization.

TP ID	TP/SS/PKM/AUTH/OPN/BV-H201
IEEE 802.16 Reference	clause 7.2.4.5, 2-D
PICS Item	
Initial Condition	IUT is Operational and in Reauth Wait state.
Expected Behaviour	Check that: On receiving an Auth Reject, the IUT clears T_AuthReq and starts T_AuthRejectWait (the IUT is now in Auth Reject Wait State).
Test strategy	
Notes	To test that the IUT is in Auth Reject Wait State, wait for T_AuthRejectWait expiry and then check if IUT transmits a valid Auth Info followed by a valid Auth Request for authorization.

TP ID	TP/SS/PKM/AUTH/OPN/BV-H202
IEEE 802.16 Reference	clauses 7.2.4.5, 3-D and 7.2.4.3 "Permanent Authorization Reject" paragraph 2
PICS Item	
Initial Condition	IUT is Operational and in Reauth Wait state.
Expected Behaviour	Check that: On receiving a Perm Auth Reject, the IUT disables all forwarding of traffic and responds to management messages (the IUT is in the Silent state).
Test strategy	
Notes	

TP ID	TP/SS/PKM/AUTH/OPN/BV-H300
IEEE 802.16 Reference	clause 7.2.4.5, 5-E
PICS Item	
Initial Condition	The IUT is operational and in Auth Reject Wait State.
Expected Behaviour	Check that: On expiry of Auth Reject Wait Timer, the IUT restarts Authorization by sending a valid Auth Info followed by a valid Info Request message.
Test strategy	
Notes	

TP ID	TP/SS/PKM/AUTH/OPN/TI-H000
IEEE 802.16 Reference	clause 7.2.4.5, 5-D
PICS Item	
Initial Condition	IUT is operational and authorized. IUT has just transmitted a valid Auth Request message to re-authorize (the IUT is now in Reauth Wait state.)
Expected Behaviour	Check that: Not having received any Auth Reply message after a duration of Reauthorize Wait Timeout, the IUT re-transmits the Auth Request message to reauthorize (the IUT remains in Reauth Wait State).
Test strategy	
Notes	

TP ID	TP/SS/PKM/AUTH/OPN/TI-H001
IEEE 802.16 Reference	clause 7.2.4.5, 5-D
PICS Item	
Initial Condition	IUT is operational and authorized.
Expected Behaviour	Check that: To reauthorize, the IUT repeats the cycle of sending a valid Auth Request message and waiting Reauthorize Wait Timeout duration until receiving an Auth Reply message.
Test strategy	
Notes	

TP ID	TP/SS/PKM/AUTH/OPN/TI-H002
IEEE 802.16 Reference	clause 7.2.4.5. 4-B Table "Auth Reply attributes"
PICS Item	
Initial Condition	IUT is operational has transmitted a valid Auth Request message to reauthorize. It has then received a valid Auth Reply message with Reauthorize Wait Timeout and Authorize Reject Wait Timeout values different than the default values in Table "Operational ranges for privacy configurations settings". The IUT is now reauthorized.
Expected Behaviour	Check that: The IUT uses the new values for Reauthorize Wait Timeout and Authorize Reject Wait Timeout.
Test strategy	
Notes	

TP ID	TP/SS/PKM/AUTH/OPN/BI-H000
IEEE 802.16 Reference	clause 11.9.10 Table "Error-code attribute code values"
PICS Item	
Initial Condition	The IUT is operational and Reauth Wait State.
Expected Behaviour	Check that: On receiving an Auth Reject message with an error-code value not shown in the table "Error-code attribute code values", the IUT ignores the error-code value.
Test strategy	
Notes	

TP ID	TP/SS/PKM/AUTH/OPN/BO-H000
IEEE 802.16 Reference	clause 7.2.4, paragraph 5 Table "Authorization FSM state transition matrix"
PICS Item	
Initial Condition	The IUT is operational and Authorized.
Expected Behaviour	Check that: On receiving an Auth Reply message, the IUT does nothing and remains in the Authorized state.
Test strategy	
Notes	

TP ID	TP/SS/PKM/AUTH/OPN/BO-H001
IEEE 802.16 Reference	clause 7.2.4, paragraph 5 Table "Authorization FSM state transition matrix"
PICS Item	
Initial Condition	The IUT is operational and Authorized.
Expected Behaviour	Check that: On receiving an Auth Reject message, the IUT does nothing and remains in the Authorized state.
Test strategy	
Notes	

TP ID	TP/SS/PKM/AUTH/OPN/BO-H002
IEEE 802.16 Reference	clause 7.2.4, paragraph 5 Table "Authorization FSM state transition matrix"
PICS Item	
Initial Condition	The IUT is operational and Authorized.
Expected Behaviour	Check that: On receiving a Perm Auth Reject message, the IUT does nothing and remains in the Authorized state.
Test strategy	
Notes	

TP ID	TP/SS/PKM/AUTH/OPN/BO-H100
IEEE 802.16 Reference	clause 7.2.4 paragraph 5 Table "Authorization FSM state transition matrix"
PICS Item	
Initial Condition	The IUT is operational and in Auth Reject Wait State.
Expected Behaviour	Check that: On receiving an Auth Reply, the IUT silently discards the Auth Reply and remains in the same state.
Test strategy	
Notes	

TP ID	TP/SS/PKM/AUTH/OPN/BO-H101
IEEE 802.16 Reference	clause 7.2.4, paragraph 5 Table "Authorization FSM state transition matrix"
PICS Item	
Initial Condition	The IUT is operational and in Auth Reject Wait State.
Expected Behaviour	Check that: On receiving an Auth Invalid, the IUT silently discards the Auth Invalid and remains in the same state.
Test strategy	
Notes	

TP ID	TP/SS/PKM/AUTH/OPN/BO-H102
IEEE 802.16 Reference	clause 7.2.4, paragraph 5 Table "Authorization FSM state transition matrix"
PICS Item	
Initial Condition	The IUT is operational and in Auth Reject Wait State.
Expected Behaviour	Check that: On receiving an Auth Reject, the IUT silently discards the Auth Reject and remains in the same state.
Test strategy	
Notes	

TP ID	TP/SS/PKM/AUTH/OPN/BO-H103
IEEE 802.16 Reference	clause 7.2.4, paragraph 5 Table "Authorization FSM state transition matrix"
PICS Item	
Initial Condition	The IUT is operational and in Auth Reject Wait State.
Expected Behaviour	Check that: On receiving a Perm Auth Reject, the IUT silently discards the Perm Auth Reject and remains in the same state.
Test strategy	
Notes	

TP ID	TP/SS/PKM/AUTH/OPN/BO-H200
IEEE 802.16 Reference	clause 7.2.4, paragraph 5 Table "Authorization FSM state transition matrix"
PICS Item	
Initial Condition	The IUT is operational and in Silent State.
Expected Behaviour	Check that: On receiving an Auth Reply, the IUT silently discards the Auth Reply, remains in the same state, continues to disable all forwarding of traffic and continues to respond to management messages.
Test strategy	
Notes	

TP ID	TP/SS/PKM/AUTH/OPN/BO-H201
IEEE 802.16 Reference	clause 7.2.4, paragraph 5 Table "Authorization FSM state transition matrix"
PICS Item	
Initial Condition	The IUT is operational and in Silent State.
Expected Behaviour	Check that: On receiving an Auth Invalid, the IUT silently discards the Auth Invalid, remains in the same state, continues to disable all forwarding of traffic and continues to respond to management messages.
Test strategy	
Notes	

TP ID	TP/SS/PKM/AUTH/OPN/BO-H202
IEEE 802.16 Reference	clause 7.2.4, paragraph 5 Table "Authorization FSM state transition matrix"
PICS Item	
Initial Condition	The IUT is operational and in Silent State.
Expected Behaviour	Check that: On receiving an Auth Reject, the IUT silently discards the Auth Reject, remains in the same state, continues to disable all forwarding of traffic and continues to respond to management messages.
Test strategy	
Notes	

TP ID	TP/SS/PKM/AUTH/OPN/BO-H203
IEEE 802.16 Reference	clause 7.2.4, paragraph 5 Table "Authorization FSM state transition matrix"
PICS Item	
Initial Condition	The IUT is operational and in Silent State.
Expected Behaviour	Check that: On receiving a Perm Auth Reject, the IUT silently discards the Perm Auth Reject, remains in the same state, continues to disable all forwarding of traffic and continues to respond to management messages.
Test strategy	
Notes	

5.3.4.2   Encryption Key Transfer (TEK)

5.3.4.2.1   Initialization (INIT)

TP ID	TP/SS/PKM/TEK/INIT/BV-H000
IEEE 802.16 Reference	clause 7.2.5.5, 2-A
PICS Item	
Initial Condition	The IUT is initializing. It has no static provisioned SAs.
Expected Behaviour	Check that: On becoming Authorized, the IUT transmits a Key Request for its Primary SA whose SAID is the IUT's Basic CID.
Test strategy	
Notes	

TP ID	TP/SS/PKM/TEK/INIT/BV-H001
IEEE 802.16 Reference	clause 7.1.3, paragraph 4
PICS Item	IUT is a manageable SS and is Initializing.
Initial Condition	
Expected Behaviour	Check that: On completing Authorization, the IUT establishes an exclusive Primary SA with the SAID equal to the IUT's Basic CID.
Test strategy	
Notes	

TP ID	TP/SS/PKM/TEK/INIT/BV-H002
IEEE 802.16 Reference	clause 7.2.5.5, 2-A
PICS Item	
Initial Condition	The IUT is initializing. The Primary SAID was included in the Auth Request.
Expected Behaviour	Check that: On becoming Authorized, the IUT transmits a Key Request for its Primary SA whose SAID is the IUT's Basic CID and a Key Request for each SA Descriptor that is included in the Auth Reply and that the IUT supports.
Test strategy	
Notes	

TP ID	TP/SS/PKM/TEK/INIT/BV-H003
IEEE 802.16 Reference	clauses 7.5, 7.5.2.1 and 7.2.5.5, 8-B
PICS Item	
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 (the TEK is now in Op Wait state.)
Expected Behaviour	Check that: On receiving a valid Key Reply message, the IUT decrypts the TEK in TEK-parameters sub attributes of the Key Reply using the two-key 3-DES in the EDE mode (the TEK is now in the Operational state).
Test strategy	
Notes	

TP ID	TP/SS/PKM/TEK/INIT/BV-H004
IEEE 802.16 Reference	clauses 7.5, 7.5.2.2 and 7.2.5.5, 8-B
PICS Item	
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 (the TEK is now in Op Wait state).
Expected Behaviour	Check that: On receiving a valid Key Reply message, the IUT decrypts the TEK in TEK-parameters sub attributes of the Key Reply using the RSA method (the TEK is now in the Operational state).
Test strategy	
Notes	

TP ID	TP/SS/PKM/TEK/INIT/BV-H005
IEEE 802.16 Reference	clauses 7.5, 7.5.2.3 and 7.2.5.5, 8-B
PICS Item	
Initial Condition	The IUT is Key Exchanging. During authorization, the IUT 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 then transmitted a Key Request message (the TEK is now in Op Wait state).
Expected Behaviour	Check that: On receiving a valid Key Reply message, the IUT decrypts the TEK in TEK-parameters sub attributes of the Key Reply using 128 AES in ECB mode (the TEK is now in the Operational state).
Test strategy	
Notes	

TP ID	TP/SS/PKM/TEK/INIT/BV-H100
IEEE 802.16 Reference	clause 7.2.3, paragraph 2
PICS Item	
Initial Condition	IUT is Initializing, is Authorizing with the BS that has Static provisioned SAs. The IUT has transmitted an Auth Request containing the Primary SAID.
Expected Behaviour	Check that: On receiving on Auth Reply containing a static SA Descriptor that it does not support, the IUT does not initiate a TEK exchange for the unsupported static SA Descriptor.
Test strategy	
Notes	

TP ID	TP/SS/PKM/TEK/INIT/BV-H200
IEEE 802.16 Reference	clause 7.2.5.5, 9-B
PICS Item	
Initial Condition	The IUT is Initializing and conducting the TEK exchanges. The IUT has transmitted a valid Key Request for an SAID (the IUT is in the Op Wait State).
Expected Behaviour	Check that: On receiving a valid Key Reject message, the IUT transmits no Key messages, stops the TEK FSM, and goes to the TEK FSM Start state.
Test strategy	
Notes	

TP ID	TP/SS/PKM/TEK/INIT/BI-H000
IEEE 802.16 Reference	clause 6.3.2.3.9, paragraph 5 "Code"
PICS Item	
Initial Condition	IUT is initializing, is authorized, and has transmitted PKM-REQ Key Request messages (the IUT is now in Op Wait State).
Expected Behaviour	Check that: On receiving a PKM-RSP message with an invalid Code value, the IUT silently discards the PKM-RSP and remains in the same state.
Test strategy	
Notes	

TP ID	TP/SS/PKM/TEK/INIT/BO-H000
IEEE 802.16 Reference	clause 6.3.2.3.9, paragraph 5 "PKM Identifier" paragraph 6
PICS Item	
Initial Condition	IUT is initializing, is authorized, and has transmitted a valid Key Request message (the IUT is now in Op Wait State).
Expected Behaviour	Check that: On receiving a Key Reply message with an Identifier field not matching that of the Key Request, the IUT discards the Key Reply and remains in the same state.
Test strategy	
Notes	

TP ID	TP/SS/PKM/TEK/INIT/BO-H001
IEEE 802.16 Reference	clause 6.3.2.3.9, paragraph 5 "PKM Identifier" paragraph 6
PICS Item	
Initial Condition	IUT is initializing, is authorized, and has transmitted a valid Key Request message (the IUT is now in Op Wait State).
Expected Behaviour	Check that: On receiving a Key Reject message with an Identifier field not matching that of the Key Request, the IUT discards the Key Reply and remains in the same state.
Test strategy	
Notes	

TP ID	TP/SS/PKM/TEK/INIT/TI-H000
IEEE 802.16 Reference	clause 7.2.5.5, 6-B
PICS Item	
Initial Condition	The IUT is Initializing and conducting the TEK exchanges. The IUT has transmitted a valid Key Request for an SAID and has started the Op Wait Timer (the IUT is in the Op Wait State).
Expected Behaviour	Check that: On expiry of the Op Wait Timer without receiving a valid Key Reply or Key Reject for the SAID, the IUT retransmits the Key Request for the SAID and remains in the same state.
Test strategy	
Notes	

TP ID	TP/SS/PKM/TEK/INIT/TI-H001
IEEE 802.16 Reference	clause 7.2.5.5, 6-B Figure "TEK state machine flow diagram"
PICS Item	
Initial Condition	The IUT is Initializing and conducting the TEK exchanges. The IUT has transmitted a valid Key Request for an SAID and has started the Op Wait Timer (the IUT is in the Op Wait State).
Expected Behaviour	Check that: Each time the Op Wait Timer expires without receiving a valid Key Reply or Key Reject for the SAID, the IUT retransmits the Key Request for the SAID and restarts the Op Wait Timer until the IUT receives a valid Key Reply or Key Reject.
Test strategy	
Notes	

5.3.4.2.2   Operational (OPN)

TP ID	TP/SS/PKM/TEK/OPN/BV-H000
IEEE 802.16 Reference	clause 7.2.5.5, 7-D
PICS Item	
Initial Condition	IUT is operational and encrypting.
Expected Behaviour	Check that: To refresh keys, the IUT transmits a valid Key Request between (TEK Active Lifetime - TEK Grace Time) and TEK Active Lifetime seconds after receiving the latest Key Reply.
Test strategy	
Notes	Protocol testing timer values are used from Table "Values for privacy configuration setting for protocol testing".

TP ID	TP/SS/PKM/TEK/OPN/BV-H001
IEEE 802.16 Reference	clause 7.2.5.5, 7-D Table "Operational ranges for privacy configuration settings"
PICS Item	
Initial Condition	IUT is operational and encrypting. An authorization or reauthorization process has just occurred that has changed the value for TEK Grace Time.
Expected Behaviour	Check that: To refresh keys, the IUT transmits a valid Key Request between (TEK Active Lifetime - the new TEK Grace Time) and TEK Active Lifetime seconds after receiving the latest Key Reply.
Test strategy	
Notes	

TP ID	TP/SS/PKM/TEK/OPN/BV-H002
IEEE 802.16 Reference	clause 6.3.2.3.9, paragraph 5 "Identifier"
PICS Item	
Initial Condition	IUT is operational and encrypting.
Expected Behaviour	Check that: To refresh its keys, the IUT sends a Key Request message whose Identifier is the PKM Identifier used in the last PKM transaction incremented by 1 (modulo 256).
Test strategy	
Notes	

TP ID	TP/SS/PKM/TEK/OPN/BV-H003
IEEE 802.16 Reference	clauses 7.5, 7.5.2.1 and 7.2.5.5, 8-E
PICS Item	
Initial Condition	During the last authorization/reauthorization, 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 (the TEK is now in Rekey Wait state.)
Expected Behaviour	Check that: On receiving a valid Key Reply message, the IUT decrypts the TEK in TEK-parameters sub attributes of the Key Reply using the two-key 3-DES in the EDE mode (the TEK is now in the Operational state).
Test strategy	
Notes	

TP ID	TP/SS/PKM/TEK/OPN/BV-H004
IEEE 802.16 Reference	clauses 7.5, 7.5.2.2 and 7.2.5.5, 8-E
PICS Item	
Initial Condition	During the last authorization/reauthorization, 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 (the TEK is now in Rekey Wait state).
Expected Behaviour	Check that: On receiving a valid Key Reply message, the IUT decrypts the TEK in TEK-parameters sub attributes of the Key Reply using the RSA method (the TEK is now in the Operational state).
Test strategy	
Notes	

TP ID	TP/SS/PKM/TEK/OPN/BV-H005
IEEE 802.16 Reference	clauses 7.5, 7.5.2.3 and 7.2.5.5, 8-E
PICS Item	
Initial Condition	During the last authorization/reauthorization, the IUT 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 then transmitted a Key Request message (the TEK is now in Rekey Wait state).
Expected Behaviour	Check that: On receiving a valid Key Reply message, the IUT decrypts the TEK in TEK-parameters sub attributes of the Key Reply using 128 AES in ECB mode (the TEK is now in the Operational state).
Test strategy	
Notes	

TP ID	TP/SS/PKM/TEK/OPN/BV-H100
IEEE 802.16 Reference	clause 7.2.5.5, 1-D Figure "Authorization state machine flow diagram"
PICS Item	
Initial Condition	The IUT is operational and encrypting for an SAID. It has just sent an Auth Request to reauthorize (the IUT is in Reauth Wait and TEK FSM Operational states).
Expected Behaviour	Check that: When the IUT's Authorization FSM terminates the TEK FSM for the given SAID, the IUT terminates encryption for the SAID. (The IUT is now in Authorized and TEK FSM start states (the old TEK FSM is deleted).
Test strategy	
Notes	

TP ID	TP/SS/PKM/TEK/OPN/BV-H101
IEEE 802.16 Reference	clause 7.2.5.5, 5-D
PICS Item	
Initial Condition	The IUT is operational and encrypting (the IUT is in the TEK FSM operational state).
Expected Behaviour	Check that: On receiving a TEK Invalid message, the IUT sends a valid Key Request and stops using the traffic encryption keys for the SAID indicated in the TEK Invalid (the IUT is now in the Op Wait State).
Test strategy	
Notes	

TP ID	TP/SS/PKM/TEK/OPN/BV-H200
IEEE 802.16 Reference	clause 7.2.5.5, 1-E
PICS Item	
Initial Condition	The IUT is operational and encrypting for an SAID. It has sent a Key Request for key refresh. It has also sent an Auth Req to reauthorize (the IUT is now in Reauth Wait and Rekey Wait states).
Expected Behaviour	Check that: When the IUT's Authorization FSM terminates the TEK FSM for the given SAID, the IUT goes to the Authorized and TEK FSM start states. The old TEK FSM is deleted.
Test strategy	
Notes	Not replying to the Key Request ensures that the IUT remains in the Rekey Wait state until it reauthorizes.

TP ID	TP/SS/PKM/TEK/OPN/BV-H201
IEEE 802.16 Reference	clause 7.2.4.3 "Authorization Invalid" and clause 7.2.5.5, 3-E Figure "Authorization state machine flow diagram"
PICS Item	
Initial Condition	The IUT is operational and encrypting. The IUT has sent a valid Key Request to rekey (the IUT is now in Authorized and Rekey Wait States).
Expected Behaviour	Check that: On receiving an Auth Invalid message with an Error Code = 5 (Message Authentication Failure), the IUT sends an Auth Request message (the IUT is now in Reauth Wait and Rekey Auth Wait States).
Test strategy	
Notes	

TP ID	TP/SS/PKM/TEK/OPN/BV-H202
IEEE 802.16 Reference	clause 7.2.4.3 "Authorization Invalid" and clause 7.2.5.5, 3-E Figure "Authorization state machine flow diagram"
PICS Item	
Initial Condition	The IUT is operational and encrypting. The IUT has sent a valid Key Request to rekey (the IUT is now in Authorized and Rekey Wait States).
Expected Behaviour	Check that: On receiving a Key Reply that does not authenticate (Message Authentication Failure), the IUT sends an Auth Request message (the IUT is now in Reauth Wait and Rekey Auth Wait States).
Test strategy	
Notes	

TP ID	TP/SS/PKM/TEK/OPN/BV-H203
IEEE 802.16 Reference	clause 7.2.4.3 "Authorization Invalid" and clause 7.2.5.5, 3-E Figure "Authorization state machine flow diagram"
PICS Item	
Initial Condition	The IUT is operational and encrypting. The IUT has sent a valid Key Request to rekey (the IUT is now in Authorized and Rekey Wait States.)
Expected Behaviour	Check that: On receiving a Key Reject that does not authenticate (Message Authentication Failure), the IUT sends an Auth Request message (the IUT is now in Reauth Wait and Rekey Auth Wait States).
Test strategy	
Notes	

TP ID	TP/SS/PKM/TEK/OPN/BV-H204
IEEE 802.16 Reference	clause 7.2.5.5, 5-E
PICS Item	
Initial Condition	The IUT is operational and encrypting. It has just sent a Key Request to refresh its keys (the IUT is now in Rekey Wait state).
Expected Behaviour	Check that: On receiving a TEK Invalid message, the IUT transmits a Key Request message and stops using the traffic encryption keys for the SAID indicated in the TEK Invalid message (the IUT is now in Op Wait state).
Test strategy	
Notes	

TP ID	TP/SS/PKM/TEK/OPN/BV-H205
IEEE 802.16 Reference	clause 7.2.5.5, 9-E
PICS Item	
Initial Condition	The IUT is operational and encrypting. The IUT has sent a Key Request message to refresh its keys (the IUT is in the Rekey Wait state).
Expected Behaviour	Check that: On receiving a Key Reject message, the IUT stops using the key contained in the Key Reject message (the TEK FSM is now in the start state).
Test strategy	
Notes	

TP ID	TP/SS/PKM/TEK/OPN/BV-H300
IEEE 802.16 Reference	clause 7.2.5.5, 1-F
PICS Item	
Initial Condition	The IUT is operational and encrypting for an SAID. It has sent a Key Request for key refresh. It has also sent an Auth Req to reauthorize (the IUT is now in Reauth Wait and Rekey Reauth Wait states).
Expected Behaviour	Check that: On receiving an Auth Reply that does not include the SA Descriptor for the SAID, the IUT goes to the Authorized and TEK FSM start states. The old TEK FSM is deleted.
Test strategy	
Notes	Not replying to the Key Request ensures that the IUT remains in the Rekey Wait state until it reauthorizes.

TP ID	TP/SS/PKM/TEK/OPN/BV-H301
IEEE 802.16 Reference	clause 7.2.4.3 "Authorization Invalid" and clause 7.2.5.5, 4-F Figure "Authorization state machine flow diagram"
PICS Item	
Initial Condition	The IUT is operational and encrypting. It is in the Reauth Wait and Rekey Auth Wait States.
Expected Behaviour	Check that: On receiving a valid Auth Reply, the IUT transmits a valid Key Request message (the IUT is now in Authorized and Rekey Wait states).
Test strategy	
Notes	

TP ID	TP/SS/PKM/TEK/OPN/BV-H302
IEEE 802.16 Reference	clause 7.2.5.5, 5-F
PICS Item	
Initial Condition	The IUT is operational and encrypting. It has just sent a Key Request to refresh its keys. At the same time, the IUT is reauthorizing (the IUT is in the Reauth Wait and Rekey Reauth Wait states).
Expected Behaviour	Check that: On receiving a TEK Invalid message, the IUT stops using the traffic encryption keys for the SAID indicated in the TEK Invalid message (the IUT is now in the Reauth Wait and Op Reauth Wait states).
Test strategy	
Notes	The IUT can be induced to go tin the Rekey Reauth Wait state by waiting for but never responding to a Key Request until reauthorization starts. This test is possible using the timer values in Table "Authorization FSM State Transition Matrix". Using other values may cause both TEKs' lifetime to expire prior to receiving the Auth Request for re-authorization.

TP ID	TP/SS/PKM/TEK/OPN/BV-H400
IEEE 802.16 Reference	clause 7.2.5.5, 1-B
PICS Item	
Initial Condition	The IUT is refreshing its keys. The IUT is in the Op Wait state.
Expected Behaviour	Check that: When the IUT's Authorization FSM terminates the TEK FSM for the given SAID, the IUT terminates encryption for the SAID (the IUT is now in Authorized and TEK FSM start states. The old TEK FSM is deleted).
Test strategy	
Notes	

TP ID	TP/SS/PKM/TEK/OPN/BV-H401
IEEE 802.16 Reference	clause 7.2.5.5, 3-B
PICS Item	
Initial Condition	The IUT is encrypting and in the Key FSM Op Wait state.
Expected Behaviour	Check that: On receiving an Auth Invalid message, the IUT transmits an Auth Request message (the IUT is now in the Reauth Wait and Op Reauth Wait states).
Test strategy	
Notes	

TP ID	TP/SS/PKM/TEK/OPN/BV-H402
IEEE 802.16 Reference	clauses 7.5, 7.5.2.1 and 7.2.5.5, 8-B
PICS Item	
Initial Condition	The IUT is refreshing its keys. During the last authorization/reauthorization, 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 is in the Op Wait state.
Expected Behaviour	Check that: On receiving a valid Key Reply message, the IUT decrypts the TEK in TEK-parameters sub attributes of the Key Reply using the two-key 3-DES in the EDE mode (the TEK is now in the Operational state).
Test strategy	
Notes	

TP ID	TP/SS/PKM/TEK/OPN/BV-H403
IEEE 802.16 Reference	clauses 7.5, 7.5.2.2 and 7.2.5.5, 8-B
PICS Item	
Initial Condition	The IUT is refreshing its keys. During the last authorization/reauthorization, 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 is in the Op Wait state.
Expected Behaviour	Check that: On receiving a valid Key Reply message, the IUT decrypts the TEK in TEK-parameters sub attributes of the Key Reply using the RSA method (the TEK is now in the Operational state).
Test strategy	
Notes	

TP ID	TP/SS/PKM/TEK/OPN/BV-H404
IEEE 802.16 Reference	clauses 7.5, 7.5.2.3 and 7.2.5.5, 8-B
PICS Item	
Initial Condition	The IUT is refreshing its keys. During the last authorization/reauthorization, the IUT 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 is in the Op Wait state.
Expected Behaviour	Check that: On receiving a valid Key Reply message, the IUT decrypts the TEK in TEK-parameters sub attributes of the Key Reply using 128 AES in ECB mode (the TEK is now in the Operational state).
Test strategy	
Notes	

TP ID	TP/SS/PKM/TEK/OPN/BV-H405
IEEE 802.16 Reference	clause 7.2.5.5, 9-B
PICS Item	
Initial Condition	The IUT is refreshing its keys. The IUT is in the Op Wait state.
Expected Behaviour	Check that: On receiving a valid Key Reject message,, the IUT stops using the key contained in the Key Reject message (the TEK FSM is now in the Start state).
Test strategy	
Notes	

TP ID	TP/SS/PKM/TEK/OPN/BV-H500
IEEE 802.16 Reference	clause 7.2.5.5, 4-C
PICS Item	
Initial Condition	The IUT is operational and encrypting. It is in the Reauth Wait and Op Reauth Wait states.
Expected Behaviour	Check that: On receiving an Auth Reply message, the IUT transmits a valid Key Request message (the IUT is now in the Authorized and Op Wait states).
Test strategy	
Notes	

TP ID	TP/SS/PKM/TEK/OPN/BV-H600
IEEE 802.16 Reference	clause 7.1.3, paragraph 6
PICS Item	
Initial Condition	IUT is operational and encrypting.
Expected Behaviour	Check that: When the current keying material expires before a new set of keying material has been received, the IUT performs network entry as specified in paragraph 6.3.9.
Test strategy	
Notes	

TP ID	TP/SS/PKM/TEK/OPN/TI-H000
IEEE 802.16 Reference	clause 7.2.5.5, 6-E
PICS Item	
Initial Condition	The IUT is encrypting. It has sent valid Key Request to rekey and started the Rekey Wait Timer (the IUT is Rekey Wait state).
Expected Behaviour	Check that: On Rekey Wait Timer expiry without receiving a valid response to the Key Request, the IUT retransmits the Key Request and remains in the same state.
Test strategy	
Notes	

TP ID	TP/SS/PKM/TEK/OPN/TI-H001
IEEE 802.16 Reference	clause 7.2.5.5, 6-E
PICS Item	
Initial Condition	The IUT is encrypting. It has sent valid Key Request to rekey and started the Rekey Wait Timer (the IUT is Rekey Wait state).
Expected Behaviour	Check that: Each time the Rekey Wait Timer expiry without receiving a valid response to the Key Request, the IUT retransmits the Key Request and remains in the same state until the IUT receives a valid Key Reply, Key Reject, or TEK Invalid message.
Test strategy	
Notes	

TP ID	TP/SS/PKM/TEK/OPN/TI-H002
IEEE 802.16 Reference	clause 7.2.5.5, 6-E
PICS Item	
Initial Condition	The IUT is operational and encrypting. It has just transmitted a Key Request message and started the Key Request Retry timer (the IUT is in the Rekey Wait state).
Expected Behaviour	Check that: On expiry of the Key Request Retry timer without receiving a valid Key Reply nor Key Reject message, the IUT retransmits the Key Request (the IUT remains in the Rekey Wait state).
Test strategy	
Notes	

TP ID	TP/SS/PKM/TEK/OPN/TI-H003
IEEE 802.16 Reference	clause 7.2.5.5, 6-B
PICS Item	
Initial Condition	The IUT is operational but has no traffic keys. It has just transmitted a Key Request message and started the Key Request Retry timer (the IUT is in the Rekey Wait state).
Expected Behaviour	Check that: Each time the Op Wait Timer expires without receiving a valid Key Reply nor the Key Reject message, the IUT retransmits the Key Request and remains in the same state until the IUT receives a valid Key Reply or the Key Reject message.
Test strategy	
Notes	

TP ID	TP/SS/PKM/TEK/OPN/TI-H004
IEEE 802.16 Reference	clause 6.3.2.3.9, paragraph 5 "Identifier"
PICS Item	
Initial Condition	IUT is operational and encrypting.
Expected Behaviour	Check that: When retransmitting a Key Request messages, the IUT keeps the Identifier field's the same as that for first transmitted Key Request.
Test strategy	
Notes	

TP ID	TP/SS/PKM/TEK/OPN/BI-H000
IEEE 802.16 Reference	clause 6.3.2.3.9, paragraph 6
PICS Item	
Initial Condition	IUT is operational and encrypting. The IUT has sent a Key Request to refresh its keys (the IUT is now in Rekey Wait state).
Expected Behaviour	Check that: On receiving a Key Reply message with both known and unknown attributes, the IUT ignores the unknown attributes and refreshes the keys according to the known attributes if these attributes are complete.
Test strategy	
Notes	

TP ID	TP/SS/PKM/TEK/OPN/BI-H001
IEEE 802.16 Reference	clause 6.3.2.3.9, paragraph 6
PICS Item	
Initial Condition	IUT is operational and encrypting. The IUT has sent a Key Request to refresh its keys (the IUT is now in Rekey Wait state).
Expected Behaviour	Check that: On receiving a Key Reject message with both known and unknown attributes, the IUT ignores the unknown attributes and processes the Key Reject according to the known attributes if these attributes are complete.
Test strategy	
Notes	

TP ID	TP/SS/PKM/TEK/OPN/BI-H002
IEEE 802.16 Reference	clause 6.3.2.3.9, paragraph 7
PICS Item	
Initial Condition	IUT is operational and encrypting. The IUT has sent a Key Request to refresh its keys (the IUT is now in Rekey Wait state).
Expected Behaviour	Check that: On receiving a Key Reply with missing required attributes, the IUT discards the Key Replay and remains in the same state.
Test strategy	
Notes	

TP ID	TP/SS/PKM/TEK/OPN/BI-H003
IEEE 802.16 Reference	clause 6.3.2.3.9, paragraph 7
PICS Item	
Initial Condition	IUT is operational and encrypting. The IUT has sent a Key Request to refresh its keys (the IUT is now in Rekey Wait state).
Expected Behaviour	Check that: On receiving a Key Reject with missing required attributes, the IUT discards the Key Replay and remains in the same state.
Test strategy	
Notes	

TP ID	TP/SS/PKM/TEK/OPN/BI-H004
IEEE 802.16 Reference	clause 6.3.2.3.9 "Attributes"
PICS Item	
Initial Condition	IUT is operational and encrypting. The IUT has sent a Key Request to refresh its keys (the IUT is now in Rekey Wait state).
Expected Behaviour	Check that: On receiving a Key Reply message with randomly ordered attributes except for the HMAC which is the last attribute, the IUT decodes the attributes and refreshes the keys.
Test strategy	
Notes	

TP ID	TP/SS/PKM/TEK/OPN/BI-H005
IEEE 802.16 Reference	clause 6.3.2.3.9 "Attributes"
PICS Item	
Initial Condition	IUT is operational and encrypting. The IUT has sent a Key Request to refresh its keys (the IUT is now in Rekey Wait state).
Expected Behaviour	Check that: On receiving a Key Reject message with randomly ordered attributes except for the HMAC which is the last attribute, the IUT decodes the attributes and stops using the keys indicated in the Key Reject.
Test strategy	
Notes	

TP ID	TP/SS/PKM/TEK/OPN/BI-H006
IEEE 802.16 Reference	clause 6.3.2.3.9, paragraph 5 "Code"
PICS Item	
Initial Condition	The IUT is operational and encrypting. The IUT has sent a Key Request message to refresh its keys (the IUT is in the Rekey Wait state).
Expected Behaviour	Check that: On receiving a PKM-RSP MAC message with an invalid PKM packet type code, the IUT does nothing and remains in the same state.
Test strategy	
Notes	

TP ID	TP/SS/PKM/TEK/OPN/BO-H000
IEEE 802.16 Reference	clause 6.3.2.3.9, paragraph 5 "Identifier"
PICS Item	
Initial Condition	IUT is operational and encrypting. The IUT has sent a Key Request to refresh its keys (the IUT is now in Rekey Wait state).
Expected Behaviour	Check that: On receiving a Key Reply whose Identifier field does not match that of the Key Request message, the IUT does nothing and remains in the same state (the IUT remains in the Rekey Wait state).
Test strategy	
Notes	

TP ID	TP/SS/PKM/TEK/OPN/BO-H001
IEEE 802.16 Reference	clause 6.3.2.3.9, paragraph 5 "Identifier"
PICS Item	
Initial Condition	IUT is operational and encrypting. The IUT has sent a Key Request to refresh its keys (the IUT is now in Rekey Wait state).
Expected Behaviour	Check that: On receiving a Key Reject whose Identifier field does not match that of the Key Request message, the IUT does nothing and remains in the same state (the IUT remains in the Rekey Wait state).
Test strategy	
Notes	

5.3.4.3   Security Association Management (SAM)

TP ID	TP/SS/PKM/SAM/BV-H000
IEEE 802.16 Reference	clauses 6.3.2.3.9.1, paragraph 1 and 7.3.1, paragraph 1
PICS Item	
Initial Condition	The IUT is operating
Expected Behaviour	Check that: On receiving a valid SA Add message, the IUT starts a new TEK state machine for each SA listed in the message by sending a Key Request message for each SA.
Test strategy	
Notes	

5.3.4.4   Encryption and Key Scheduling (EKS)

TP ID	TP/SS/PKM/EKS/BV-H000
IEEE 802.16 Reference	clause 7.1.5 Table "Allowed cryptographic suites"
PICS Item	
Initial Condition	IUT has begun SS authorization.
Expected Behaviour	Check that: The IUT supports at least one of the Cryptographic Suites in Table "Allowed cryptographic suites".
Test strategy	
Notes	

TP ID	TP/SS/PKM/EKS/BV-H001
IEEE 802.16 Reference	clause 7.1.4
PICS Item	
Initial Condition	IUT is operational and adding a Dynamic Service (DSA) for a data transport connections.
Expected Behaviour	Check that: The IUT maps all transport connections to an existing SA.
Test strategy	
Notes	

TP ID	TP/SS/PKM/EKS/BV-H002
IEEE 802.16 Reference	clause 7.1.4
PICS Item	
Initial Condition	IUT is operational and adding a Dynamic Service (DSA) for each of several multicast data transport connections.
Expected Behaviour	Check that: The IUT maps the multicast transport connections to any Static or Dynamic SA.
Test strategy	
Notes	

5.3.4.4.1   Key Usage (KU)

TP ID	TP/SS/PKM/EKS/KU/BV-H000
IEEE 802.16 Reference	clause 7.2.1
PICS Item	
Initial Condition	IUT is operational and authorized
Expected Behaviour	Check that: The IUT Simultaneously supports two active AK's during reauthorization.
Test strategy	
Notes	

TP ID	TP/SS/PKM/EKS/KU/BV-H001
IEEE 802.16 Reference	clauses 7.4.2.2 and 7.5.4.3
PICS Item	
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.
Expected Behaviour	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.
Test strategy	
Notes	

TP ID	TP/SS/PKM/EKS/KU/BV-H100
IEEE 802.16 Reference	clauses 7.5.3 and 7.5.4.3
PICS Item	
Initial Condition	PMP only. The IUT is authenticating the Key Request message with HMAC-Digest.
Expected Behaviour	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.
Test strategy	
Notes	

TP ID	TP/SS/PKM/EKS/KU/BV-H101
IEEE 802.16 Reference	clause 7.4.2.2
PICS Item	
Initial Condition	IUT is Operational.
Expected Behaviour	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.
Test strategy	
Notes	

TP ID	TP/SS/PKM/EKS/KU/BV-H200
IEEE 802.16 Reference	clause 7.4.2.2
PICS Item	
Initial Condition	IUT is operational. Two AKs are active. The IUT has transmitted a valid Key Request.
Expected Behaviour	Check that: On receiving a Key Reply message using the older AK sequence number, the IUT Authenticates the Key Reply message and decrypts the TEKs with the KEK using the older AK.
Test strategy	
Notes	

TP ID	TP/SS/PKM/EKS/KU/BV-H201
IEEE 802.16 Reference	clause 7.4.2.2
PICS Item	
Initial Condition	IUT is operational. Two AKs are active. The IUT has transmitted a valid Key Request.
Expected Behaviour	Check that: On receiving a Key Reply message using the newer AK sequence number, the IUT Authenticates the Key Reply message and decrypts the TEKs with the KEK using the newer AK.
Test strategy	
Notes	

TP ID	TP/SS/PKM/EKS/KU/BV-H300
	Deleted

TP ID	TP/SS/PKM/EKS/KU/BV-H301
	Deleted as duplicate of TP/SS/PKM/EKS/KU/BV-H201

TP ID	TP/SS/PKM/EKS/KU/BV-H400
IEEE 802.16 Reference	clause 7.2.4.3, paragraph 2b
PICS Item	
Initial Condition	The IUT is encrypting UL user data for an SAID. The IUT has sent a Key Request to refresh keys for the SAID.
Expected Behaviour	Check that: On receiving a valid Key Reply for the SAID, the IUT encrypts the user data using the newer of the two keys in the Key Reply.
Test strategy	
Notes	

5.3.4.4.2　　　　Encryption (ENC)

TP ID	TP/SS/PKM/EKS/ENC/BV-H000
IEEE 802.16 Reference	clause 7.5 Table "Data encryption algorithm identifiers" Table "SA-Descriptor sub attributes"
PICS Item	
Initial Condition	The IUT is operational. During successful SS authorization and key exchange, the SS has received an SA-Descriptor sub attribute with Cryptographic suite identifier equal to 0x00 for a given SA.
Expected Behaviour	Check that: For the given SA, the IUT does not encrypt the MAC DATA PDU payloads.
Test strategy	
Notes	

TP ID	TP/SS/PKM/EKS/ENC/BV-H001
IEEE 802.16 Reference	clauses 7.5 and 7.5.1.1 Table "Data encryption algorithm identifiers" Table "SA-Descriptor sub attributes"
PICS Item	
Initial Condition	The IUT is operational. During successful SS authorization and key exchange, the IUT has received an SA-Descriptor sub attribute with Cryptographic suite identifier equal to 0x01 for CBC-Mode, 56-bit DES for a given SA.
Expected Behaviour	Check that: For the given SA, the IUT uses the CBC of the DES algorithm to encrypt the MAC DATA PDU payloads.
Test strategy	
Notes	

TP ID	TP/SS/PKM/EKS/ENC/BV-H002
IEEE 802.16 Reference	clauses 7.5 and 7.5.1.2 Table "Data encryption algorithm identifiers" Table "SA-Descriptor sub attributes"
PICS Item	
Initial Condition	The IUT is operational. During successful SS authorization and key exchange, the IUT has received an SA-Descriptor sub attribute with Cryptographic suite identifier equal to 0x02 AES, CCM mode for a given SA.
Expected Behaviour	Check that: For the given SA, the IUT uses the AES, CCM mode to encrypt the MAC DATA PDU payloads.
Test strategy	
Notes	

TP ID	TP/SS/PKM/EKS/ENC/BV-H003
	Deleted

TP ID	TP/SS/PKM/EKS/ENC/BV-H004
IEEE 802.16 Reference	clause 7.5.1.1, paragraph 2
PICS Item	
Initial Condition	PMP_only. The IUT is operational. The IUT is encrypting uplink MAC DATA PDU payloads.
Expected Behaviour	Check that: The IUT initializes the CBC with the XOR the IV parameter transmitted in the TEK keying information and the Frame Number of the frame where the relevant UL-MAP was transmitted.
Test strategy	
Notes	

TP ID	TP/SS/PKM/EKS/ENC/BV-H005
IEEE 802.16 Reference	clauses 7.5 and 7.5.1.1, paragraph 3
PICS Item	
Initial Condition	The IUT is encrypting uplink MAC DATA PDU payloads with DES in CBC mode. The final block of plaintext is of n bits where n is less than 64 bits.
Expected Behaviour	Check that: The IUT uses DES to encrypt 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.
Test strategy	
Notes	

TP ID	TP/SS/PKM/EKS/ENC/BV-H006
IEEE 802.16 Reference	clauses 7.5 and 7.5.1.1, paragraph 3
PICS Item	
Initial Condition	The IUT is encrypting uplink MAC DATA PDU payloads with DES in CBC mode. The entire plaintext is of n bits where n is less than 64 bits.
Expected Behaviour	Check that: The IUT uses DES to encrypt 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.
Test strategy	
Notes	

TP ID	TP/SS/PKM/EKS/ENC/BV-H007
IEEE 802.16 Reference	clauses 7.2.5 and 7.2.5.5, 8-E
PICS Item	
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.
Expected Behaviour	Check that: On receiving a valid Key Reply with 2 keys for each SAID, the IUT encrypts the MAC DATA PDU Payloads according to the refreshed SA keying material for each SAID.
Test strategy	
Notes	

TP ID	TP/SS/PKM/EKS/ENC/BV-H008
IEEE 802.16 Reference	clause 7.4.2.3 Figure "TEK management in BS and SS"
PICS Item	
Initial Condition	IUT is operational and encrypting uplink MAC DATA PDUs.
Expected Behaviour	Check that: Given that one TEK is active, the IUT encrypts the uplink MAC DATA PDUs using the active TEK.
Test strategy	
Notes	

TP ID	TP/SS/PKM/EKS/ENC/BV-H009
IEEE 802.16 Reference	clause 7.4.2.3 Figure "TEK management in BS and SS"
PICS Item	
Initial Condition	IUT is operational and encrypting uplink MAC DATA PDUs.
Expected Behaviour	Check that: Given that two TEKs are active, the IUT encrypts the uplink MAC DATA PDUs using the newer TEK.
Test strategy	
Notes	

TP ID	TP/SS/PKM/EKS/ENC/BV-H010
IEEE 802.16 Reference	clause 11.9.4
PICS Item	
Initial Condition	IUT is encrypting. IUT has transmitted a valid Key Request to refresh keys. The IUT has received a valid Key Reply with 2 keys. One of the key's TEK Parameters indicates a key lifetime of zero.
Expected Behaviour	Check that: On receiving a valid Key Reply with one of the key's TEK Parameters indicates a key lifetime of zero, 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.
Test strategy	
Notes	

TP ID	TP/SS/PKM/EKS/ENC/BV-H100
IEEE 802.16 Reference	clauses 7.2.4.3 "Authorization Invalid" and 7.2.5.5, 3-E Figure "Authorization state machine flow diagram"
PICS Item	
Initial Condition	The IUT is operational and encrypting. The IUT has sent a valid Key Request to rekey (the IUT is now in Authorized and Rekey Wait States).
Expected Behaviour	Check that: On receiving an Auth Invalid message with an Error Code = 5 (Message Authentication Failure), the IUT transitions to the Reauth Wait state and continues to encrypt the MAC DATA PDU payloads throughout the transaction.
Test strategy	
Notes	

TP ID	TP/SS/PKM/EKS/ENC/BV-H101
IEEE 802.16 Reference	clauses 7.2.4.3 "Authorization Invalid" and 7.2.5.5, 4-F Figure "Authorization state machine flow diagram"
PICS Item	
Initial Condition	The IUT is operational and encrypting. It is in the Reauth Wait and Rekey Auth Wait States.
Expected Behaviour	Check that: On receiving a valid Auth Reply, the IUT continues to encrypt the MAC DATA PDU payloads throughout the transaction.
Test strategy	
Notes	

TP ID	TP/SS/PKM/EKS/ENC/BV-H102
IEEE 802.16 Reference	clause 7.2.5.5, 6-E
PICS Item	
Initial Condition	The IUT is encrypting. It has sent valid Key Request to rekey and started the Rekey Wait Timer (the IUT is Rekey Wait state).
Expected Behaviour	Check that: On Rekey Wait Timer expiry without receiving a valid response to the Key Request, the IUT continues to encrypt MAC DATA PDU Payloads throughout the transaction.
Test strategy	
Notes	

TP ID	TP/SS/PKM/EKS/ENC/BV-H103
IEEE 802.16 Reference	clause 7.2.5.5, 8-E
PICS Item	
Initial Condition	IUT is encrypting. Only one SAID (for the Basic CID) is established. IUT has transmitted a valid Key Request to refresh keys.
Expected Behaviour	Check that: On receiving a valid Key Reply with 2 keys, 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.
Test strategy	
Notes	

TP ID	TP/SS/PKM/EKS/ENC/BV-H200
IEEE 802.16 Reference	clause 7.2.5.5, 1-C
PICS Item	
Initial Condition	The IUT is encrypting and in the Op Reauth Wait state.
Expected Behaviour	Check that: On receiving an Auth Reply that does not contain the SAID for the SA that was encrypting, the IUT terminates encryption for the missing SAID.
Test strategy	
Notes	

TP ID	TP/SS/PKM/EKS/ENC/BV-H201
IEEE 802.16 Reference	clause 7.2.5.5, 1-E
PICS Item	
Initial Condition	The IUT is operational and encrypting for an SAID. It has sent a Key Request for key refresh. It has also sent an Auth Req to reauthorize (the IUT is now in Reauth Wait and Rekey Wait states).
Expected Behaviour	Check that: When the IUT's Authorization FSM terminates the TEK FSM for the given SAID, the IUT terminates encryption for the SAID.
Test strategy	
Notes	

TP ID	TP/SS/PKM/EKS/ENC/BV-H202
IEEE 802.16 Reference	clause 7.2.5.5, 1-F
PICS Item	
Initial Condition	The IUT is operational and encrypting for an SAID. It has sent a Key Request for key refresh. It has also sent an Auth Req to reauthorize (the IUT is now in Reauth Wait and Rekey Reauth Wait states).
Expected Behaviour	Check that: On receiving an Auth Reply that does not include the SA Descriptor for the SAID, the IUT terminates encryption for the missing SAID.
Test strategy	
Notes	

5.3.4.4.3   Decryption (DEC)

TP ID	TP/SS/PKM/EKS/DEC/BV-H000
IEEE 802.16 Reference	clause 7.5 Table "Data encryption algorithm identifiers" Table "SA-Descriptor sub attributes"
PICS Item	
Initial Condition	The IUT is operational. During successful SS authorization and key exchange, the SS has received an SA-Descriptor sub attribute with Cryptographic suite identifier equal to 0x00 for a given SA.
Expected Behaviour	Check that: For the given SA, the IUT does not decrypt the MAC DATA PDU payloads.
Test strategy	
Notes	Require a means to determine if the received DATA PDUs are decrypted correctly.

TP ID	TP/SS/PKM/EKS/DEC/BV-H001
IEEE 802.16 Reference	clauses 7.5 and 7.5.1.1 Table "Data encryption algorithm identifiers" Table "SA-Descriptor sub attributes"
PICS Item	
Initial Condition	The IUT is operational. During successful SS authorization and key exchange, the IUT has received an SA-Descriptor sub attribute with Cryptographic suite identifier equal to 0x01 for CBC-Mode, 56-bit DES for a given SA.
Expected Behaviour	Check that: For the given SA, the IUT uses the CBC of the DES algorithm to decrypt the MAC DATA PDU payloads.
Test strategy	
Notes	Require a means to determine if the received DATA PDUs are decrypted correctly.

TP ID	TP/SS/PKM/EKS/DEC/BV-H002
IEEE 802.16 Reference	clauses 7.5 and 7.5.1.2 Table "Data encryption algorithm identifiers" Table "SA-Descriptor sub attributes"
PICS Item	
Initial Condition	The IUT is operational. During successful SS authorization and key exchange, the IUT has received an SA-Descriptor sub attribute with Cryptographic suite identifier equal to 0x02 AES, CCM mode for a given SA.
Expected Behaviour	Check that: For the given SA, the IUT uses the AES, CCM mode to decrypt the MAC DATA PDU payloads.
Test strategy	
Notes	Require a means to determine if the received DATA PDUs are decrypted correctly.

TP ID	TP/SS/PKM/EKS/DEC/BV-H003
IEEE 802.16 Reference	clauses 7.5, 7.5.1.1, 11.9.8 and 11.9.9
PICS Item	
Initial Condition	PMP_only. The IUT is operational. The IUT is decrypting downlink MAC DATA PDU payloads.
Expected Behaviour	Check that: The IUT Uses a CBC calculated by XOR-ing the CBC-IV transmitted in the TEK parameters sub attributes.
Test strategy	
Notes	Require a means to determine if the received DATA PDUs are decrypted correctly.

TP ID	TP/SS/PKM/EKS/DEC/BV-H004
IEEE 802.16 Reference	clauses 7.5 and 7.5.1.1
PICS Item	
Initial Condition	The IUT is operational. The IUT is decrypting downlink MAC DATA PDU payloads using DES. The final block of plaintext is of n bits where n is less than 64 bits.
Expected Behaviour	Check that: The IUT decrypts using DES 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 clear text block.
Test strategy	
Notes	Require a means to determine if the received DATA PDUs are decrypted correctly.

TP ID	TP/SS/PKM/EKS/DEC/BV-H005
IEEE 802.16 Reference	clauses 7.5 and 7.5.1.1
PICS Item	
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.
Expected Behaviour	Check that: The IUT correctly decrypts the entire plaintext.
Test strategy	
Notes	Require a means to determine if the received DATA PDUs are decrypted correctly.

TP ID	TP/SS/PKM/EKS/DEC/BV-H006
IEEE 802.16 Reference	clauses 7.2.5 and 7.2.5.5, 8-E
PICS Item	
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.
Expected Behaviour	Check that: On receiving a valid Key Reply with 2 keys for each SAID, the IUT decrypts the MAC DATA PDU Payloads according to the refreshed SA keying material for each SAID.
Test strategy	
Notes	Require a means to determine if the received DATA PDUs are decrypted correctly.

TP ID	TP/SS/PKM/EKS/DEC/BV-H007
IEEE 802.16 Reference	clause 7.4.2.3 Figure "TEK management in BS and SS"
PICS Item	
Initial Condition	IUT is operational and decrypting downlink MAC DATA PDUs.
Expected Behaviour	Check that: Given that one TEK is active, the IUT decrypts the downlink MAC DATA PDUs using the active TEK.
Test strategy	
Notes	Require a means to determine if the received DATA PDUs are decrypted correctly.

TP ID	TP/SS/PKM/EKS/DEC/BV-H008
IEEE 802.16 Reference	clause 7.4.2.3 Figure "TEK management in BS and SS"
PICS Item	
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.
Expected Behaviour	Check that: The IUT decrypts the MAC DATA PDUs.
Test strategy	
Notes	Require a means to determine if the received DATA PDUs are decrypted correctly.

TP ID	TP/SS/PKM/EKS/DEC/BV-H009
IEEE 802.16 Reference	clause 7.4.2.3 Figure "TEK management in BS and SS"
PICS Item	
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.
Expected Behaviour	Check that: The IUT decrypts the MAC DATA PDUs.
Test strategy	
Notes	Require a means to determine if the received DATA PDUs are decrypted correctly.

TP ID	TP/SS/PKM/EKS/DEC/BV-H100
IEEE 802.16 Reference	clauses 7.2.4.3 "Authorization Invalid" and 7.2.5.5, 3-E Figure "Authorization state machine flow diagram"
PICS Item	
Initial Condition	The IUT is operational and decrypting. The IUT has sent a valid Key Request to rekey (the IUT is now in Authorized and Rekey Wait States).
Expected Behaviour	Check that: On receiving an Auth Invalid message with an Error Code = 5 (Message Authentication Failure), the IUT continues to decrypt the MAC DATA PDU payloads throughout the transaction.
Test strategy	
Notes	Require a means to determine if the received DATA PDUs are decrypted correctly.

TP ID	TP/SS/PKM/EKS/DEC/BV-H101
IEEE 802.16 Reference	clauses 7.2.4.3 "Authorization Invalid" and 7.2.5.5, 4-F Figure "Authorization state machine flow diagram"
PICS Item	
Initial Condition	The IUT is operational and encrypting. It is in the Reauth Wait and Rekey Auth Wait States.
Expected Behaviour	Check that: On receiving a valid Auth Reply, the IUT continues to decrypt the MAC DATA PDU payloads throughout the transaction.
Test strategy	
Notes	Require a means to determine if the received DATA PDUs are decrypted correctly.

TP ID	TP/SS/PKM/EKS/DEC/BV-H102
IEEE 802.16 Reference	clause 7.2.5.5, 6-E
PICS Item	
Initial Condition	The IUT is encrypting. It has sent valid Key Request to rekey and started the Rekey Wait Timer (the IUT is Rekey Wait state).
Expected Behaviour	Check that: On Rekey Wait Timer expiry without receiving a valid response to the Key Request, the IUT decrypts MAC DATA PDU Payloads throughout the transaction.
Test strategy	
Notes	Require a means to determine if the received DATA PDUs are decrypted correctly.

TP ID	TP/SS/PKM/EKS/DEC/BV-H103
IEEE 802.16 Reference	clause 7.2.5.5, 8-E
PICS Item	
Initial Condition	IUT is encrypting. Only one SAID (for the Basic CID) is established. IUT has transmitted a valid Key Request to refresh keys.
Expected Behaviour	Check that: On receiving a valid Key Reply with 2 keys, the IUT decrypts the MAC DATA PDU Payload according to the refreshed SA keying material. Decryption of MAC DATA PDU Payloads continues throughout the transaction.
Test strategy	
Notes	Require a means to determine if the received DATA PDUs are decrypted correctly.

TP ID	TP/SS/PKM/EKS/DEC/BV-H200
IEEE 802.16 Reference	clause 7.2.5.5, 1-C
PICS Item	
Initial Condition	The IUT is encrypting and in the Op Reauth Wait state.
Expected Behaviour	Check that: On receiving an Auth Reply that does not contain the SAID for the SA that was decrypting, the IUT terminates decryption for the missing SAID.
Test strategy	
Notes	Require a means to determine if the received DATA PDUs are decrypted correctly.

TP ID	TP/SS/PKM/EKS/DEC/BV-H201
IEEE 802.16 Reference	clause 7.2.5.5, 1-E
PICS Item	
Initial Condition	The IUT is operational and encrypting for an SAID. It has sent a Key Request for key refresh. It has also sent an Auth Req to reauthorize (the IUT is now in Reauth Wait and Rekey Wait states).
Expected Behaviour	Check that: When the IUT's Authorization FSM terminates the TEK FSM for the given SAID, the IUT terminates decryption for the SAID.
Test strategy	
Notes	Require a means to determine if the received DATA PDUs are decrypted correctly.

TP ID	TP/SS/PKM/EKS/DEC/BV-H202
IEEE 802.16 Reference	clause 7.2.5.5, 1-F
PICS Item	
Initial Condition	The IUT is operational and encrypting for an SAID. It has sent a Key Request for key refresh. It has also sent an Auth Req to reauthorize (the IUT is now in Reauth Wait and Rekey Reauth Wait states).
Expected Behaviour	Check that: On receiving an Auth Reply that does not include the SA Descriptor for the SAID, the IUT terminates decryption for the missing SAID.
Test strategy	
Notes	Require a means to determine if the received DATA PDUs are decrypted correctly.

TP ID	TP/SS/PKM/EKS/DEC/BI-H000
IEEE 802.16 Reference	clause 6.3.3.6
PICS Item	
Initial Condition	IUT is operational.
Expected Behaviour	Check that: On receiving an unencrypted MAC DATA PDU mapped to an SA requiring encryption, the IUT discards the MAC PDU.
Test strategy	
Notes	Require a means to determine if the received DATA PDUs are decrypted correctly.

5.3.4.5   Certificates (CERT)

TP ID	TP/SS/PKM/CERT/BV-H000
IEEE 802.16 Reference	clause 7.6.1.1
PICS Item	
Initial Condition	IUT uses X.509 Version 3 Certification.
Expected Behaviour	Check that: The IUT's certificate has a validity period greater than its operational lifetime.
Test strategy	
Notes	

TP ID	TP/SS/PKM/CERT/BV-H001
IEEE 802.16 Reference	clause 7.6.1.1
PICS Item	
Initial Condition	IUT uses X.509 Version 3 Certification.
Expected Behaviour	Check that: The validity period of the IUT's certificate begins with date of the certificate's generation.
Test strategy	
Notes	

TP ID	TP/SS/PKM/CERT/BV-H002
IEEE 802.16 Reference	clause 7.6.1.1
PICS Item	
Initial Condition	IUT uses X.509 Version 3 Certification.
Expected Behaviour	Check that: The IUT encodes validity periods as UTC time including seconds and zero values down to and including seconds.
Test strategy	
Notes	

TP ID	TP/SS/PKM/CERT/BV-H003
IEEE 802.16 Reference	clause 7.6.1.2
PICS Item	
Initial Condition	IUT uses X.509 Version 3 Certification.
Expected Behaviour	Check that: The IUT's certificate serial number is larger than another SS's serial number for the same manufacturer when the IUT was manufactured after the other. If the IUT was manufactured before the other SS, the IUT's number is smaller. The time of manufacture is taken from the field tbsCertificate.validity.notBefore.
Test strategy	
Notes	

TP ID	TP/SS/PKM/CERT/BV-H004
IEEE 802.16 Reference	clause 7.6.1.3
PICS Item	
Initial Condition	IUT uses X.509 Version 3 Certification using the SHA-1 with RSA signature algorithm.
Expected Behaviour	Check that: The IUT sets the parameters component of the AlgorithmIdentifier type to the ASN.1 type NULL for tbsCertificate.signature and signatureAlgorithm.
Test strategy	
Notes	

TP ID	TP/SS/PKM/CERT/BV-H005
IEEE 802.16 Reference	clause 7.6.1.4
PICS Item	
Initial Condition	IUT uses X.509 Version 3 Certification.
Expected Behaviour	Check that: The IUT uses a 2-character PrintableString from ISO 3166 [i.1] for the countryName attribute in tbsCertificate.issuer and tbsCertificate.subject.
Test strategy	
Notes	

TP ID	TP/SS/PKM/CERT/BV-H006
IEEE 802.16 Reference	clause 7.6.1.4
PICS Item	
Initial Condition	IUT uses X.509 Version 3 Certification.
Expected Behaviour	Check that: The IUT encodes all other AttributeValues as either T.61/TeletexString or PrintableString character strings for the countryName attribute in tbsCertificate.issuer and tbsCertificate.subject. The IUT uses PrintableString encoding if the character string contains only characters from the PrintableString character set.
Test strategy	
Notes	

TP ID	TP/SS/PKM/CERT/BV-H007
IEEE 802.16 Reference	clause 7.6.1.4
PICS Item	
Initial Condition	IUT uses X.509 Version 3 Certification.
Expected Behaviour	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}.
Test strategy	
Notes	

TP ID	TP/SS/PKM/CERT/BV-H008
IEEE 802.16 Reference	clause 7.6.1.4.1
PICS Item	
Initial Condition	IUT uses X.509 Version 3 Certification.
Expected Behaviour	Check that: If the certificate contains the organizationalUnitName representing the manufacturing location, then the IUT precedes that field with an organizationalUnitName field having the value "WirelessMAN".
Test strategy	
Notes	

TP ID	TP/SS/PKM/CERT/BV-H009
IEEE 802.16 Reference	clause 7.6.1.8
PICS Item	
Initial Condition	IUT uses X.509 Version 3 Certification.
Expected Behaviour	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 signatureValue field.
Test strategy	
Notes	

TP ID	TP/SS/PKM/CERT/BV-H010
IEEE 802.16 Reference	clause 7.6.1.6
PICS Item	
Initial Condition	IUT uses X.509 Version 3 Certification.
Expected Behaviour	Check that: IUT's Manufacturers and SS Certificates omit the issuerUniqueID and subjectUniqueID fields.
Test strategy	
Notes	

TP ID	TP/SS/PKM/CERT/BV-H100
IEEE 802.16 Reference	clause 7.6.1.4.1
PICS Item	
Initial Condition	IUT uses X.509 Version 3 Certification.
Expected Behaviour	Check that: The IUT has the following fields and values in the Manufacturer's Certificate: countryName=<Country of Manufacturer>; organizationName=<Company Name>; organizationalUnitName=WirelessMAN (literal value); commonName=<Company Name>.
Test strategy	
Notes	

TP ID	TP/SS/PKM/CERT/BV-H101
IEEE 802.16 Reference	clause 7.6.1.4.1
PICS Item	
Initial Condition	IUT uses X.509 Version 3 Certification.
Expected Behaviour	Check that: The IUT has no other attributes in the Manufacturer's Certificate than the following: countryName; stateOrProvinceName OPTIONAL; localityName OPTIONAL; organizationName; organizationalUnitName (possibly two times, one OPTIONAL); commonName.
Test strategy	
Notes	

TP ID	TP/SS/PKM/CERT/BV-H102
IEEE 802.16 Reference	clause 7.6.1.7.2
PICS Item	
Initial Condition	IUT uses X.509 Version 3 Certification.
Expected Behaviour	Check that: The IUT does not place critical extensions in the Manufacturer's Certificate other than the optional Basic Constraints extension.
Test strategy	
Notes	

TP ID	TP/SS/PKM/CERT/BV-H103
IEEE 802.16 Reference	clause 7.6.1.7.2
PICS Item	
Initial Condition	IUT uses X.509 Version 3 Certification.
Expected Behaviour	Check that: When the KeyUsage extension is present in the Manufacturer's Certificate, the IUT sets to one the keyCertSign bit and clears to zero all other bits.
Test strategy	
Notes	

TP ID	TP/SS/PKM/CERT/BV-H104
IEEE 802.16 Reference	clause 7.6.2
PICS Item	
Initial Condition	IUT uses X.509 Version 3 Certification.

Expected Behaviour	Check that: When a manufacturer issues SS certificates with multiple specific Manufacturer CA certificates, check that:
	    the IUT's software includes all of the Manufacturer's Certificates; and
	    the IUT uses the Manufacturer's Certificate in Auth Info messages that
	    identifies the issuer of the SS Certificate.

Test strategy	
Notes	

TP ID	TP/SS/PKM/CERT/BV-H200
IEEE 802.16 Reference	clause 7.6.1.4.2
PICS Item	
Initial Condition	IUT uses X.509 Version 3 Certification.
Expected Behaviour	Check that: The IUT's SS Certificate has the following fields and attributes with no other additional attributes: countryName=<Country of Manufacturer>; organizationName=<Company Name>; organizationalUnitName=<manufacturing location>; commonName=<Serial Number>; commonName=<MAC Address>.
Test strategy	
Notes	

TP ID	TP/SS/PKM/CERT/BV-H201
IEEE 802.16 Reference	clause 7.6.1.7.1
PICS Item	
Initial Condition	IUT uses X.509 Version 3 Certification.
Expected Behaviour	Check that: The IUT does not place critical extensions in the SS Certificate.
Test strategy	
Notes	

TP ID	TP/SS/PKM/CERT/BV-H202
IEEE 802.16 Reference	clause 7.6.1.7.1
PICS Item	
Initial Condition	IUT uses X.509 Version 3 Certification.
Expected Behaviour	Check that: When the KeyUsage extension is present in the SS Certificate, the IUT sets to one the keyAgreement and keyEncipherment bits and clears to zero the keyCertSign, cRLSign, and all other bits.
Test strategy	
Notes	

TP ID	TP/SS/PKM/CERT/BV-H203
IEEE 802.16 Reference	clause 7.6.2
PICS Item	
Initial Condition	IUT uses X.509 Version 3 Certification.
Expected Behaviour	Check that: The IUT stores manufacturer-issued SS Certificates in SS permanent, write-once memory.
Test strategy	
Notes	

TP ID	TP/SS/PKM/CERT/BV-H204
IEEE 802.16 Reference	clause 7.6.2
PICS Item	
Initial Condition	IUT uses X.509 Version 3 Certification.
Expected Behaviour	Check that: When the IUT has factory-installed RSA private/public key pairs, the IUT contains factory-installed SS Certificates as well.
Test strategy	
Notes	

TP ID	TP/SS/PKM/CERT/BV-H205
IEEE 802.16 Reference	clause 7.6.2
PICS Item	
Initial Condition	IUT uses X.509 Version 3 Certification.
Expected Behaviour	Check that: When relying on internal algorithms to generate an RSA key pair, the IUT supports a mechanism for installing a manufacturer-issued SS Certificate following key generation.
Test strategy	
Notes	

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TP ID	TP/SS/PKM/CERT/BV-H206
IEEE 802.16 Reference	clause 7.6.2
PICS Item	
Initial Condition	IUT uses X.509 Version 3 Certification.
Expected Behaviour	Check that: The IUT has embedded in its software the CA certificate of the Manufacturer CA that signed the SS Certificate.
Test strategy	
Notes	

5.3.5 Dynamic Services (DS)

5.3.5.1 Dynamic Services Addition (DSA)

TP ID	TP/SS/DS/DSA/BV-H000
IEEE 802.16 Reference	clauses 6.3.14.7.1.2 and 6.3.2.3.11
PICS Item	
Initial Condition	The IUT has completed initialization and is now operational.
Expected Behaviour	Check that: For each uplink grant scheduling type (e.g. BE, nrtPS, etc) the IUT supports, on receiving a DSA-REQ containing all necessary Service Flow Parameters and Convergence Sub layer Parameters and HMAC Tuple to establish an UL service flow, the IUT transmits a valid DSA-RSP with a Confirmation Code set to OK/success.
Test strategy	Straightforward.
Notes	

TP ID	TP/SS/DS/DSA/BV-H001
IEEE 802.16 Reference	clauses 6.3.14.7.1.2 and 6.3.2.3.11
PICS Item	
Initial Condition	The IUT has completed initialization and is now operational.
Expected Behaviour	Check that: On receiving a DSA-REQ containing all necessary Service Flow Parameters and Convergence Sub layer Parameters and HMAC Tuple to establish a DL service flow, the IUT transmits a valid DSA-RSP with a Confirmation Code set to OK/success.
Test strategy	Straightforward.
Notes	

TP ID	TP/SS/DS/DSA/BV-H002
IEEE 802.16 Reference	clauses 6.3.14.7.1.2 and 6.3.2.3.12
PICS Item	
Initial Condition	A BS-initiated DSA transaction has started. The IUT has received a valid DSA-REQ for an UL service flow and sent a valid DSA-RSP accepting the DSA-REQ.
Expected Behaviour	Check that: For each uplink grant scheduling type (e.g. BE, nrtPS, etc) the IUT supports, on receiving a DSA-ACK with Confirmation Code set to OK/success; the IUT is able to transmit service flow data on the connection.
Test strategy	Straightforward up to the point where the IUT begins transmitting data. Requires the IUT to have an application or another means to begin sending data over the service flow.
Notes	

TP ID	TP/SS/DS/DSA/BV-H003
IEEE 802.16 Reference	clauses 6.3.14.7.1.2 and 6.3.2.3.12
PICS Item	
Initial Condition	A BS-initiated DSA transaction has started. The IUT has received a valid DSA-REQ for a DL service flow and sent a valid DSA-RSP accepting the DSA-REQ.
Expected Behaviour	Check that: On receiving a DSA-ACK with Confirmation Code set to OK/success; the IUT is able to receive service flow data on the connection.
Test strategy	Straightforward.
Notes	

TP ID	TP/SS/DS/DSA/BV-H004
IEEE 802.16 Reference	clauses 6.3.2.3.10, 6.3.2.3.11, 6.3.2.3.12 and 6.3.14.7.1.1
PICS Item	
Initial Condition	IUT is authorized and registered.
Expected Behaviour	Check that: To create a Service flow, the IUT sends a DSA-REQ (the IUT is now in the DSA-RSP pending state).
Test strategy	Straightforward.
Notes	Requires a means to provoke the IUT to establish the service flow with a DSA-REQ.

TP ID	TP/SS/DS/DSA/BV-H005
IEEE 802.16 Reference	clauses 6.3.2.3.10 and 6.3.14.7.1.1
PICS Item	
Initial Condition	IUT is authorized and registered. The IUT has sent a DSA-REQ message.
Expected Behaviour	Check that: On receiving a DSX-RVD and then a DSA-RSP containing the Confirmation Code set to OK/success, the IUT does not retransmit the DSA-REQ.
Test strategy	
Notes	Requires a means to provoke the IUT to establish the service flow with a DSA-REQ.

TP ID	TP/SS/DS/DSA/BV-H006
IEEE 802.16 Reference	clauses 6.3.2.3.10, 6.3.2.3.11, 6.3.2.3.12 and 6.3.14.7.1.1
PICS Item	
Initial Condition	IUT is authorized and registered. The IUT has sent a DSA-REQ message.
Expected Behaviour	Check that: On receiving a DSX-RVD and then a DSA-RSP containing the Confirmation Code set to OK/success, the IUT sends a DSA-ACK.
Test strategy	
Notes	Requires a means to provoke the IUT to establish the service flow with a DSA-REQ.

TP ID	TP/SS/DS/DSA/BV-H007
IEEE 802.16 Reference	clauses 6.3.2.3.10, 6.3.2.3.11, 6.3.2.3.12 and 6.3.14.7.1.2
PICS Item	
Initial Condition	A BS-initiated DSA transaction has started. The IUT has received a valid DSA-REQ for a service flow and sent a valid DSA-RSP accepting the DSA-REQ.
Expected Behaviour	Check that: On receiving a DSA-ACK containing the associated Transaction ID, the Confirmation Code set to reject-other, the IUT accepts the message and goes into DSA-Remote Holding down state of the DSA state machine.
Test strategy	
Notes	

TP ID	TP/SS/DS/DSA/BV-H008
IEEE 802.16 Reference	clauses 6.3.2.3.10, 6.3.2.3.11, 6.3.2.3.12 and 6.3.14.7.1.2
PICS Item	
Initial Condition	A BS-initiated DSA transaction has started. The IUT has received a valid DSA-REQ for a service flow and has sent a valid DSA-RSP accepting the DSA-REQ. Then the IUT has received a valid DSA-ACK and is now into DSA-Remote Holding down state of the DSA state machine.
Expected Behaviour	Check that: On receiving a DSA-ACK containing the associated Transaction ID and the Confirmation Code set to OK/success, the IUT accepts the message and remains into DSA-Remote Holding down state of the DSA state machine.
Test strategy	
Notes	

TP ID	TP/SS/DS/DSA/BV-H009
IEEE 802.16 Reference	clauses 6.3.2.3.10, 6.3.2.3.11, 6.3.2.3.12 and 6.3.14.7.1.2
PICS Item	
Initial Condition	A BS-initiated DSA transaction has started. The IUT has received a valid DSA-REQ for a service flow and has sent a valid DSA-RSP accepting the DSA-REQ. Then the IUT has received a valid DSA-ACK and is now into DSA-Remote Holding down state of the DSA state machine.
Expected Behaviour	Check that: On receiving a DSA-ACK containing the associated Transaction ID and the Confirmation Code set to reject-other, the IUT accepts the message and remains into DSA-Remote Holding down state of the DSA state machine.
Test strategy	
Notes	

TP ID	TP/SS/DS/DSA/BV-H010
IEEE 802.16 Reference	clauses 6.3.2.3.10, 6.3.2.3.11, 6.3.2.3.12 and 6.3.14.7.1.1
PICS Item	
Initial Condition	IUT is authorized and registered. The IUT has sent a DSA-REQ message.
Expected Behaviour	Check that: On receiving a DSX-RVD and then a DSA-RSP containing the Confirmation Code set to reject-other, the IUT sends a DSA-ACK containing the Confirmation Code set to OK/success.
Test strategy	
Notes	Requires a means to provoke the IUT to establish the service flow with a DSA-REQ.

TP ID	TP/SS/DS/DSA/BV-H011
IEEE 802.16 Reference	clauses 6.3.2.3.10, 6.3.2.3.11, 6.3.2.3.12 and 6.3.14.7.1.1
PICS Item	
Initial Condition	IUT is authorized and registered. The IUT has sent a DSA-REQ message.
Expected Behaviour	Check that: On receiving a DSA-RSP containing the Confirmation Code set to OK/success, the IUT sends a DSA-ACK containing the Confirmation Code set to OK/success.
Test strategy	
Notes	Requires a means to provoke the IUT to establish the service flow with a DSA-REQ.

TP ID	TP/SS/DS/DSA/BV-H012
IEEE 802.16 Reference	clauses 6.3.2.3.10, 6.3.2.3.11, 6.3.2.3.12 and 6.3.14.7.1.1
PICS Item	
Initial Condition	IUT is authorized and registered. The IUT has sent a DSA-REQ message.
Expected Behaviour	Check that: On receiving a DSA-RSP containing the Confirmation Code set to reject-other, the IUT sends a DSA-ACK containing the Confirmation Code set to OK/success.
Test strategy	
Notes	Requires a means to provoke the IUT to establish the service flow with a DSA-REQ.

TP ID	TP/SS/DS/DSA/BV-H013
IEEE 802.16 Reference	clauses 6.3.2.3.10, 6.3.2.3.11, 6.3.2.3.12 and 6.3.14.7.1.1
PICS Item	
Initial Condition	IUT is authorized and registered. The IUT has sent a DSA-REQ message. Then the IUT has received a DSA_RSP and has sent a DSA-ACK. The IUT is now into DSA Local Holding Down state of the DSA state machine.
Expected Behaviour	Check that: On receiving a DSA-RSP containing the Confirmation Code set to OK/success, the IUT re-sends the previously saved DSA-ACK message.
Test strategy	
Notes	Requires a means to provoke the IUT to establish the service flow with a DSA-REQ.

TP ID	TP/SS/DS/DSA/BV-H014
IEEE 802.16 Reference	clauses 6.3.2.3.10 and 6.3.2.3.11
PICS Item	
Initial Condition	IUT is authorized and registered. The IUT has started the TFTP transaction. There are no preprovisioned DS service flows to establish.
Expected Behaviour	Check that: On receiving a valid TFTP-RSP followed by a BS-initiated DSA-REQ, the IUT transmits a DSA-RSP.
Test strategy	
Notes	

TP ID	TP/SS/DS/DSA/BV-H015
IEEE 802.16 Reference	Figure "DSA - Locally Initiated Transaction state transition diagram" Figure "DSA - Locally Initiated Transaction DSA-RSP Pending state flow diagram"
PICS Item	
Initial Condition	An SS-initiated DSA transaction has started. The IUT is in the DSA-RSP pending state.
Expected Behaviour	Check that: On receiving a DSX-RVD for the pending DSA transaction, the IUT stops the T14 and remains in the same state.
Test strategy	
Notes	

TP ID	TP/SS/DS/DSA/BV-H016
IEEE 802.16 Reference	Figure "DSA - Locally Initiated Transaction state transition diagram" Figure "DSA - Locally Initiated Transaction Retries Exhausted state flow diagram"
PICS Item	
Initial Condition	An SS-initiated DSA transaction has started. The IUT is in the Retries Exhausted state.
Expected Behaviour	Check that: On receiving a DSA-RSP for the pending DSA transaction, the transmits a DSA-ACK, starts T10, and goes to the Holding Down state. If the DSA-RSP indicates accepts establishing the service flow, the IUT enables the service flow.
Test strategy	
Notes	

TP ID	TP/SS/DS/DSA/BO-H000
IEEE 802.16 Reference	clause 6.3.2.3.12
PICS Item	
Initial Condition	IUT is authorized and registered.
Expected Behaviour	Check that: On receiving a DSA-ACK for a non existing service flow, the IUT ignores the received DSA-ACK message.
Test strategy	
Notes	

TP ID	TP/SS/DS/DSA/BO-H001
IEEE 802.16 Reference	clauses 6.3.2.3.10, 6.3.2.3.11, 6.3.2.3.12 and 6.3.14.7.1.2
PICS Item	
Initial Condition	A BS-initiated DSA transaction has started. The IUT has received a valid DSA-REQ for a service flow and has sent a valid DSA-RSP accepting the DSA-REQ. Then the IUT has received a valid DSA-ACK and is now into DSA-Remote Holding down state of the DSA state machine.
Expected Behaviour	Check that: On receiving a DSA-REQ message, the IUT ignores the message and remains in DSA-Remote Holding down state of the DSA state machine.
Test strategy	
Notes	

TP ID	TP/SS/DS/DSA/BO-H002
IEEE 802.16 Reference	Figure "DSA - Remotely Initiated Transaction state transition diagram" Figure "DSA - Remotely Initiated Transaction DSA-ACK Pending state flow diagram"
PICS Item	
Initial Condition	A BS-initiated DSA transaction has started. The IUT is in the DSA-ACK Pending state.
Expected Behaviour	Check that: On receiving the SF Delete-Remote command, the IUT ends the DSA transaction.
Test strategy	
Notes	Requires a means of provoking the SF Delete-Remote; e.g. DSD-REQ or MIB command.

TP ID	TP/SS/DS/DSA/BO-H003
IEEE 802.16 Reference	Figure "DSA - Remotely Initiated Transaction state transition diagram" Figure "DSA - Remotely Initiated Transaction DSA-ACK Pending state flow diagram"
PICS Item	
Initial Condition	A BS-initiated DSA transaction has started. The IUT is in the DSA-ACK Pending state.
Expected Behaviour	Check that: On receiving the SF Delete-Local command, the IUT sends no message and goes to the Deleting Service Flow state.
Test strategy	
Notes	Requires a means of provoking the SF Delete-Local; e.g. MIB command.

TP ID	TP/SS/DS/DSA/BO-H004
IEEE 802.16 Reference	Figure "DSA - Remotely Initiated Transaction state transition diagram" Figure "DSA - Remotely Initiated Transaction DSA-ACK Pending state flow diagram"
PICS Item	
Initial Condition	A BS-initiated DSA transaction has started. The IUT is in the DSA-ACK Pending state.
Expected Behaviour	Check that: On receiving the SF DSA-ACK Lost command and retries are available, the IUT retransmits the DSA-RSP and remains in the same state.
Test strategy	
Notes	Requires a means of provoking the SF DSA-ACK Lost; e.g. MIB command.

TP ID	TP/SS/DS/DSA/BO-H005
IEEE 802.16 Reference	Figure "DSA - Remotely Initiated Transaction state transition diagram" Figure "DSA - Remotely Initiated Transaction DSA-ACK Pending state flow diagram"
PICS Item	
Initial Condition	A BS-initiated DSA transaction has started. The IUT is in the DSA-ACK Pending state.
Expected Behaviour	Check that: On receiving the SF DSA-ACK Lost command and retries are exhausted, the IUT sends no message and remains in the same state.
Test strategy	
Notes	Requires a means of provoking the SF DSA-ACK Lost; e.g. MIB command.

TP ID	TP/SS/DS/DSA/BO-H006
IEEE 802.16 Reference	Figure "DSA - Remotely Initiated Transaction state transition diagram" Figure "DSA - Remotely Initiated Transaction Holding Down state flow diagram"
PICS Item	
Initial Condition	A BS-initiated DSA transaction has started. The IUT is in the Holding Down state.
Expected Behaviour	Check that: On receiving the SF Changed command, the IUT sends no message and ends the DSA transaction.
Test strategy	
Notes	Requires a means of provoking the SF Changed; e.g. MIB command.

TP ID	TP/SS/DS/DSA/BO-H007
IEEE 802.16 Reference	Figure "DSA - Remotely Initiated Transaction state transition diagram" Figure "DSA - Remotely Initiated Transaction Holding Down state flow diagram"
PICS Item	
Initial Condition	A BS-initiated DSA transaction has started. The IUT is in the Holding Down state.
Expected Behaviour	Check that: On receiving the SF Deleted command, the IUT sends no message and ends the DSA transaction.
Test strategy	
Notes	Requires a means of provoking the SF Deleted; e.g. MIB command.

TP ID	TP/SS/DS/DSA/BO-H008
IEEE 802.16 Reference	Figure "DSA - Remotely Initiated Transaction state transition diagram" Figure "DSA - Remotely Initiated Transaction Holding Down state flow diagram"
PICS Item	
Initial Condition	A BS-initiated DSA transaction has started. The IUT is in the Holding Down state.
Expected Behaviour	Check that: On receiving the SF Delete-Remote command, the IUT sends no message and ends the DSA transaction.
Test strategy	
Notes	Requires a means of provoking the SF Delete-Remote; e.g. DSD-REQ or MIB command.

TP ID	TP/SS/DS/DSA/BO-H009
IEEE 802.16 Reference	Figure "DSA - Remotely Initiated Transaction state transition diagram" Figure "DSA - Remotely Initiated Transaction Holding Down state flow diagram"
PICS Item	
Initial Condition	A BS-initiated DSA transaction has started. The IUT is in the Holding Down state.
Expected Behaviour	Check that: On receiving the SF Delete-Local command, the IUT sends no message and remains in the same state.
Test strategy	
Notes	Requires a means of provoking the SF Delete-Local; e.g. MIB command.

TP ID	TP/SS/DS/DSA/BO-H010
IEEE 802.16 Reference	Figure "DSA - Remotely Initiated Transaction state transition diagram" Figure "DSA - Remotely Initiated Transaction Holding Down state flow diagram"
PICS Item	
Initial Condition	A BS-initiated DSA transaction has started. The IUT is in the Holding Down state.
Expected Behaviour	Check that: On receiving the SF Change-Remote command, the IUT sends no message and ends the DSA transaction.
Test strategy	
Notes	Requires a means of provoking the SF Change-Remote; e.g. DSC-REQ or MIB command.

TP ID	TP/SS/DS/DSA/BO-H011
IEEE 802.16 Reference	Figure "DSA - Remotely Initiated Transaction state transition diagram" Figure "DSA - Remotely Initiated Transaction Deleting Service state flow diagram"
PICS Item	
Initial Condition	A BS-initiated DSA transaction has started. The IUT is in the Deleting Service Flow state.
Expected Behaviour	Check that: On receiving the SF Deleted command, the IUT sends no message and ends the DSA transaction.
Test strategy	
Notes	Requires a means of provoking the SF Deleted; e.g. MIB command.

TP ID	TP/SS/DS/DSA/BO-H012
IEEE 802.16 Reference	Figure "DSA - Remotely Initiated Transaction state transition diagram" Figure "DSA - Remotely Initiated Transaction Deleting Service state flow diagram"
PICS Item	
Initial Condition	A BS-initiated DSA transaction has started. The IUT is in the Deleting Service Flow state.
Expected Behaviour	Check that: On receiving the SF Delete-Remote command, the IUT sends no message and ends the DSA transaction.
Test strategy	
Notes	Requires a means of provoking the SF Delete-Remote; e.g. DSD-REQ or MIB command.

TP ID	TP/SS/DS/DSA/BO-H013
IEEE 802.16 Reference	Figure "DSA - Remotely Initiated Transaction state transition diagram" Figure "DSA - Remotely Initiated Transaction Deleting Service state flow diagram"
PICS Item	
Initial Condition	A BS-initiated DSA transaction has started. The IUT is in the Deleting Service Flow state.
Expected Behaviour	Check that: On receiving a DSA-REQ, the IUT sends no message and remains in the same state.
Test strategy	
Notes	

TP ID	TP/SS/DS/DSA/BO-H014
IEEE 802.16 Reference	Figure "DSA - Remotely Initiated Transaction state transition diagram" Figure "DSA - Remotely Initiated Transaction Deleting Service state flow diagram"
PICS Item	
Initial Condition	A BS-initiated DSA transaction has started. The IUT is in the Deleting Service Flow state.
Expected Behaviour	Check that: On receiving a DSA-ACK, the IUT sends no message and remains in the same state.
Test strategy	
Notes	

TP ID	TP/SS/DS/DSA/BO-H100
IEEE 802.16 Reference	Figure "DSA - Locally Initiated Transaction state transition diagram" Figure "DSA - Locally Initiated Transaction DSA-RSP Pending state flow diagram"
PICS Item	
Initial Condition	An SS-initiated DSA transaction has started. The IUT is in the DSA-RSP pending state.
Expected Behaviour	Check that: On receiving a SF Delete-Remote command for the pending DSA transaction, the IUT stops the Local DSA transaction.
Test strategy	
Notes	Requires a means of provoking the SF Delete-Remote; e.g. DSD-REQ or MIB command.

TP ID	TP/SS/DS/DSA/BO-H101
IEEE 802.16 Reference	Figure "DSA - Locally Initiated Transaction state transition diagram" Figure "DSA - Locally Initiated Transaction DSA-RSP Pending state flow diagram"
PICS Item	
Initial Condition	An SS-initiated DSA transaction has started. The IUT is in the DSA-RSP pending state.
Expected Behaviour	Check that: On receiving a SF Abort Add command for the pending DSA transaction, the IUT stops T7, starts T10, and goes to DSA Local Holding Down state.
Test strategy	
Notes	

TP ID	TP/SS/DS/DSA/BO-H102
IEEE 802.16 Reference	Figure "DSA - Locally Initiated Transaction state transition diagram" Figure "DSA - Locally Initiated Transaction Holding state flow diagram"
PICS Item	
Initial Condition	An SS-initiated DSA transaction has started. The IUT is in the Holding Down state.
Expected Behaviour	Check that: On receiving a SF Delete-Local command for the pending DSA transaction, the IUT sends no message and goes to the Deleting Service Flow state.
Test strategy	
Notes	Requires a means of provoking the SF Delete-Local; e.g. MIB command.

TP ID	TP/SS/DS/DSA/BO-H103
IEEE 802.16 Reference	Figure "DSA - Locally Initiated Transaction state transition diagram" Figure "DSA - Locally Initiated Transaction Holding state flow diagram"
PICS Item	
Initial Condition	An SS-initiated DSA transaction has started. The IUT is in the Holding Down state.
Expected Behaviour	Check that: On receiving a SF Changed command for the pending DSA transaction, the IUT sends no message and ends the DSA transaction.
Test strategy	
Notes	Requires a means of provoking the SF Changed; e.g. MIB command.

TP ID	TP/SS/DS/DSA/BO-H104
IEEE 802.16 Reference	Figure "DSA - Locally Initiated Transaction state transition diagram" Figure "DSA - Locally Initiated Transaction Holding state flow diagram"
PICS Item	
Initial Condition	An SS-initiated DSA transaction has started. The IUT is in the Holding Down state.
Expected Behaviour	Check that: On receiving a SF Change-Remote command for the pending DSA transaction, the IUT sends no message and ends the DSA transaction.
Test strategy	
Notes	Requires a means of provoking the SF Change-Remote; e.g. DSC-REQ or MIB command.

TP ID	TP/SS/DS/DSA/BO-H105
IEEE 802.16 Reference	Figure "DSA - Locally Initiated Transaction state transition diagram" Figure "DSA - Locally Initiated Transaction Holding state flow diagram"
PICS Item	
Initial Condition	An SS-initiated DSA transaction has started. The IUT is in the Holding Down state.
Expected Behaviour	Check that: On receiving a SF Delete-Remote command for the pending DSA transaction, the IUT sends no message and ends the DSA transaction.
Test strategy	
Notes	Requires a means of provoking the SF Delete-Remote; e.g. DSD-REQ or MIB command.

TP ID	TP/SS/DS/DSA/BO-H106
IEEE 802.16 Reference	Figure "DSA - Locally Initiated Transaction state transition diagram" Figure "DSA - Locally Initiated Transaction Retries Exhausted state flow diagram"
PICS Item	
Initial Condition	An SS-initiated DSA transaction has started. The IUT is in the Retries Exhausted state.
Expected Behaviour	Check that: On receiving a SF Delete-Remote command for the pending DSA transaction, the IUT sends no message and ends the DSA transaction.
Test strategy	
Notes	Requires a means of provoking the SF Delete-Remote; e.g. DSD-REQ or MIB command.

TP ID	TP/SS/DS/DSA/BO-H107
IEEE 802.16 Reference	Figure "DSA - Locally Initiated Transaction state transition diagram" Figure "DSA - Locally Initiated Transaction Retries Exhausted state flow diagram"
PICS Item	
Initial Condition	An SS-initiated DSA transaction has started. The IUT is in the Retries Exhausted state.
Expected Behaviour	Check that: On receiving a SF Abort Add command for the pending DSA transaction, the IUT sends no message and goes to the Holding Down state.
Test strategy	
Notes	Requires a means of provoking the SF Abort Add; e.g. MIB command.

TP ID	TP/SS/DS/DSA/BO-H108
IEEE 802.16 Reference	Figure "DSA - Locally Initiated Transaction state transition diagram" Figure "DSA - Locally Initiated Transaction Deleting Service Flow state flow diagram"
PICS Item	
Initial Condition	An SS-initiated DSA transaction has started. The IUT is in the Deleting Service Flow state.
Expected Behaviour	Check that: On receiving a DSA-RSP for the pending DSA transaction, the IUT retransmits the DSA-ACK and remains in the same state.
Test strategy	
Notes	

TP ID	TP/SS/DS/DSA/BO-H109
IEEE 802.16 Reference	Figure "DSA - Locally Initiated Transaction state transition diagram" Figure "DSA - Locally Initiated Transaction Deleting Service Flow state flow diagram"
PICS Item	
Initial Condition	An SS-initiated DSA transaction has started. The IUT is in the Deleting Service Flow state.
Expected Behaviour	Check that: On receiving a SF Deleted command for the pending DSA transaction, the IUT sends no message and ends the DSA transaction.
Test strategy	
Notes	Requires a means of provoking the SF Deleted; e.g. MIB command.

TP ID	TP/SS/DS/DSA/BO-H109
IEEE 802.16 Reference	Figure "DSA - Locally Initiated Transaction state transition diagram" Figure "DSA - Locally Initiated Transaction Deleting Service Flow state flow diagram"
PICS Item	
Initial Condition	An SS-initiated DSA transaction has started. The IUT is in the Deleting Service Flow state.
Expected Behaviour	Check that: On receiving an SF Delete-Remote command for the pending DSA transaction, the IUT sends no message and ends the DSA transaction.
Test strategy	
Notes	Requires a means of provoking the SF Delete-Remote; e.g. DSD-REQ or MIB command.

TP ID	TP/SS/DS/DSA/TI-H000
IEEE 802.16 Reference	clauses 6.3.2.3.10 and 6.3.14.7.1.1
PICS Item	
Initial Condition	IUT is authorized and registered. IUT has transmitted its first DSA-REQ.
Expected Behaviour	Check that: When each time timer T14 expires and no reply is received, the IUT re-sends, DSx Request Retries times, the DSA-REQ message and stops the initiated procedure.
Test strategy	
Notes	Requires a means to provoke the IUT to establish the service flow with a DSA-REQ.

TP ID	TP/SS/DS/DSA/TI-H001
IEEE 802.16 Reference	clauses 6.3.2.3.10, 6.3.2.3.11, 6.3.2.3.12 and 6.3.14.7.1.1
PICS Item	
Initial Condition	IUT is authorized and registered. The IUT has sent a DSA-REQ message.
Expected Behaviour	Check that: Just before the expiry of timer T10, and after some re-transmissions of the DSA-REQ message less than DSx Request Retries times, on receiving a DSX-RVD and then a DSA-RSP containing the Confirmation Code set to OK/success, the IUT sends a DSA-ACK containing the Confirmation Code set to OK/success.
Test strategy	
Notes	Requires a means to provoke the IUT to establish the service flow with a DSA-REQ.

TP ID	TP/SS/DS/DSA/TI-H002
IEEE 802.16 Reference	clauses 6.3.2.3.10, 6.3.2.3.11, 6.3.2.3.12 and 6.3.14.7.1.1
PICS Item	
Initial Condition	IUT is authorized and registered. The IUT has sent a DSA-REQ message.
Expected Behaviour	Check that: Just before the expiry of timer T10, and after some re-transmissions of the DSA-REQ message less than DSx Request Retries times, on receiving a DSX-RVD and then a DSA-RSP containing the Confirmation Code set to reject-other, the IUT sends a DSA-ACK containing the Confirmation Code set to OK/success.
Test strategy	
Notes	Requires a means to provoke the IUT to establish the service flow with a DSA-REQ.

TP ID	TP/SS/DS/DSA/TI-H003
IEEE 802.16 Reference	clauses 6.3.2.3.10, 6.3.2.3.11, 6.3.2.3.12 and 6.3.14.7.1.2
PICS Item	
Initial Condition	A BS-initiated DSA transaction has started. The IUT has received a valid DSA-REQ for a service flow and sent a valid DSA-RSP accepting the DSA-REQ.
Expected Behaviour	Check that: Before expiry of timer T8 and on receiving a DSA-REQ for DSx Request Retries times, the IUT sends a DSA-RSP for each received DSA-REQ.
Test strategy	
Notes	

TP ID	TP/SS/DS/DSA/TI-H004
IEEE 802.16 Reference	clauses 6.3.2.3.10, 6.3.2.3.11, 6.3.2.3.12 and 6.3.14.7.1.2
PICS Item	
Initial Condition	A BS-initiated DSA transaction has started. The IUT has received a valid DSA-REQ for a service flow and sent a valid DSA-RSP accepting the DSA-REQ
Expected Behaviour	Check that: Before expiry of timer T8 and on receiving a DSA-REQ for more than DSx Response Retries times, the IUT takes no action.
Test strategy	
Notes	

TP ID	TP/SS/DS/DSA/TI-H005
IEEE 802.16 Reference	clauses 6.3.2.3.10, 6.3.2.3.11, 6.3.2.3.12 and 6.3.14.7.1.2
PICS Item	
Initial Condition	A BS-initiated DSA transaction has started. The IUT has received a valid DSA-REQ for a service flow and sent a valid DSA-RSP accepting the DSA-REQ.
Expected Behaviour	Check that: On expiry of timer T8 and on no DSA-ACK message received from the test equipment, the IUT re-sends for DSx Response Retries times the DSA-RSP.
Test strategy	
Notes	

TP ID	TP/SS/DS/DSA/TI-H006
IEEE 802.16 Reference	clauses 6.3.2.3.10, 6.3.2.3.11, 6.3.2.3.12 and 6.3.14.7.1.2
PICS Item	
Initial Condition	A BS-initiated DSA transaction has started. The IUT has received a valid DSA-REQ for a service flow and sent a valid DSA-RSP accepting the DSA-REQ.
Expected Behaviour	Check that: On expiry of timer T8 when the number of retries is exhausted and on no DSA-ACK message received from the test equipment, the IUT does not re-send the DSA-RSP message and stops the procedure.
Test strategy	
Notes	

TP ID	TP/SS/DS/DSA/TI-H007
IEEE 802.16 Reference	Figure "DSA - Locally Initiated Transaction state transition diagram" Figure "DSA - Locally Initiated Transaction DSA-RSP Pending state flow diagram"
PICS Item	
Initial Condition	An SS-initiated DSA transaction has started. The IUT is in the DSA-RSP pending state.
Expected Behaviour	Check that: When each time T7 expires, no reply is received, and retries are available, the IUT re-sends the DSA-REQ message, restarts T7, and remains in the DSA-RSP pending state.
Test strategy	
Notes	

TP ID	TP/SS/DS/DSA/TI-H008
IEEE 802.16 Reference	Figure "DSA - Locally Initiated Transaction state transition diagram" Figure "DSA - Locally Initiated Transaction DSA-RSP Pending state flow diagram"
PICS Item	
Initial Condition	An SS-initiated DSA transaction has started. The IUT is in the DSA-RSP pending state.
Expected Behaviour	Check that: When T7 expires, no reply is received, and retries are exhausted, the IUT transmits no message, starts T10, and goes to the Retries Exhausted state.
Test strategy	
Notes	

TP ID	TP/SS/DS/DSA/TI-H009
IEEE 802.16 Reference	Figure "DSA - Locally Initiated Transaction state transition diagram" Figure "DSA - Locally Initiated Transaction DSA-RSP Pending state flow diagram"
PICS Item	
Initial Condition	An SS-initiated DSA transaction has started. The IUT is in the DSA-RSP pending state.
Expected Behaviour	Check that: When T14 expires, no reply is received, and retries are exhausted, the IUT transmits no message, starts T10, and goes to the Retries Exhausted state.
Test strategy	
Notes	

TP ID	TP/SS/DS/DSA/TI-H010
IEEE 802.16 Reference	Figure "DSA - Locally Initiated Transaction state transition diagram" Figure "DSA - Locally Initiated Transaction Holding state flow diagram"
PICS Item	
Initial Condition	An SS-initiated DSA transaction has started. The IUT is in the Holding Down state.
Expected Behaviour	Check that: When T10 expires, the IUT ends the DSA transaction.
Test strategy	
Notes	

TP ID	TP/SS/DS/DSA/TI-H011
IEEE 802.16 Reference	Figure "DSA - Locally Initiated Transaction state transition diagram" Figure "DSA - Locally Initiated Transaction Retries Exhausted state flow diagram"
PICS Item	
Initial Condition	An SS-initiated DSA transaction has started. The IUT is in the Retries Exhausted state.
Expected Behaviour	Check that: On T10 expiry without receiving any messages, the IUT ends the DSA transaction.
Test strategy	
Notes	

TP ID	TP/SS/DS/DSA/TI-H012
IEEE 802.16 Reference	Figure "DSA - Locally Initiated Transaction state transition diagram" Figure "DSA - Locally Initiated Transaction Deleting Service Flow state flow diagram"
PICS Item	
Initial Condition	An SS-initiated DSA transaction has started. The IUT is in the Deleting Service Flow state.
Expected Behaviour	Check that: On T10 expiry without receiving any messages, the IUT ends the DSA transaction.
Test strategy	
Notes	

TP ID	TP/SS/DS/DSA/TI-H013
IEEE 802.16 Reference	Figure "DSA - Remotely Initiated Transaction state transition diagram" Figure "DSA - Remotely Initiated Transaction DSA-ACK Pending state flow diagram"
PICS Item	
Initial Condition	A BS-initiated DSA transaction has started. The IUT is in the DSA-ACK Pending state.
Expected Behaviour	Check that: On T8 expiry and Retries Exhausted, the IUT sends no message and ends the DSA transaction.
Test strategy	
Notes	

TP ID	TP/SS/DS/DSA/TI-H014
IEEE 802.16 Reference	Figure "DSA - Remotely Initiated Transaction state transition diagram" Figure "DSA - Remotely Initiated Transaction Holding Down state flow diagram"
PICS Item	
Initial Condition	A BS-initiated DSA transaction has started. The IUT is in the Holding Down state.
Expected Behaviour	Check that: On T8 expiry without receiving any messages, the IUT ends the DSA transaction.
Test strategy	
Notes	

TP ID	TP/SS/DS/DSA/TI-H015
IEEE 802.16 Reference	Figure "DSA - Remotely Initiated Transaction state transition diagram" Figure "DSA - Remotely Initiated Transaction Deleting Service state flow diagram"
PICS Item	
Initial Condition	A BS-initiated DSA transaction has started. The IUT is in the Deleting Service Flow state.
Expected Behaviour	Check that: On T10 expiry, the IUT sends no message and ends the DSA transaction.
Test strategy	
Notes	

TP ID	TP/SS/DS/DSA/BI-H000
IEEE 802.16 Reference	clauses 6.3.2.3.10 and 6.3.14.7.1.2
PICS Item	
Initial Condition	A BS-initiated DSA transaction has started.
Expected Behaviour	Check that: On receiving a DSA-REQ containing the Service Flow Parameters set to an unsupported value, the IUT sends a DSA-RSP containing the Confirmation Code set to any reject reason.
Test strategy	
Notes	

5.3.5.2   Dynamic Services Change (DSC)

TP ID	TP/SS/DS/DSC/BV-H000
IEEE 802.16 Reference	clauses 6.3.14.9.4.1 and 6.3.2.3.13
PICS Item	
Initial Condition	IUT is authorized, registered and a DS flow is established.
Expected Behaviour	Check that: To change a Service flow, the IUT sends a valid DSC-REQ.
Test strategy	
Notes	Requires a means to provoke the IUT to change the service flow with a DSC-REQ.

TP ID	TP/SS/DS/DSC/BV-H001
IEEE 802.16 Reference	clauses 6.3.14.9.4.1 and 6.3.2.3.14
PICS Item	
Initial Condition	IUT is authorized, registered and a DS flow is established. The IUT has sent a DSC-REQ message.
Expected Behaviour	Check that: On receiving a DSX-RVD and then a DSC-RSP containing the Confirmation Code set to OK/success, the IUT sends a valid DSC-ACK.
Test strategy	
Notes	Requires a means to provoke the IUT to change the service flow with a DSC-REQ.

TP ID	TP/SS/DS/DSC/BV-H002
IEEE 802.16 Reference	clauses 6.3.14.9.4.1 and 6.3.2.3.23
PICS Item	
Initial Condition	IUT is authorized, registered and a DS flow is established. The IUT has sent a DSC-REQ message.
Expected Behaviour	Check that: On receiving a DSC-RSP containing the Confirmation Code set to reject-other, the IUT sends a valid DSC-ACK.
Test strategy	
Notes	Requires a means to provoke the IUT to change the service flow with a DSC-REQ.

TP ID	TP/SS/DS/DSC/BV-H003
IEEE 802.16 Reference	clauses 6.3.14.9.4.1 and 6.3.2.3.14
PICS Item	
Initial Condition	IUT is authorized, registered and a DS flow is established. The IUT has sent a DSC-REQ message.
Expected Behaviour	Check that: On receiving a DSX-RVD and then a DSC-RSP containing the Confirmation Code set to reject-other, the IUT sends a valid DSC-ACK.
Test strategy	
Notes	Requires a means to provoke the IUT to change the service flow with a DSC-REQ.

TP ID	TP/SS/DS/DSC/BV-H004
IEEE 802.16 Reference	clauses 6.3.14.9.4.1 and 6.3.2.3.14
PICS Item	
Initial Condition	IUT is authorized, registered and a DS flow is established. The IUT has sent a DSC-REQ message.
Expected Behaviour	Check that: On receiving a DSC-RSP containing the Confirmation Code set to OK/success, the IUT sends a valid DSC-ACK.
Test strategy	
Notes	Requires a means to provoke the IUT to change the service flow with a DSC-REQ.

TP ID	TP/SS/DS/DSC/BV-H005
IEEE 802.16 Reference	clauses 6.3.14.9.4.1 and 6.3.2.3.14
PICS Item	
Initial Condition	IUT is authorized, registered and a DS flow is established. The IUT has sent a DSC-REQ message.
Expected Behaviour	Check that: On receiving a DSC-RSP containing the Confirmation Code set to reject-other, the IUT sends a valid DSC-ACK.
Test strategy	
Notes	Requires a means to provoke the IUT to change the service flow with a DSC-REQ.

TP ID	TP/SS/DS/DSC/BV-H006
IEEE 802.16 Reference	clauses 6.3.14.9.4.1 and 6.3.2.3.13
PICS Item	
Initial Condition	IUT is authorized, registered and a DS flow is established. The IUT has sent a DSC-REQ message.
Expected Behaviour	Check that: On receiving a DSC-REQ, the IUT respects the priority, aborts its transaction and sends a valid DSC-RSP.
Test strategy	
Notes	Requires a means to provoke the IUT to change the service flow with a DSC-REQ.

TP ID	TP/SS/DS/DSC/BV-H007
IEEE 802.16 Reference	clauses 6.3.14.9.4.1 and 6.3.2.3.13
PICS Item	
Initial Condition	IUT is authorized, registered and a DS flow is established. The IUT has sent a DSC-REQ message.
Expected Behaviour	Check that: On receiving a DSX-RVD and then a DSC-REQ, the IUT respects the priority, aborts its transaction and sends a valid DSC-RSP.
Test strategy	
Notes	Requires a means to provoke the IUT to change the service flow with a DSC-REQ.

TP ID	TP/SS/DS/DSC/BV-H008
IEEE 802.16 Reference	clauses 6.3.14.9.4.1 and 6.3.2.3.13
PICS Item	
Initial Condition	IUT is authorized, registered and a DS flow is established. The IUT has sent a DSC-REQ message.
Expected Behaviour	Check that: On receiving a DSX-RVD, a DSC-RSP containing the Confirmation Code set to OK/success and then a DSC-REQ, IUT sends a DSC-ACK, respects the priority, the IUT aborts its transaction and sends a valid DSC-RSP.
Test strategy	
Notes	Requires a means to provoke the IUT to change the service flow with a DSC-REQ.

TP ID	TP/SS/DS/DSC/BV-H009
IEEE 802.16 Reference	clauses 6.3.14.9.4.1 and 6.3.2.3.14
PICS Item	
Initial Condition	IUT is authorized, registered and a DS flow is established. The IUT has sent a DSC-ACK message to complete the service flow change procedure.
Expected Behaviour	Check that: On receiving a DSC-RSP containing the Confirmation Code set to OK/success, the IUT sends a valid DSC-ACK.
Test strategy	
Notes	Requires a means to provoke the IUT to change the service flow with a DSC-REQ.

TP ID	TP/SS/DS/DSC/BV-H010
IEEE 802.16 Reference	clauses 6.3.14.9.4.2 and 6.3.2.3.14
PICS Item	
Initial Condition	IUT is authorized, registered and a DL DS flow is established.
Expected Behaviour	Check that: On receiving a DSC-REQ, the IUT sends a valid DSC-RSP.
Test strategy	
Notes	

TP ID	TP/SS/DS/DSC/BV-H011
IEEE 802.16 Reference	clauses 6.3.14.9.4.2 and 6.3.2.3.14
PICS Item	
Initial Condition	IUT is authorized, registered and an UL DS flow is established.
Expected Behaviour	Check that: On receiving a DSC-REQ, the IUT sends a valid DSC-RSP.
Test strategy	
Notes	

TP ID	TP/SS/DS/DSC/BV-H012
IEEE 802.16 Reference	clauses 6.3.14.9.4.2 and 6.3.2.3.14
PICS Item	
Initial Condition	IUT is authorized, registered and a DS flow is established.
Expected Behaviour	Check that: On receiving a DSC-REQ containing the Service Flow Parameters set to an unsupported value, the IUT sends a DSC-RSP with the Confirmation Code set to any reject reason.
Test strategy	
Notes	

TP ID	TP/SS/DS/DSC/BV-H013
IEEE 802.16 Reference	clauses 6.3.14.9.4.2 and 6.3.2.3.14
PICS Item	
Initial Condition	IUT is authorized, registered and a DS flow is established. The IUT has received a DSC-REQ and then has sent a DSC-RSP.
Expected Behaviour	Check that: On receiving a DSC-ACK containing the Confirmation Code set to OK/success and after T10 expiry, the IUT considers the transaction as ended.
Test strategy	
Notes	

TP ID	TP/SS/DS/DSC/BV-H014
IEEE 802.16 Reference	clauses 6.3.14.9.4.2 and 6.3.2.3.14
PICS Item	
Initial Condition	IUT is authorized, registered and a DS flow is established. The IUT has received a DSC-REQ and then has sent a DSC-RSP.
Expected Behaviour	Check that: On receiving a DSC-ACK containing the Confirmation Code set to reject-other and after T10 expiry, the IUT considers the transaction as ended.
Test strategy	
Notes	

TP ID	TP/SS/DS/DSC/BV-H015
IEEE 802.16 Reference	clauses 6.3.14.9.4.2 and 6.3.2.3.14
PICS Item	
Initial Condition	IUT is authorized, registered and a DS flow is established. The IUT has received a DSC-REQ, then has sent a DSC-RSP, and then has received a DSA-ACK.
Expected Behaviour	Check that: On receiving a redundant copy of the DSC-ACK containing the Confirmation Code set to OK/success and after T8 expiry, the IUT considers the transaction as ended.
Test strategy	
Notes	

TP ID	TP/SS/DS/DSC/BV-H016
IEEE 802.16 Reference	clauses 6.3.14.9.4.2 and 6.3.2.3.14
PICS Item	
Initial Condition	IUT is authorized, registered and a DS flow is established. The IUT has received a DSC-REQ, then has sent a DSC-RSP, and then has received a DSA-ACK.
Expected Behaviour	Check that: On receiving a redundant copy of the DSC-ACK containing the Confirmation Code set to reject-other and after T8 expiry, the IUT considers the transaction as ended.
Test strategy	
Notes	

TP ID	TP/SS/DS/DSC/BV-H017
IEEE 802.16 Reference	Figure "DSC - Locally Initiated Transaction state transition diagram" Figure "DSC - Locally Initiated Transaction DSC-RSP Pending state flow diagram"
PICS Item	
Initial Condition	IUT is operating and a service flow is established. An SS-Initiated DSC transaction has started. The IUT is in the DSC-RSP Pending state.
Expected Behaviour	Check that: On receiving a DSX-RVD, the IUT sends no message, stops T14, and remains in the same state.
Test strategy	
Notes	

TP ID	TP/SS/DS/DSC/BV-H018
IEEE 802.16 Reference	Figure "DSC - Locally Initiated Transaction state transition diagram" Figure "DSC - Locally Initiated Transaction Retries Exhausted state flow diagram"
PICS Item	
Initial Condition	IUT is operating and a service flow is established. An SS-Initiated DSC transaction has started. The IUT is in the Retries Exhausted state.
Expected Behaviour	Check that: On receiving a DSC-RSP accepting the change, the IUT transmits a DSC-ACK, incorporates the changes, starts T10, and goes to the Holding Down state.
Test strategy	
Notes	

TP ID	TP/SS/DS/DSC/BV-H019
IEEE 802.16 Reference	Figure "DSC - Locally Initiated Transaction state transition diagram" Figure "DSC - Locally Initiated Transaction Retries Exhausted state flow diagram"
PICS Item	
Initial Condition	IUT is operating and a service flow is established. An SS-Initiated DSC transaction has started. The IUT is in the Retries Exhausted state.
Expected Behaviour	Check that: On receiving a DSC-RSP refusing the change, the IUT transmits a DSC-ACK, starts T10, and goes to the Holding Down state.
Test strategy	
Notes	

TP ID	TP/SS/DS/DSC/BV-H020
IEEE 802.16 Reference	Figure "DSC - Remotely Initiated Transaction state transition diagram" Figure "DSC - Remotely Initiated Transaction DSC-ACK Pending state flow diagram"
PICS Item	
Initial Condition	IUT is operating and a service flow is established. A BS-Initiated DSC transaction has started. The IUT is in the DSC-ACK Pending state.
Expected Behaviour	Check that: On receiving a DSC-REQ and retries are available, the IUT retransmits the DSC-RSP and remains in the same state.
Test strategy	
Notes	

TP ID	TP/SS/DS/DSC/BV-H021
IEEE 802.16 Reference	Figure "DSC - Remotely Initiated Transaction state transition diagram" Figure "DSC - Remotely Initiated Transaction DSC-ACK Pending state flow diagram"
PICS Item	
Initial Condition	IUT is operating and a service flow is established. A BS-Initiated DSC transaction has started. The IUT is in the DSC-ACK Pending state.
Expected Behaviour	Check that: On receiving a DSC-REQ and retries are exhausted, the IUT sends no message and remains in the same state.
Test strategy	
Notes	

TP ID	TP/SS/DS/DSC/BI-H000
IEEE 802.16 Reference	clauses 6.3.14.9.4.2 and 6.3.2.3.13
PICS Item	
Initial Condition	IUT is authorized, registered and a DS flow is established.
Expected Behaviour	Check that: On receiving an erroneous DSC-REQ, the IUT sends a DSC-RSP message indicating the error.
Test strategy	
Notes	

TP ID	TP/SS/DS/DSC/BI-H001
IEEE 802.16 Reference	clauses 6.3.14.9.4.2 and 6.3.2.3.13
PICS Item	
Initial Condition	IUT is authorized, registered and a DS flow is established. The IUT has received DSC-REQ to which it has sent a DSC-RSP.
Expected Behaviour	Check that: On receiving an erroneous DSC-ACK, the IUT re-sends the previously saved DSC-RSP.
Test strategy	
Notes	

TP ID	TP/SS/DS/DSC/BI-H002
IEEE 802.16 Reference	clauses 6.3.14.9.4.1 and 6.3.2.3.13
PICS Item	
Initial Condition	IUT is authorized, registered and a DS flow is established. The IUT has sent a DSC-REQ message.
Expected Behaviour	Check that: On receiving a DSC-RSP rejecting the service flow change request and indicating an erroneous parameter that caused the rejection, the IUT re-sends the DSC-REQ.
Test strategy	
Notes	Requires a means to provoke the IUT to change the service flow with a DSC-REQ.

TP ID	TP/SS/DS/DSC/BO-H000
IEEE 802.16 Reference	clauses 6.3.14.9.4.2 and 6.3.2.3.15
PICS Item	
Initial Condition	IUT is authorized, registered and a DS flow is established.
Expected Behaviour	Check that: On receiving a DSC-ACK for a non existing service flow, the IUT ignores the message.
Test strategy	
Notes	

TP ID	TP/SS/DS/DSC/BO-H001
IEEE 802.16 Reference	clauses 6.3.14.9.4.2 and 6.3.2.3.15
PICS Item	
Initial Condition	IUT is authorized, registered and a DS flow is established. The IUT has received a DSC-REQ, has then sent a DSC-RSP and has then received a DSA-ACK.
Expected Behaviour	Check that: On receiving a redundant copy of the previously received DSC-REQ, the IUT ignores the message.
Test strategy	
Notes	

TP ID	TP/SS/DS/DSC/BO-H002
IEEE 802.16 Reference	clauses 6.3.14.9.4.2 and 6.3.2.3.15
PICS Item	
Initial Condition	IUT is authorized, registered and a DS flow is established. The IUT has received a DSC-REQ, has then sent a DSC-RSP and has then received a DSA-ACK.
Expected Behaviour	Check that: On receiving a redundant copy of the previously received DSC-ACK, the IUT ignores the message.
Test strategy	
Notes	

TP ID	TP/SS/DS/DSC/BO-H003
IEEE 802.16 Reference	Figure "DSC - Locally Initiated Transaction state transition diagram" Figure "DSC - Locally Initiated Transaction DSC-RSP Pending state flow diagram"
PICS Item	
Initial Condition	IUT is operating and a service flow is established. An SS-Initiated DSC transaction has started. The IUT is in the DSC-RSP Pending state.
Expected Behaviour	Check that: On receiving the command SF DSC-REQ Lost and retries are available, the IUT resends the DSC-REQ and remains in the same state.
Test strategy	
Notes	Requires a means of provoking the SF DSC-REQ Lost; e.g. MIB command.

TP ID	TP/SS/DS/DSC/BO-H004
IEEE 802.16 Reference	Figure "DSC - Locally Initiated Transaction state transition diagram" Figure "DSC - Locally Initiated Transaction DSC-RSP Pending state flow diagram"
PICS Item	
Initial Condition	IUT is operating and a service flow is established. An SS-Initiated DSC transaction has started. The IUT is in the DSC-RSP Pending state.
Expected Behaviour	Check that: On receiving the command SF DSC-REQ Lost and retries are exhausted, the IUT sends no message and remains in the same state.
Test strategy	
Notes	Requires a means of provoking the SF DSC-REQ Lost; e.g. MIB command.

TP ID	TP/SS/DS/DSC/BO-H005
IEEE 802.16 Reference	Figure "DSC - Locally Initiated Transaction state transition diagram" Figure "DSC - Locally Initiated Transaction DSC-RSP Pending state flow diagram"
PICS Item	
Initial Condition	IUT is operating and a service flow is established. An SS-Initiated DSC transaction has started. The IUT is in the DSC-RSP Pending state.
Expected Behaviour	Check that: On receiving the command SF Change-Remote, the IUT ends the DSC transaction.
Test strategy	
Notes	Requires a means of provoking the SF Change-Remote; e.g. DSC-REQ or MIB command.

TP ID	TP/SS/DS/DSC/BO-H006
IEEE 802.16 Reference	Figure "DSC - Locally Initiated Transaction state transition diagram" Figure "DSC - Locally Initiated Transaction DSC-RSP Pending state flow diagram"
PICS Item	
Initial Condition	IUT is operating and a service flow is established. An SS-Initiated DSC transaction has started. The IUT is in the DSC-RSP Pending state.
Expected Behaviour	Check that: On receiving the command SF Delete-Remote, the IUT ends the DSC transaction.
Test strategy	
Notes	Requires a means of provoking the SF Delete-Remote; e.g. DSD-REQ or MIB command.

TP ID	TP/SS/DS/DSC/BO-H007
IEEE 802.16 Reference	Figure "DSC - Locally Initiated Transaction state transition diagram" Figure "DSC - Locally Initiated Transaction DSC-RSP Pending state flow diagram"
PICS Item	
Initial Condition	IUT is operating and a service flow is established. An SS-Initiated DSC transaction has started. The IUT is in the DSC-RSP Pending state.
Expected Behaviour	Check that: On receiving the command SF Delete-Local, the IUT stops T7, starts T10, and goes to the Deleting Service flow state.
Test strategy	
Notes	Requires a means of provoking the SF Delete-Local; e.g. MIB command.

TP ID	TP/SS/DS/DSC/BO-H008
IEEE 802.16 Reference	Figure "DSC - Locally Initiated Transaction state transition diagram" Figure "DSC - Locally Initiated Transaction Holding Down state flow diagram"
PICS Item	
Initial Condition	IUT is operating and a service flow is established. An SS-Initiated DSC transaction has started. The IUT is in the Holding Down state.
Expected Behaviour	Check that: On receiving the command SF Changed, the IUT sends no message and ends the DSC transaction.
Test strategy	
Notes	Requires a means of provoking the SF Changed; e.g. MIB command.

TP ID	TP/SS/DS/DSC/BO-H009
IEEE 802.16 Reference	Figure "DSC - Locally Initiated Transaction state transition diagram" Figure "DSC - Locally Initiated Transaction Holding Down state flow diagram"
PICS Item	
Initial Condition	IUT is operating and a service flow is established. An SS-Initiated DSC transaction has started. The IUT is in the Holding Down state.
Expected Behaviour	Check that: On receiving the command SF Change-Remote, the IUT sends no message and ends the DSC transaction.
Test strategy	
Notes	Requires a means of provoking the SF Change-Remote; e.g. DSC-REQ or MIB command.

TP ID	TP/SS/DS/DSC/BO-H010
IEEE 802.16 Reference	Figure "DSC - Locally Initiated Transaction state transition diagram" Figure "DSC - Locally Initiated Transaction Holding Down state flow diagram"
PICS Item	
Initial Condition	IUT is operating and a service flow is established. An SS-Initiated DSC transaction has started. The IUT is in the Holding Down state.
Expected Behaviour	Check that: On receiving the command SF Delete-Remote, the IUT sends no message and ends the DSC transaction.
Test strategy	
Notes	Requires a means of provoking the SF Delete-Remote; e.g. DSD-REQ or MIB command.

TP ID	TP/SS/DS/DSC/BO-H011
IEEE 802.16 Reference	Figure "DSC - Locally Initiated Transaction state transition diagram" Figure "DSC - Locally Initiated Transaction Holding Down state flow diagram"
PICS Item	
Initial Condition	IUT is operating and a service flow is established. An SS-Initiated DSC transaction has started. The IUT is in the Holding Down state.
Expected Behaviour	Check that: On receiving the command SF Delete-Local, the IUT sends no message and goes to the Deleting Service Flow state.
Test strategy	
Notes	Requires a means of provoking the SF Delete-Local; e.g. MIB command.

TP ID	TP/SS/DS/DSC/BO-H012
IEEE 802.16 Reference	Figure "DSC - Locally Initiated Transaction state transition diagram" Figure "DSC - Locally Initiated Transaction Retries Exhausted state flow diagram"
PICS Item	
Initial Condition	IUT is operating and a service flow is established. An SS-Initiated DSC transaction has started. The IUT is in the Retries Exhausted state.
Expected Behaviour	Check that: On receiving the command SF Delete-Remote, the IUT sends no message and ends the DSC transaction.
Test strategy	
Notes	Requires a means of provoking the SF Delete-Remote; e.g. DSD-REQ or MIB command.

TP ID	TP/SS/DS/DSC/BO-H013
IEEE 802.16 Reference	Figure "DSC - Locally Initiated Transaction state transition diagram" Figure "DSC - Locally Initiated Transaction Retries Exhausted state flow diagram"
PICS Item	
Initial Condition	IUT is operating and a service flow is established. An SS-Initiated DSC transaction has started. The IUT is in the Retries Exhausted state.
Expected Behaviour	Check that: On receiving the command SF Delete-Local, the IUT sends no message and goes to the Deleting Service Flow state.
Test strategy	
Notes	Requires a means of provoking the SF Delete-Local; e.g. MIB command.

TP ID	TP/SS/DS/DSC/BO-H014
IEEE 802.16 Reference	Figure "DSC - Locally Initiated Transaction state transition diagram" Figure "DSC - Locally Initiated Transaction Deleting Service Flow state flow diagram"
PICS Item	
Initial Condition	IUT is operating and a service flow is established. An SS-Initiated DSC transaction has started. The IUT is in the Deleting Service Flow state.
Expected Behaviour	Check that: On receiving the command SF Deleted, the IUT sends no message and ends the DSC transaction.
Test strategy	
Notes	Requires a means of provoking the SF Deleted; e.g. MIB command.

TP ID	TP/SS/DS/DSC/BO-H015
IEEE 802.16 Reference	Figure "DSC - Locally Initiated Transaction state transition diagram" Figure "DSC - Locally Initiated Transaction Deleting Service Flow state flow diagram"
PICS Item	
Initial Condition	IUT is operating and a service flow is established. An SS-Initiated DSC transaction has started. The IUT is in the Deleting Service Flow state.
Expected Behaviour	Check that: On receiving the command SF Delete-Remote, the IUT sends no message and ends the DSC transaction.
Test strategy	
Notes	Requires a means of provoking the SF Delete-Remote; e.g. DSD-REQ or MIB command.

TP ID	TP/SS/DS/DSC/BO-H016
IEEE 802.16 Reference	Figure "DSC - Locally Initiated Transaction state transition diagram" Figure "DSC - Locally Initiated Transaction Deleting Service Flow state flow diagram"
PICS Item	
Initial Condition	IUT is operating and a service flow is established. An SS-Initiated DSC transaction has started. The IUT is in the Deleting Service Flow state.
Expected Behaviour	Check that: On receiving a DSC-RSP, the IUT sends no message and remains in the same state.
Test strategy	
Notes	

TP ID	TP/SS/DS/DSC/BO-H100
IEEE 802.16 Reference	Figure "DSC - Remotely Initiated Transaction state transition diagram" Figure "DSC - Remotely Initiated Transaction DSC-ACK Pending state flow diagram"
PICS Item	
Initial Condition	IUT is operating and a service flow is established. A BS-Initiated DSC transaction has started. The IUT is in the DSC-ACK Pending state.
Expected Behaviour	Check that: On receiving the SF DSC-ACK Lost command and retries are available, the IUT retransmits the DSC-RSP and remains in the same state.
Test strategy	
Notes	Requires a means of provoking the SF DSC-ACK Lost; e.g. MIB command.

TP ID	TP/SS/DS/DSC/BO-H101
IEEE 802.16 Reference	Figure "DSC - Remotely Initiated Transaction state transition diagram" Figure "DSC - Remotely Initiated Transaction DSC-ACK Pending state flow diagram"
PICS Item	
Initial Condition	IUT is operating and a service flow is established. A BS-Initiated DSC transaction has started. The IUT is in the DSC-ACK Pending state.
Expected Behaviour	Check that: On receiving the SF DSC-ACK Lost command and retries are exhausted, the IUT sends no message and remains in the same state.
Test strategy	
Notes	Requires a means of provoking the SF DSC-ACK Lost; e.g. MIB command.

TP ID	TP/SS/DS/DSC/BO-H102
IEEE 802.16 Reference	Figure "DSC - Remotely Initiated Transaction state transition diagram" Figure "DSC - Remotely Initiated Transaction DSC-ACK Pending state flow diagram"
PICS Item	
Initial Condition	IUT is operating and a service flow is established. A BS-Initiated DSC transaction has started. The IUT is in the DSC-ACK Pending state.
Expected Behaviour	Check that: On receiving the SF Delete-Remote command, the IUT sends no message and ends the DSC transaction.
Test strategy	
Notes	Requires a means of provoking the SF Delete-Remote; e.g. DSD-REQ or MIB command.

TP ID	TP/SS/DS/DSC/BO-H103
IEEE 802.16 Reference	Figure "DSC - Remotely Initiated Transaction state transition diagram" Figure "DSC - Remotely Initiated Transaction DSC-ACK Pending state flow diagram"
PICS Item	
Initial Condition	IUT is operating and a service flow is established. A BS-Initiated DSC transaction has started. The IUT is in the DSC-ACK Pending state.
Expected Behaviour	Check that: On receiving the SF Change-Local command, the IUT sends no message and ends the DSC transaction.
Test strategy	
Notes	Requires a means of provoking the SF Change-Local; e.g. MIB command.

TP ID	TP/SS/DS/DSC/BO-H104
IEEE 802.16 Reference	Figure "DSC - Remotely Initiated Transaction state transition diagram" Figure "DSC - Remotely Initiated Transaction DSC-ACK Pending state flow diagram"
PICS Item	
Initial Condition	IUT is operating and a service flow is established. A BS-Initiated DSC transaction has started. The IUT is in the DSC-ACK Pending state.
Expected Behaviour	Check that: On receiving the SF Delete-Local command, the IUT sends no message, stops T8, starts T10, and goes to the Deleting Service Flow state.
Test strategy	
Notes	Requires a means of provoking the SF Delete-Local; e.g. MIB command.

TP ID	TP/SS/DS/DSC/BO-H105
IEEE 802.16 Reference	Figure "DSC - Remotely Initiated Transaction state transition diagram" Figure "DSC - Remotely Initiated Transaction Holding Down state flow diagram"
PICS Item	
Initial Condition	IUT is operating and a service flow is established. A BS-Initiated DSC transaction has started. The IUT is in the Holding Down state.
Expected Behaviour	Check that: On receiving the SF Changed command, the IUT sends no message and ends the DSC transaction.
Test strategy	
Notes	Requires a means of provoking the SF Changed; e.g. MIB command.

TP ID	TP/SS/DS/DSC/BO-H106
IEEE 802.16 Reference	Figure "DSC - Remotely Initiated Transaction state transition diagram" Figure "DSC - Remotely Initiated Transaction Holding Down state flow diagram"
PICS Item	
Initial Condition	IUT is operating and a service flow is established. A BS-Initiated DSC transaction has started. The IUT is in the Holding Down state.
Expected Behaviour	Check that: On receiving the SF Deleted command, the IUT sends no message and ends the DSC transaction.
Test strategy	
Notes	Requires a means of provoking the SF Deleted; e.g. MIB command.

TP ID	TP/SS/DS/DSC/BO-H107
IEEE 802.16 Reference	Figure "DSC - Remotely Initiated Transaction state transition diagram" Figure "DSC - Remotely Initiated Transaction Holding Down state flow diagram"
PICS Item	
Initial Condition	IUT is operating and a service flow is established. A BS-Initiated DSC transaction has started. The IUT is in the Holding Down state.
Expected Behaviour	Check that: On receiving the SF Delete-Remote command, the IUT sends no message and ends the DSC transaction.
Test strategy	
Notes	Requires a means of provoking the SF Delete-Remote; e.g. DSD-REQ or MIB command.

TP ID	TP/SS/DS/DSC/BO-H108
IEEE 802.16 Reference	Figure "DSC - Remotely Initiated Transaction state transition diagram" Figure "DSC - Remotely Initiated Transaction Holding Down state flow diagram"
PICS Item	
Initial Condition	IUT is operating and a service flow is established. A BS-Initiated DSC transaction has started. The IUT is in the Holding Down state.
Expected Behaviour	Check that: On receiving the SF Change-Local command, the IUT sends no message and ends the DSC transaction.
Test strategy	
Notes	Requires a means of provoking the SF Change-Local; e.g. MIB command.

TP ID	TP/SS/DS/DSC/BO-H109
IEEE 802.16 Reference	Figure "DSC - Remotely Initiated Transaction state transition diagram" Figure "DSC - Remotely Initiated Transaction Holding Down state flow diagram"
PICS Item	
Initial Condition	IUT is operating and a service flow is established. A BS-Initiated DSC transaction has started. The IUT is in the Holding Down state.
Expected Behaviour	Check that: On receiving the SF Delete-Local command, the IUT sends no message and remains in the same state.
Test strategy	
Notes	Requires a means of provoking the SF Delete-Local; e.g. MIB command.

TP ID	TP/SS/DS/DSC/BO-H110
IEEE 802.16 Reference	Figure "DSC - Remotely Initiated Transaction state transition diagram" Figure "DSC - Remotely Initiated Transaction Holding Down state flow diagram"
PICS Item	
Initial Condition	IUT is operating and a service flow is established. A BS-Initiated DSC transaction has started. The IUT is in the Holding Down state.
Expected Behaviour	Check that: On receiving the SF Change-Remote command, the IUT sends no message and remains in the same state.
Test strategy	
Notes	Requires a means of provoking the SF Change-Remote; e.g. DSC-REQ or MIB command.

TP ID	TP/SS/DS/DSC/BO-H111
IEEE 802.16 Reference	Figure "DSC - Remotely Initiated Transaction state transition diagram" Figure "DSC - Remotely Initiated Transaction Deleting Service Flow state flow diagram"
PICS Item	
Initial Condition	IUT is operating and a service flow is established. A BS-Initiated DSC transaction has started. The IUT is in the Deleting Service Flow state.
Expected Behaviour	Check that: On receiving the SF Deleted command, the IUT sends no message and ends the DSC transaction.
Test strategy	
Notes	Requires a means of provoking the SF Deleted; e.g. MIB command.

TP ID	TP/SS/DS/DSC/BO-H112
IEEE 802.16 Reference	Figure "DSC - Remotely Initiated Transaction state transition diagram" Figure "DSC - Remotely Initiated Transaction Deleting Service Flow state flow diagram"
PICS Item	
Initial Condition	IUT is operating and a service flow is established. A BS-Initiated DSC transaction has started. The IUT is in the Deleting Service Flow state.
Expected Behaviour	Check that: On receiving the SF Delete-Remote command, the IUT sends no message and ends the DSC transaction.
Test strategy	
Notes	Requires a means of provoking the SF Delete-Remote; e.g. DSD-REQ or MIB command.

TP ID	TP/SS/DS/DSC/BO-H113
IEEE 802.16 Reference	Figure "DSC - Remotely Initiated Transaction state transition diagram" Figure "DSC - Remotely Initiated Transaction Deleting Service Flow state flow diagram"
PICS Item	
Initial Condition	IUT is operating and a service flow is established. A BS-Initiated DSC transaction has started. The IUT is in the Deleting Service Flow state.
Expected Behaviour	Check that: On receiving the SF Change-Local command, the IUT sends no message and ends the DSC transaction.
Test strategy	
Notes	Requires a means of provoking the SF Change-Local; e.g. MIB command.

TP ID	TP/SS/DS/DSC/BO-H114
IEEE 802.16 Reference	Figure "DSC - Remotely Initiated Transaction state transition diagram" Figure "DSC - Remotely Initiated Transaction Deleting Service Flow state flow diagram"
PICS Item	
Initial Condition	IUT is operating and a service flow is established. A BS-Initiated DSC transaction has started. The IUT is in the Deleting Service Flow state.
Expected Behaviour	Check that: On receiving a DSC-REQ, the IUT sends no message and remains in the same state.
Test strategy	
Notes	

TP ID	TP/SS/DS/DSC/BO-H115
IEEE 802.16 Reference	Figure "DSC - Remotely Initiated Transaction state transition diagram" Figure "DSC - Remotely Initiated Transaction Deleting Service Flow state flow diagram"
PICS Item	
Initial Condition	IUT is operating and a service flow is established. A BS-Initiated DSC transaction has started. The IUT is in the Deleting Service Flow state.
Expected Behaviour	Check that: On receiving a DSC-ACK, the IUT sends no message and remains in the same state.
Test strategy	
Notes	

TP ID	TP/SS/DS/DSC/TI-H000
IEEE 802.16 Reference	clauses 6.3.14.9.4.2 and 6.3.2.3.14
PICS Item	
Initial Condition	IUT is authorized, registered and a DS flow is established. The IUT has received a DSC-REQ and then has sent a DSC-RSP.
Expected Behaviour	Check that: On T8 expiry without receiving a DSC-ACK, the IUT resends the previously transmitted DSC-RSP for DSx Response Retries times.
Test strategy	
Notes	

TP ID	TP/SS/DS/DSC/TI-H001
	Deleted

TP ID	TP/SS/DS/DSC/TI-H002
IEEE 802.16 Reference	clauses 6.3.14.9.4.2 and 6.3.2.3.14
PICS Item	
Initial Condition	IUT is authorized, registered and a DS flow is established. The IUT has received a DSC-REQ and then has sent a DSC-RSP.
Expected Behaviour	Check that: On T8 expiry without receiving a DSC-ACK for more than DSx Response Retries times, the IUT stops the DSC transaction.
Test strategy	
Notes	

TP ID	TP/SS/DS/DSC/TI-H003
	Deleted

TP ID	TP/SS/DS/DSC/TI-H004
	Deleted

TP ID	TP/SS/DS/DSC/TI-H005
IEEE 802.16 Reference	Figure "DSC - Locally Initiated Transaction state transition diagram" Figure "DSC - Locally Initiated Transaction DSC-RSP Pending state flow diagram"
PICS Item	
Initial Condition	IUT is operating and a service flow is established. An SS-Initiated DSC transaction has started. The IUT is in the DSC-RSP Pending state.
Expected Behaviour	Check that: On not receiving a DSC-RSP after T7 expiry and retries are available, the IUT retransmits the DSC-REQ, restarts T7, and remains in the same state.
Test strategy	
Notes	

TP ID	TP/SS/DS/DSC/TI-H006
	Deleted

TP ID	TP/SS/DS/DSC/TI-H007
	Deleted

TP ID	TP/SS/DS/DSC/TI-H008
IEEE 802.16 Reference	Figure "DSC - Locally Initiated Transaction state transition diagram" Figure "DSC - Locally Initiated Transaction DSC-RSP Pending state flow diagram"
PICS Item	
Initial Condition	IUT is operating and a service flow is established. An SS-Initiated DSC transaction has started. The IUT is in the DSC-RSP Pending state.
Expected Behaviour	Check that: On not receiving a DSC-RSP after T7 expiry and retries are not available, the IUT sends no message, starts T10, and goes to the Retries Exhausted state.
Test strategy	
Notes	

TP ID	TP/SS/DS/DSC/TI-H009
IEEE 802.16 Reference	Figure "DSC - Locally Initiated Transaction state transition diagram" Figure "DSC - Locally Initiated Transaction DSC-RSP Pending state flow diagram"
PICS Item	
Initial Condition	IUT is operating and a service flow is established. An SS-Initiated DSC transaction has started. The IUT is in the DSC-RSP Pending state.
Expected Behaviour	Check that: On not receiving a DSX-RVD after T14 expiry and retries are available, the IUT retransmits the DSC-REQ, restarts T7, and remains in the same state.
Test strategy	
Notes	

TP ID	TP/SS/DS/DSC/TI-H010
IEEE 802.16 Reference	Figure "DSC - Locally Initiated Transaction state transition diagram" Figure "DSC - Locally Initiated Transaction DSC-RSP Pending state flow diagram"
PICS Item	
Initial Condition	IUT is operating and a service flow is established. An SS-Initiated DSC transaction has started. The IUT is in the DSC-RSP Pending state.
Expected Behaviour	Check that: On not receiving a DSX-RVD after T14 expiry and retries are exhausted, the IUT sends no message, starts T10, and goes to the Retries Exhausted state.
Test strategy	
Notes	

TP ID	TP/SS/DS/DSC/TI-H011
IEEE 802.16 Reference	Figure "DSC - Locally Initiated Transaction state transition diagram" Figure "DSC - Locally Initiated Transaction Holding Down state flow diagram"
PICS Item	
Initial Condition	IUT is operating and a service flow is established. An SS-Initiated DSC transaction has started. The IUT is in the Holding Down state.
Expected Behaviour	Check that: On T10 expiry, the IUT sends no message and ends the DSC transaction.
Test strategy	
Notes	

TP ID	TP/SS/DS/DSC/TI-H012
IEEE 802.16 Reference	Figure "DSC - Locally Initiated Transaction state transition diagram" Figure "DSC - Locally Initiated Transaction Retries Exhausted state flow diagram"
PICS Item	
Initial Condition	IUT is operating and a service flow is established. An SS-Initiated DSC transaction has started. The IUT is in the Retries Exhausted state.
Expected Behaviour	Check that: On T10 expiry, the IUT sends no message and ends the DSC transaction.
Test strategy	
Notes	

TP ID	TP/SS/DS/DSC/TI-H013
IEEE 802.16 Reference	Figure "DSC - Locally Initiated Transaction state transition diagram" Figure "DSC - Locally Initiated Transaction Deleting Service Flow state flow diagram"
PICS Item	
Initial Condition	IUT is operating and a service flow is established. An SS-Initiated DSC transaction has started. The IUT is in the Deleting Service Flow state.
Expected Behaviour	Check that: On T10 expiry, the IUT sends no message and ends the DSC transaction.
Test strategy	
Notes	

TP ID	TP/SS/DS/DSC/TI-H014
IEEE 802.16 Reference	Figure "DSC - Remotely Initiated Transaction state transition diagram" Figure "DSC - Remotely Initiated Transaction Deleting Service Flow state flow diagram"
PICS Item	
Initial Condition	IUT is operating and a service flow is established. A BS-Initiated DSC transaction has started. The IUT is in the Deleting Service Flow state.
Expected Behaviour	Check that: On T10 expiry, the IUT sends no message and ends the DSC transaction.
Test strategy	
Notes	

5.3.5.3   Dynamic Services Deletion (DSD)

TP ID	TP/SS/DS/DSD/BV-H000
IEEE 802.16 Reference	clauses 6.3.14.9.5.2 and 6.3.2.3.17
PICS Item	
Initial Condition	IUT is operational and a DL DS flow is established.
Expected Behaviour	Check that: On receiving a DSD-REQ for the established DL DS flow, the IUT transmits a valid DSD-RSP and deletes the service flow.
Test strategy	Straightforward.
Notes	

TP ID	TP/SS/DS/DSD/BV-H001
IEEE 802.16 Reference	clauses 6.3.14.9.5.2 and 6.3.2.3.17
PICS Item	
Initial Condition	IUT is operational and an UL DS flow is established.
Expected Behaviour	Check that: On receiving a DSD-REQ for the established UL service flow, the IUT transmits a valid DSD-RSP and deletes the service flow.
Test strategy	Straightforward.
Notes	

TP ID	TP/SS/DS/DSD/BV-H002
IEEE 802.16 Reference	clauses 6.3.14.9.5.1 and 6.3.2.3.16
PICS Item	
Initial Condition	IUT is operational and a DS flow is established.
Expected Behaviour	Check that: To delete a Service flow, the IUT sends a DSD-REQ.
Test strategy	
Notes	Requires a means to provoke the IUT to delete the service flow with a DSD-REQ.

TP ID	TP/SS/DS/DSD/BV-H003
IEEE 802.16 Reference	clauses 6.3.14.9.5.1 and 6.3.2.3.17
PICS Item	
Initial Condition	IUT is operational and a DS flow is established. The IUT waits for DSD-RSP.
Expected Behaviour	Check that: On receiving a DSD-RSP, the IUT accepts it, does not retransmit the DSD-REQ and after Holding Down stops using the deleted Service Flow for any more data transfers.
Test strategy	
Notes	Requires a means to provoke the IUT to delete the service flow with a DSD-REQ.

TP ID	TP/SS/DS/DSD/BV-H004
IEEE 802.16 Reference	Figure "DSD - Locally Initiated Transaction state transition diagram" Figure "DSD - Locally Initiated Transaction Holding Down state flow diagram"
PICS Item	
Initial Condition	IUT is operating and a service flow is established. An SS-Initiated DSD transaction has started. The IUT is in the Holding Down state.
Expected Behaviour	Check that: On receiving a DSD-RSP, the IUT sends no message and remains in the same state.
Test strategy	
Notes	

TP ID	TP/SS/DS/DSD/BI-H000
IEEE 802.16 Reference	clauses 6.3.14.9.5.2 and 6.3.2.3.17
PICS Item	
Initial Condition	IUT is operational and a DS flow is established.
Expected Behaviour	Check that: On receiving a DSD-REQ with invalid transaction ID, the IUT transmits a DSD-RSP message indicating the error.
Test strategy	
Notes	

TP ID	TP/SS/DS/DSD/BI-H001
IEEE 802.16 Reference	clauses 6.3.14.9.5.1 and 6.3.2.3.17
PICS Item	
Initial Condition	IUT is operational and a DS flow is established. The IUT sent the DSD-REQ and waits for DSD-RSP
Expected Behaviour	Check that: On receiving a DSD-RSP rejecting the request and indicating an invalid transaction ID, the IUT re-sends the DSD-REQ with correct transaction ID.
Test strategy	
Notes	Requires a means to provoke the IUT to delete the service flow with a DSD-REQ.

TP ID	TP/SS/DS/DSD/BO-H000
IEEE 802.16 Reference	clauses 6.3.14.9.5.2 and 6.3.2.3.16
PICS Item	
Initial Condition	IUT is operational and a DS flow is established.
Expected Behaviour	Check that: On receiving a DSD-REQ for a non existing service flow, the IUT ignores the message.
Test strategy	
Notes	

TP ID	TP/SS/DS/DSD/BO-H001
IEEE 802.16 Reference	Figure "DSD - Locally Initiated Transaction state transition diagram" Figure "DSD - Locally Initiated Transaction DSD-RSP Pending state flow diagram"
PICS Item	
Initial Condition	IUT is operating and a service flow is established. An SS-Initiated DSD transaction has started. The IUT is in the DSD-RSP Pending state.
Expected Behaviour	Check that: On receiving an SF DSD-REQ Lost Command and retries are available, the IUT retransmits the DSD-REQ message and remains in the same state.
Test strategy	
Notes	Requires a means of provoking the SF DSD-REQ Lost Command; e.g. MIB command.

TP ID	TP/SS/DS/DSD/BO-H002
IEEE 802.16 Reference	Figure "DSD - Locally Initiated Transaction state transition diagram" Figure "DSD - Locally Initiated Transaction DSD-RSP Pending state flow diagram"
PICS Item	
Initial Condition	IUT is operating and a service flow is established. An SS-Initiated DSD transaction has started. The IUT is in the DSD-RSP Pending state.
Expected Behaviour	Check that: On receiving an SF DSD-REQ Lost Command and retries are exhausted, the IUT sends no message and remains in the same state.
Test strategy	
Notes	Requires a means of provoking the SF DSD-REQ Lost Command; e.g. MIB command.

TP ID	TP/SS/DS/DSD/BO-H003
IEEE 802.16 Reference	Figure "DSD - Locally Initiated Transaction state transition diagram" Figure "DSD - Locally Initiated Transaction DSD-RSP Pending state flow diagram"
PICS Item	
Initial Condition	IUT is operating and a service flow is established. An SS-Initiated DSD transaction has started. The IUT is in the DSD-RSP Pending state.
Expected Behaviour	Check that: On receiving an SF Delete-Remote Command, the IUT sends no message, stops T7, starts T10, and goes to the Holding Down state.
Test strategy	
Notes	Requires a means of provoking the SF Delete-Remote; e.g. DSD-REQ or MIB command.

TP ID	TP/SS/DS/DSD/BO-H004
IEEE 802.16 Reference	Figure "DSD - Locally Initiated Transaction state transition diagram" Figure "DSD - Locally Initiated Transaction Holding Down state flow diagram"
PICS Item	
Initial Condition	IUT is operating and a service flow is established. An SS-Initiated DSD transaction has started. The IUT is in the Holding Down state.
Expected Behaviour	Check that: On receiving an SF Deleted command, the IUT sends no message and remains in the same state.
Test strategy	
Notes	Requires a means of provoking the SF Deleted; e.g. MIB command.

TP ID	TP/SS/DS/DSD/BO-H100
IEEE 802.16 Reference	Figure "DSD - Remotely Initiated Transaction state transition diagram" Figure "DSD - Remotely Initiated Transaction Holding Down state flow diagram"
PICS Item	
Initial Condition	IUT is operating and a service flow is established. A BS-Initiated DSD transaction has started. The IUT is in the Holding Down state.
Expected Behaviour	Check that: On receiving an SF Deleted command, the IUT sends no message and ends the DSD transaction.
Test strategy	
Notes	Requires a means of provoking the SF Deleted; e.g. MIB command.

TP ID	TP/SS/DS/DSD/TI-H000
IEEE 802.16 Reference	clauses 6.3.14.9.5.1 and 6.3.2.3.16
PICS Item	
Initial Condition	IUT is operational and a DS flow is established.
Expected Behaviour	Check that: When each time timer T7 expires with no reply received, the IUT re-sends a DSD-REQ n times and finally stops the initiated procedure.
Test strategy	
Notes	Requires a means to provoke the IUT to delete the service flow with a DSD-REQ.

TP ID	TP/SS/DS/DSD/TI-H001
IEEE 802.16 Reference	clauses 6.3.14.9.5.2 and 6.3.2.3.17
PICS Item	
Initial Condition	IUT is operational and an UL DS flow is established. The IUT has received a DSD-REQ and has replied with a DSD-RSP.
Expected Behaviour	Check that: On receiving a redundant copy of DSD-REQ for an established service flow, the IUT retransmits the same DSD-RSP previously send.
Test strategy	
Notes	

TP ID	TP/SS/DS/DSD/TI-H002
IEEE 802.16 Reference	Figure "DSD - Locally Initiated Transaction state transition diagram" Figure "DSD - Locally Initiated Transaction DSD-RSP Pending state flow diagram"
PICS Item	
Initial Condition	IUT is operating and a service flow is established. An SS-Initiated DSD transaction has started. The IUT is in the DSD-RSP Pending state.
Expected Behaviour	Check that: On expiry of T7 and retries are exhausted, the IUT sends no message and ends the DSD transaction.
Test strategy	
Notes	

TP ID	TP/SS/DS/DSD/TI-H003
IEEE 802.16 Reference	Figure "DSD - Locally Initiated Transaction state transition diagram" Figure "DSD - Locally Initiated Transaction Holding Down state flow diagram"
PICS Item	
Initial Condition	IUT is operating and a service flow is established. An SS-Initiated DSD transaction has started. The IUT is in the Holding Down state.
Expected Behaviour	Check that: On expiry of T10, the IUT sends no message and ends the DSD transaction.
Test strategy	
Notes	

TP ID	TP/SS/DS/DSD/TI-H004
IEEE 802.16 Reference	Figure "DSD - Remotely Initiated Transaction state transition diagram" Figure "DSD - Remotely Initiated Transaction Holding Down state flow diagram"
PICS Item	
Initial Condition	IUT is operating and a service flow is established. A BS-Initiated DSD transaction has started. The IUT is in the Holding Down state.
Expected Behaviour	Check that: On expiry of T10, the IUT sends no message and ends the DSD transaction.
Test strategy	
Notes	

5.3.5.4 Qos Parameter Sets (QPS)

TP ID	TP/SS/DS/QPS/BV-H000
IEEE 802.16 Reference	clauses 6.3.14.9.4.2 and 6.3.2.3.14
PICS Item	
Initial Condition	IUT is authorized, registered and a DS flow in provisioned state is established.
Expected Behaviour	Check that: On receiving a DSC-REQ to change the state of the service flow to the admitted state, the IUT transmits a DSC-RSP accepting the request.
Test strategy	
Notes	

TP ID	TP/SS/DS/QPS/BV-H001
IEEE 802.16 Reference	clauses 6.3.14.9.4.2 and 6.3.2.3.14
PICS Item	
Initial Condition	IUT is authorized, registered and a DS flow in provisioned state is established.
Expected Behaviour	Check that: On receiving a DSC-REQ to change the state of the service flow to the active state, the IUT transmits a DSC-RSP accepting the request.
Test strategy	
Notes	

TP ID	TP/SS/DS/QPS/BV-H002
IEEE 802.16 Reference	clauses 6.3.14.9.4.2 and 6.3.2.3.14
PICS Item	
Initial Condition	IUT is authorized, registered and a DS flow in active state is established.
Expected Behaviour	Check that: On receiving a DSC-REQ to change the state of the service flow to the admitted state, the IUT transmits a DSC-RSP accepting the request.
Test strategy	
Notes	

TP ID	TP/SS/DS/QPS/BV-H003
IEEE 802.16 Reference	clauses 6.3.14.9.4.2 and 6.3.2.3.14
PICS Item	
Initial Condition	IUT is authorized, registered and a DS flow in active state is established.
Expected Behaviour	Check that: On receiving a DSC-REQ to change the state of the service flow to the provisioned state, the IUT transmits a DSC-RSP accepting the request.
Test strategy	
Notes	

TP ID	TP/SS/DS/QPS/BV-H004
IEEE 802.16 Reference	clauses 6.3.14.9.4.2 and 6.3.2.3.14
PICS Item	
Initial Condition	IUT is authorized, registered and a DS flow in admitted state is established.
Expected Behaviour	Check that: On receiving a DSC-REQ to change the state of the service flow to the provisioned state, the IUT transmits a DSC-RSP accepting the request.
Test strategy	
Notes	

TP ID	TP/SS/DS/QPS/BV-H005
IEEE 802.16 Reference	clauses 6.3.14.9.4.2 and 6.3.2.3.14
PICS Item	
Initial Condition	IUT is authorized, registered and a DS flow in admitted state is established.
Expected Behaviour	Check that: On receiving a DSC-REQ to change the state of the service flow to the active state, the IUT transmits a DSC-RSP accepting the request.
Test strategy	
Notes	

TP ID	TP/SS/DS/QPS/BV-H100
IEEE 802.16 Reference	clauses 6.3.14.9.4 and 11.13
PICS Item	
Initial Condition	IUT is authorized, registered and a DS flow in active state is established.
Expected Behaviour	Check that: On receiving a DSC-REQ containing a null ActiveQoSParamSet, the IUT deactivates the referenced service flow after the DSC transaction is complete.
Test strategy	
Notes	

TP ID	TP/SS/DS/QPS/BV-H101
IEEE 802.16 Reference	clauses 6.3.14.9.4 and 11.13
PICS Item	
Initial Condition	IUT is authorized, registered and a DS flow in active state is established.
Expected Behaviour	Check that: On receiving a DSC-REQ containing only an AdmitQoSParamSet, the IUT deactivates the referenced service flow after the DSC transaction is complete.
Test strategy	
Notes	

TP ID	TP/SS/DS/QPS/BV-H102
IEEE 802.16 Reference	clauses 6.3.14.9.4 and 11.13
PICS Item	
Initial Condition	IUT is authorized, registered and a DS flow in active state is established.
Expected Behaviour	Check that: On receiving a DSC-REQ containing only a null AdmitQoSParamSet and a null ActiveQoSParamSet, the IUT readmits the referenced service flow after the DSC transaction is complete.
Test strategy	
Notes	

5.3.6   Bandwidth Allocation and Polling (BWA)

5.3.6.1   Request/Grant (REQ)

TP ID	TP/SS/BWA/REQ/BV-H000
IEEE 802.16 Reference	clause 6.3.3.7, Table "OFDM UIUC values", and clause 8.3.5.1
PICS Item	
Initial Condition	The IUT is operational. No DS flow is established. No MAC management message protocol exchanges are in process.

Expected Behaviour	Check that: On receiving a UL-MAP for its Basic CID, the IUT transmits one of the following per the UIUC in the UL-MAP:
	    either the value 0xFF in each unused byte of the UL bandwidth grant; or
	    formatting the unused space as a MAC PDU containing the Padding CID. The CI, EC, HT, and Type fields shall be set to zero. The length field shall be set to the number of unused bytes (including the size of the MAC header created for the padding MAC PDU) in the data burst The HCS shall be computed in the normal way; or
	    a Bandwidth Header Request with BR=0 on the IUT's Basic CID.

Test strategy	Straightforward. UIUC values are in the range 5 to 12.
Notes	

TP ID	TP/SS/BWA/REQ/BV-H001
IEEE 802.16 Reference	clauses 8.3.5.5, and 6.3.2.3.4
PICS Item	
Initial Condition	The IUT is operational and a Dynamic UL Service flow is established.
Expected Behaviour	Check that: On receiving a UL-MAP, the IUT transmits the service flow's MAC DATA PDUs per the Uplink Burst Profile corresponding to the UIUC in the UL-MAP.
Test strategy	1) Establish an UL service flow. 2) TE transmits UL-MAPs containing IEs granting Bandwidth to the IUT. 3) Verdict is assigned on IUT transmitting the MAC DATA PDU(s) for this service flow per the Uplink Burst Profile for each successive UL-MAP. UIUC values are in the range 5.12.
Notes	

TP ID	TP/SS/BWA/REQ/BV-H002
IEEE 802.16 Reference	clause 6.3.3.7, Table "OFDM UIUC values", clause 8.3.5.1
PICS Item	
Initial Condition	The IUT is operational. A UL service flow is established and data is being passed on the flow.

Expected Behaviour	Check that: On receiving a UL-MAP granting bandwidth larger than the service flow requires, the IUT transmits per the UIUC in the UL-MAP the service flow data and does one of the following with remaining space of the UL grant bandwidth:
	    either fills each unused byte with the value 0xFF; or
	    formats the unused space as a MAC PDU containing the Padding CID. The CI, EC, HT, and Type fields shall be set to zero. The length field shall be set to the number of unused bytes (including the size of the MAC header created for the padding MAC PDU) in the data burst The HCS shall be computed in the normal way; or
	    a Bandwidth Header Request with BR=0 on the IUT's Basic CID.

Test strategy	Straightforward. UIUC values are in the range 5.12.
Notes	

TP ID	TP/SS/BWA/REQ/BV-H003
IEEE 802.16 Reference	clause 6.3.6.1
PICS Item	
Initial Condition	The IUT is operational. An UL service flow is established. No MAC management message protocol exchanges are in process.
Expected Behaviour	Check that: On having data packets to transmit on the UL service flow and on receiving a UL-MAP IE for REQ Region Full, the IUT transmits a bandwidth request using REG Region-Full.
Test strategy	1) Bring the IUT to operational state. 2) Do not allocate grants to IUT. At the same time, provoke the IUT to send data packets for the UL service flow. 3) Transmit a UL-MAP with a REQ Region Full IE. 4) Assign PASS if IUT transmits a full contention bandwidth request in the REG Region-Full.
Notes	

TP ID	TP/SS/BWA/REQ/BV-H004
IEEE 802.16 Reference	clause 6.3.6.1
PICS Item	
Initial Condition	The IUT is operational. An UL service flow is established. The IUT receives grants.
Expected Behaviour	Check that: On having additional data packets for the UL service flow and on receiving a UL-MAP IE with the IUT's Basic CID and a UIUC in the range (5 to 12) and a REQ Region-Full, the IUT transmits one of the following to request bandwidth: - either a bandwidth request header message in a REQ Region Full; or - a bandwidth request header message in a burst with UIUC = (5.12); or - a piggyback bandwidth request.

Test strategy	1) Bring the IUT to operational state.
	 2) Establish an UL service flow.
	 3) Provoke the IUT to send data packets on the service flow.
	 4) Transmit a UL-MAP with a REQ Region Full UIUC in an IE and an IE with the IUT's Basic CID and UIUC = (5 to 12).
	 5) Assign PASS:
	    if IUT transmits a bandwidth request message in a REQ Region Full; or
	    IUT transmits a bandwidth request header message in a burst with UIUC = (5.12); or
	    IUT transmits a piggyback bandwidth request.

Notes	

TP ID	TP/SS/BWA/REQ/BV-H005
Deleted	

TP ID	TP/SS/BWA/REQ/BV-H100
IEEE 802.16 Reference	clause 6.3.6.1, paragraph 1-2
PICS Item	
Initial Condition	IUT implements PiggyBack Bandwidth Requests. The IUT is operational and an UL service flow is established. The IUT's allocated bandwidth has been reduced to the point that the IUT needs uplink bandwidth allocation.
Expected Behaviour	Check that: When the uplink bandwidth allocation is insufficient, the IUT transmits during any uplink allocation, except an Initial Ranging Interval, a bandwidth request as either a bandwidth request header or as a Piggyback Request.
Test strategy	
Notes	

TP ID	TP/SS/BWA/REQ/BV-H101
IEEE 802.16 Reference	clauses 6.3.6.3.1 and 6.3.2.2.2
PICS Item	
Initial Condition	IUT implements PiggyBack bandwidth request. An UL service flow is established.
Expected Behaviour	Check that: At some time when the IUT requires bandwidth, the IUT transmits a PiggyBack bandwidth request.
Test strategy	
Notes	

TP ID	TP/SS/BWA/REQ/BV-H200
IEEE 802.16 Reference	clause 6.3.8, paragraph 4
PICS Item	
Initial Condition	The IUT is operational and an UL service flow is established. The IUT's allocated bandwidth has been reduced to the point that the IUT needs uplink bandwidth allocation.
Expected Behaviour	Check that: In Contention Resolution for bandwidth requests, the IUT transmits the Bandwidth Request within its backoff window.
Test strategy	
Notes	

TP ID	TP/SS/BWA/REQ/BV-H201
IEEE 802.16 Reference	clause 6.3.8, paragraph 7
PICS Item	
Initial Condition	The IUT is operational and an UL service flow is established. The IUT is using Contention Resolution to obtain bandwidth and has transmitted its first Bandwidth Request in the backoff window.
Expected Behaviour	Check that: On not receiving a bandwidth grant for the request, the IUT retransmits the Bandwidth Request placed randomly within a new backoff window increased by two as long as the new window is less than the maximum backoff window.
Test strategy	
Notes	

TP ID	TP/SS/BWA/REQ/BV-H202
IEEE 802.16 Reference	Clause 6.3.8, paragraph 8 Table "Parameters and constants" "Contention Ranging Retries"
PICS Item	
Initial Condition	The IUT is operational and an UL service flow is established. The IUT is using Contention Resolution to obtain bandwidth and has transmitted its first Bandwidth Request in the backoff window.
Expected Behaviour	Check that: After Contention Ranging Retries of retransmitting the Bandwidth Request without receiving a bandwidth grant for the request, the IUT no longer requests the bandwidth and the discards the proposed user data PDU.
Test strategy	
Notes	

TP ID	TP/SS/BWA/REQ/BV-H203
IEEE 802.16 Reference	clause 6.3.8, paragraph 9
PICS Item	
Initial Condition	The IUT is operational and has established an UL service flow. The IUT has started to request bandwidth using Contention Resolution.
Expected Behaviour	Check that: On receiving a unicast Request IE, the IUT stops Contention Resolution and uses the burst given in the Request IE.
Test strategy	
Notes	

TP ID	TP/SS/BWA/REQ/BV-H204
IEEE 802.16 Reference	clause 6.3.8, paragraph 6
PICS Item	
Initial Condition	The IUT is operational and has established an UL service flow. The IUT has started to request bandwidth using Contention Resolution.
Expected Behaviour	Check that: On receiving a Data Grant Burst Type IE, the IUT stops Contention Resolution and uses the burst given in the Data Grant Burst Type IE.
Test strategy	
Notes	

TP ID	TP/SS/BWA/REQ/BV-H300
IEEE 802.16 Reference	clause 8.3.7.3.3, paragraph 1
PICS Item	
Initial Condition	IUT supports Focused Contention.
Expected Behaviour	Check that: On receiving a UL-MAP with an IE (UIUC=3) with a REQ Region Focused IE, the IUT sends the Phase 1 Focused Contention bandwidth requesting signal described in clause 8.3.7.3.3 paragraph 2-5 (Phase 1 is now complete).
Test strategy	
Notes	

TP ID	TP/SS/BWA/REQ/BV-H301
IEEE 802.16 Reference	clause 8.3.7.3.3, paragraph 1
PICS Item	
Initial Condition	IUT supports Focused Contention and has completed Phase 1.
Expected Behaviour	Check that: On receiving a UL-MAP with and IE (UIUC=4) containing a Focused Contention IE with the Phase 1 parameters that identify the IUT, the IUT transmits a bandwidth request MAC header using the most robust burst profile in the burst indicated in the UL-MAP IE (UIUC=4).
Test strategy	
Notes	

TP ID	TP/SS/BWA/REQ/BV-H400
IEEE 802.16 Reference	clause 6.3.5.2.4
PICS Item	
Initial Condition	The IUT is operating and an UL BE service flow is established.
Expected Behaviour	Check that: To obtain uplink user data transmission opportunities, the IUT uses unicast or data transmission opportunities or Contention request opportunities.
Test strategy	
Notes	

TP ID	TP/SS/BWA/REQ/BV-H401
IEEE 802.16 Reference	clause 6.3.5.2.2, paragraph 2
PICS Item	
Initial Condition	IUT is operational and has established an UL rtPS service flow that is transmitting data.
Expected Behaviour	Check that: To obtain uplink transmission opportunities on this connection, the IUT uses only unicast request opportunities or data transmission opportunities.
Test strategy	
Notes	

TP ID	TP/SS/BWA/REQ/BV-H402
IEEE 802.16 Reference	
PICS Item	IUT is operational and has established an UL nrtPS service flow that is transmitting data.
Initial Condition	
Expected Behaviour	Check that: To obtain uplink transmission opportunities on this connection, the IUT uses unicast request opportunities, data transmission opportunities, or Contention Request opportunities.
Test strategy	
Notes	

TP ID	TP/SS/BWA/REQ/BV-H403
IEEE 802.16 Reference	clause 6.3.5.2.1
PICS Item	
Initial Condition	IUT is operating and an UL UGS service flow is established.
Expected Behaviour	Check that: When it detects that the service flow exceeds its transmit queue size, the IUT sets to 1 the Slip Indicator bit in the Grant Management field.
Test strategy	
Notes	

TP ID	TP/SS/BWA/REQ/BV-H404
IEEE 802.16 Reference	clause 6.3.5.2.1, paragraph 2
PICS Item	
Initial Condition	IUT is operational and has established an UL UGS service flow that is transmitting data. The IUT is transmitting a Grant Management field with the Slip Indicator bit set to 1.
Expected Behaviour	Check that: When the service flow is back within the IUT's transmit queue size, the IUT clears the Slip Indicator bit to 0 in the Grant Management field.
Test strategy	
Notes	

TP ID	TP/SS/BWA/REQ/BV-H405
IEEE 802.16 Reference	clause 6.3.6.3.3 Figure "PM bit usage"
PICS Item	
Initial Condition	The IUT is operational and transmitting on a UL UGS connection. Piggybacking and bandwidth stealing are exhausted.
Expected Behaviour	Check that: To request bandwidth for requirements in addition to the UGS connection, the IUT sets the PM bit to 0x1 in the Grant Management sub header.
Test strategy	
Notes	

TP ID	TP/SS/BWA/REQ/BI-H000
IEEE 802.16 Reference	clause 6.3.5.2.1
PICS Item	
Initial Condition	The IUT is operational.
Expected Behaviour	Check that: On receiving a bandwidth request, the IUT discards the PDU.
Test strategy	
Notes	

5.3.6.2   Multicast Polling (MCP)

TP ID	TP/SS/BWA/MCP/BV-H000
IEEE 802.16 Reference	clauses 6.3.2.3.18, 6.3.2.3.19 and 6.3.12 Figure "Multicast Polling Assignment - SS"
PICS Item	
Initial Condition	The IUT is operational but inactive.
Expected Behaviour	Check that: On receiving a valid MCA-REQ, the IUT sends transmits a valid MCA-RSP message.
Test strategy	
Notes	

TP ID	TP/SS/BWA/MCP/BV-H001
IEEE 802.16 Reference	clauses 6.3.2.3.18, 6.3.2.3.19 and 6.3.12 Figure "Multicast Polling Assignment - SS" clause 6.3.6.3.2, paragraph 3
PICS Item	
Initial Condition	The IUT is operational. It has received a valid MCA-REQ and IUT transmitted a valid MCA-RSP message with the Confirmation Code = Successful.
Expected Behaviour	Check that: On receiving bandwidth grants for the Multicast CID in the MCA-REQ and on needing bandwidth, the IUT requests bandwidth using the contention resolution algorithm.
Test strategy	
Notes	

TP ID	TP/SS/BWA/MCP/BV-H002
IEEE 802.16 Reference	clauses 6.3.2.3.18, 6.3.2.3.19 and 6.3.12 Figure "Multicast Polling Assignment - SS" clause 6.3.6.3.2 paragraph 3
PICS Item	
Initial Condition	The IUT is operational but inactive. It has received a valid MCA-REQ and IUT transmitted a valid MCA-RSP message with the Confirmation Code = Successful.
Expected Behaviour	Check that: On receiving bandwidth grants for the Multicast CID in the MCA-REQ and not needing bandwidth, the IUT neither requests bandwidth nor transmits zero-length bandwidth requests.
Test strategy	
Notes	

TP ID	TP/SS/BWA/MCP/BV-H003
IEEE 802.16 Reference	clauses 6.3.2.3.18, 6.3.2.3.19, and 6.3.12 Figure "Multicast Polling Assignment - SS" clause 6.3.6.3.2 paragraph 4
PICS Item	
Initial Condition	The IUT is operational. It is in a Multicast Polling Group and has transmitted a bandwidth request on the Multicast CID using the contention resolution algorithm.
Expected Behaviour	Check that: On not receiving any grant in the number of subsequent UL-MAP messages specified by the parameter Contention-based reservation timeout, the IUT resends another bandwidth request according to the contention resolution algorithm in the case of failed bandwidth requests.
Test strategy	
Notes	

TP ID	TP/SS/BWA/MCP/BV-H004
IEEE 802.16 Reference	clause 6.3.8, paragraph 9
PICS Item	
Initial Condition	The IUT is operational. It is in a Multicast Polling Group and has transmitted a bandwidth request on the Multicast CID using the contention resolution algorithm. Having not received any grant in the number of subsequent UL-MAP messages specified by the parameter Contention-based reservation timeout, the IUT resent another bandwidth requests according to the contention resolution algorithm in the case of failed bandwidth requests.
Expected Behaviour	Check that: Having received a Data Grant Burst Type IE for the Multicast CID, the IUT stops contention resolution and uses the data transmission opportunity.
Test strategy	
Notes	

TP ID	TP/SS/BWA/MCP/BV-H100
IEEE 802.16 Reference	clause 6.3.2.3.18, 6.3.2.3.19 and 6.3.12 Figure "Multicast Polling Assignment - SS"
PICS Item	
Initial Condition	The IUT is operational and in a Multicast Polling Group.
Expected Behaviour	Check that: On receiving an MCA-REQ for leaving the multicast group indicated by the Multicast CID, the IUT transmits a valid MCA-RSP.
Test strategy	
Notes	

TP ID	TP/SS/BWA/MCP/BV-H101
IEEE 802.16 Reference	clauses 6.3.2.3.18, 6.3.2.3.19 and 6.3.12 Figure "Multicast Polling Assignment - SS"
PICS Item	
Initial Condition	The IUT is operational and in a Multicast Polling Group. It has then received an MCA-REQ for leaving the multicast group indicated by the Multicast CID, and transmitted a valid MCA-RSP with Confirmation Code = Successful.
Expected Behaviour	Check that: On receiving bandwidth grants for the former Multicast CID in the MCA-REQ and needing bandwidth, the IUT no longer requests bandwidth using the Multicast Polling method.
Test strategy	
Notes	

TP ID	TP/SS/BWA/MCP/BV-H200
IEEE 802.16 Reference	clauses 6.3.6.3.2 and 6.3.8
PICS Item	
Initial Condition	The IUT is operational.
Expected Behaviour	Check that: On receiving a poll on a broadcast CID and needing bandwidth, the IUT replies using the contention resolution algorithm to select the slot in which to transmit the initial bandwidth request.
Test strategy	
Notes	

TP ID	TP/SS/BWA/MCP/BV-H201
IEEE 802.16 Reference	clauses 6.3.6.3.2 and 6.3.8
PICS Item	
Initial Condition	The IUT is operational.
Expected Behaviour	Check that: On receiving a poll on a broadcast CID and not needing bandwidth, the IUT does not reply and does not send zero-length Bandwidth Requests.
Test strategy	
Notes	

TP ID	TP/SS/BWA/MCP/BV-H202
IEEE 802.16 Reference	clauses 6.3.6.3.2 and 6.3.8
PICS Item	
Initial Condition	The IUT is operational and has transmitted a bandwidth request on the Broadcast CID using the contention resolution algorithm.
Expected Behaviour	Check that: On not receiving any grant in the number of subsequent UL-MAP messages specified by the parameter Contention-based reservation timeout, the IUT resends another bandwidth request according to the contention resolution algorithm in the case of failed bandwidth requests.
Test strategy	
Notes	

TP ID	TP/SS/BWA/MCP/BV-H203
IEEE 802.16 Reference	clause 6.3.8, paragraph 9
PICS Item	
Initial Condition	The IUT is operational and has transmitted a bandwidth request on the Broadcast CID using the contention resolution algorithm. Having not received any grant in the number of subsequent UL-MAP messages specified by the parameter Contention-based reservation timeout, the IUT resent another bandwidth requests according to the contention resolution algorithm in the case of failed bandwidth requests.
Expected Behaviour	Check that: Having received a Data Grant Burst Type IE for the Broadcast CID, the IUT stops contention resolution and uses the data transmission opportunity.
Test strategy	
Notes	

5.3.7   Reset and Re-registration (RER)

TP ID	TP/SS/RER/BV-H000
IEEE 802.16 Reference	clause 6.3.2.3.22
PICS Item	
Initial Condition	The IUT is operational.
Expected Behaviour	Check that: On receiving a valid RES-CMD on the Basic CID, the IUT resets itself, reinitialization, and repeats initial system access.
Test strategy	
Notes	

TP ID	TP/SS/RER/BV-H100
IEEE 802.16 Reference	clause 6.3.2.3.26 Table "Action Codes and actions"
PICS Item	
Initial Condition	The IUT is operational on a channel and can access more than one data channel.
Expected Behaviour	Check that: On receiving a valid DREG-CMD with an Action Code set to 0x00, the IUT leaves the current operational channel and accesses another available channel.
Test strategy	
Notes	

TP ID	TP/SS/RER/BV-H101
IEEE 802.16 Reference	clause 6.3.2.3.26 Table "Action Codes and actions"
PICS Item	
Initial Condition	The IUT is operational on a channel.
Expected Behaviour	Check that: On receiving a valid DREG-CMD containing an Action Code set to 0x01, the IUT listens on the current operational channel but does not transmit on any connection.
Test strategy	
Notes	

TP ID	TP/SS/RER/BV-H102
IEEE 802.16 Reference	clauses 6.3.2.3.22 and 6.3.2.3.26
PICS Item	
Initial Condition	The IUT is listening on the current operational channel but does not transmit on any connection (as a result of receiving a DREG-CMD with its Action Code set to 0x01).
Expected Behaviour	Check that: On receiving a valid RES-CMD, the IUT resets itself, reinitialization, and repeats initial system access.
Test strategy	
Notes	

TP ID	TP/SS/RER/BV-H103
IEEE 802.16 Reference	clause 6.3.2.3.26 Table "Action Codes and actions"
PICS Item	
Initial Condition	The IUT is listening on the current operational channel but does not transmit on any connection (as a result of receiving a DREG-CMD with its Action Code set to 0x01).
Expected Behaviour	Check that: On receiving a valid DREG-CMD containing an Action Code set to 0x03), the IUT returns to normal operation and transmits on any of its active connections.
Test strategy	
Notes	

TP ID	TP/SS/RER/BV-H104
IEEE 802.16 Reference	clause 6.3.2.3.26 Table "Action Codes and actions"
PICS Item	
Initial Condition	The IUT is operational on a channel.
Expected Behaviour	Check that: On receiving a valid DREG-CMD containing Action Code set to 0x02, the IUT listens on the current operational channel but only transmit on the Basic and Primary connections. If a Secondary Management Connection exists, the IUT transmits on the Secondary Management Connection as well.
Test strategy	
Notes	

TP ID	TP/SS/RER/BV-H105
IEEE 802.16 Reference	clause 6.3.2.3.26 Table "Action Codes and actions"
PICS Item	
Initial Condition	The IUT is listening on the current operational channel but is transmitting only on the Basic, Primary, and Secondary Management (if existing) connections (as a result of receiving a DREG-CMD with its Action Code set to 0x01).
Expected Behaviour	Check that: On receiving a valid DREG-CMD containing an Action Code set to 0x03, the IUT returns to normal operation and transmits on any of its active connections.
Test strategy	
Notes	

TP ID	TP/SS/RER/BI-H000
IEEE 802.16 Reference	clause 6.3.2.3, paragraph 1
PICS Item	
Initial Condition	The IUT is operational.
Expected Behaviour	Check that: On receiving a RES-CMD message with erroneously encoded parameters, the IUT silently discards the RES-CMD message.
Test strategy	
Notes	

TP ID	TP/SS/RER/BI-H001
IEEE 802.16 Reference	clause 6.3.2.3, paragraph 1
PICS Item	
Initial Condition	The IUT is operational.
Expected Behaviour	Check that: On receiving a DREG-CMD message with erroneously encoded parameters, the IUT silently discards the DREG-CMD message.
Test strategy	
Notes	

5.3.8   Clock Comparison (CCC)

TP ID	TP/SS/CCC/BV-H000
IEEE 802.16 Reference	clause 6.3.2.3.25
PICS Item	
Initial Condition	The IUT is operational and supports the CLK-CMP message.
Expected Behaviour	Check that: On receiving a valid CLK-CMP, the IUT reconstructs its network clock signals according to the contents of the CLK-CMP.
Test strategy	
Notes	

TP ID	TP/SS/CCC/BI-H000
IEEE 802.16 Reference	clause 6.3.2.3, paragraph 1
PICS Item	
Initial Condition	The IUT is operational.
Expected Behaviour	Check that: On receiving a CLK-CMPmessage with erroneously encoded parameters, the IUT silently discards the CLK-CMP message.
Test strategy	
Notes	

5.3.9   MAC PDU Construction (MAC)

TP ID	TP/SS/MAC/BV-H000
IEEE 802.16 Reference	clause 6.3.2.1.1 Table "Generic MAC Header Fields"
PICS Item	
Initial Condition	IUT is operating and generating a MAC PDU.
Expected Behaviour	Check that: The IUT calculates the HCS value for the first five bytes of the cell header and inserts the results into the HCS. The HCS is the remainder of the division (Modulo 2) by the generator polynomial $g(D)=D^8+D^2+D+1$ of the polynomial D^8 multiplied by the content of the header excluding the HCS field.
Test strategy	
Notes	

TP ID	TP/SS/MAC/BV-H001
IEEE 802.16 Reference	clause 6.3.2.2
PICS Item	
Initial Condition	IUT is operating and generating a MAC PDU.
Expected Behaviour	Check that: When a Grant Management sub header and a Fragmentation sub header are in the PDU, the IUT places the Grant Management sub header before the Fragmentation sub header.
Test strategy	
Notes	

TP ID	TP/SS/MAC/BV-H002
IEEE 802.16 Reference	clause 6.3.2.2
PICS Item	
Initial Condition	IUT is operating and generating a MAC PDU.
Expected Behaviour	Check that: When Mesh and other sub headers are in the same PDU, the IUT places the Mesh sub header first in the sub header order.
Test strategy	
Notes	

TP ID	TP/SS/MAC/BV-H003
IEEE 802.16 Reference	clause 6.3.2.2
PICS Item	
Initial Condition	IUT is operating and generating a MAC PDU.
Expected Behaviour	Check that: When FAST-FEEDBACK sub header and other per-PDU sub headers are in the same PDU, the IUT places the FAST-FEEDBACK sub header as the last sub header.
Test strategy	
Notes	

TP ID	TP/SS/MAC/BV-H004
IEEE 802.16 Reference	clause 6.3.2.2
PICS Item	
Initial Condition	IUT is operating and generating a MAC PDU.
Expected Behaviour	Check that: The IUT does not place both Packing and Fragmentation sub headers in the same MAC PDU.
Test strategy	
Notes	

TP ID	TP/SS/MAC/BV-H005
IEEE 802.16 Reference	clause 6.3.2.2
PICS Item	
Initial Condition	IUT is operating and generating a MAC PDU.
Expected Behaviour	Check that: When both per-PDU sub headers and per-SDU sub headers are in the same MAC PDU, the IUT places the per-PDU sub headers always before first per-SDU sub header.
Test strategy	
Notes	

TP ID	TP/SS/MAC/BV-H006
IEEE 802.16 Reference	clause 6.3.2.3
PICS Item	
Initial Condition	IUT is operating and generating a MAC PDU.
Expected Behaviour	Check that: The IUT neither fragments nor packs MAC Management messages on the Basic, Broadcast, and Initial Ranging connections.
Test strategy	
Notes	

TP ID	TP/SS/MAC/BV-H007
IEEE 802.16 Reference	clause 6.3.3.7
PICS Item	
Initial Condition	IUT is operating and generating a MAC PDU.
Expected Behaviour	Check that: When space within an allocated data burst cannot be used and the unused space is less than the size of a MAC header, the IUT sets each byte of the unused space to the stuff byte value 0xFF.
Test strategy	
Notes	

TP ID	TP/SS/MAC/BV-H008
IEEE 802.16 Reference	clause 6.3.3.7 Table "CIDs"
PICS Item	
Initial Condition	IUT is operating and generating a MAC PDU.

Expected Behaviour	Check that: When space within an allocated data burst cannot be used and the unused space size is at least the size of a MAC header:
	   either the IUT sets each byte of the unused space to the stuff byte value 0xFF; or
	   the IUT formats the unused space as a MAC PDU. In this PDU, the MAC CID is set to the value of 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. The HCS is calculated in the usual way.

Test strategy	
Notes	

TP ID	TP/SS/MAC/BV-H009
IEEE 802.16 Reference	clause 6.3.6.3.1
PICS Item	
Initial Condition	IUT is operating and has received an UL-MAP with a Request IE for a bandwidth request.
Expected Behaviour	Check that: When it requires no bandwidth, the IUT sends stuff bytes (0xFF) in the interval given in the UL-MAP.
Test strategy	
Notes	

TP ID	TP/SS/MAC/BI-H000
IEEE 802.16 Reference	clause 6.3.2.3
PICS Item	
Initial Condition	IUT is operating.
Expected Behaviour	Check that: On receiving a MAC Management Message containing a "reserved" Type value, the IUT silently discards the message.
Test strategy	
Notes	

TP ID	TP/SS/MAC/BI-H001
IEEE 802.16 Reference	clause 6.3.2.3
PICS Item	
Initial Condition	IUT is operating.
Expected Behaviour	Check that: On receiving a MAC Management Message not containing all required parameters, the IUT silently discards the message.
Test strategy	
Notes	

TP ID	TP/SS/MAC/BI-H002
IEEE 802.16 Reference	clause 6.3.2.3
PICS Item	
Initial Condition	IUT is operating.
Expected Behaviour	Check that: On receiving a MAC Management Message containing erroneously encoded parameters, the IUT silently discards the message.
Test strategy	
Notes	

5.3.9.1   Packing (PACK)

TP ID	TP/SS/MAC/PACK/BV-H000
IEEE 802.16 Reference	clause 6.3.3.3
PICS Item	
Initial Condition	IUT is operating using a Packet CS. Packing is ON.
Expected Behaviour	Check that: On processing packed DL MAC PDUs, the IUT unpacks the SDUs from the DL MAC PDU.
Test strategy	
Notes	

TP ID	TP/SS/MAC/PACK/BV-H001
IEEE 802.16 Reference	clause 6.3.3.3
PICS Item	
Initial Condition	IUT is operating using a Packet CS. Packing is ON.
Expected Behaviour	Check that: On processing packed DL MAC PDUs containing fragments, the IUT unpacks and defragments the SDUs from the DL MAC PDU.
Test strategy	
Notes	

TP ID	TP/SS/MAC/PACK/BV-H100
IEEE 802.16 Reference	clauses 5.1.2.3, paragraph 1 and 12.1.1.1
PICS Item	
Initial Condition	IUT implements Basic ATM MAC system profile and is operating. Packing is ON.
Expected Behaviour	Check that: The IUT packs ATM cells into a single UL MAC PDU.
Test strategy	
Notes	Packing is a mandatory function but an implementation is not required to pack SDUs even when the possibility exists to pack them.

TP ID	TP/SS/MAC/PACK/BV-H101
IEEE 802.16 Reference	clause 6.3.3.4
PICS Item	
Initial Condition	IUT is operating using a Packet CS. Packing is ON.

Expected Behaviour	Check that: When generating MAC PDUS, the IUT:
	  - either packs multiple MAC SDUs into a single MAC PDU; or
	  - transmits each MAC SDU into a single MAC PDU for each SDU.

Test strategy	
Notes	Packing is a mandatory function but an implementation is not required to pack SDUs even when the possibility exists to pack them.

TP ID	TP/SS/MAC/PACK/BV-H102
IEEE 802.16 Reference	clause 6.3.2.2.3
PICS Item	
Initial Condition	IUT is operating using a Packet CS. Packing is ON.
Expected Behaviour	Check that: When packing variable-length MAC SDUs, the IUT precedes each packed SDU with a Packing sub header.
Test strategy	
Notes	Packing is a mandatory function but an implementation is not required to pack SDUs even when the possibility exists to pack them.

TP ID	TP/SS/MAC/PACK/BV-H103
IEEE 802.16 Reference	clause 6.3.3.4.1.2
PICS Item	
Initial Condition	IUT is operating using a Packet CS. Packing and Fragmentation is ON.
Expected Behaviour	Check that: When packing variable-length MAC SDUs that are fragmentable, the IUT precedes each packed SDU with a Packing sub header that contains the fragmentation information for the MAC SDU fragments.
Test strategy	
Notes	Packing is a mandatory function but an implementation is not required to pack SDUs even when the possibility exists to pack them.

TP ID	TP/SS/MAC/PACK/BV-H104
IEEE 802.16 Reference	clause 6.3.2.2.4
PICS Item	
Initial Condition	IUT is operating using a Packet CS on an ARQ UL connection. Packing is ON.
Expected Behaviour	Check that: When generating a packed MAC PDU for the connection, the IUT places the ARQ Feedback message as the first packed payload.
Test strategy	
Notes	

TP ID	TP/SS/MAC/PACK/BV-H105
IEEE 802.16 Reference	clause 6.3.3.4.1.1
PICS Item	
Initial Condition	IUT is operating using a Packet CS on a non-ARQ UL connection.
Expected Behaviour	Check that: For packing fixed-length blocks, the Request/Transmission policy is set to allow packing and to prohibit fragmentation.
Test strategy	
Notes	

TP ID	TP/SS/MAC/PACK/BV-H106
IEEE 802.16 Reference	clause 6.3.3.4.1.1
PICS Item	
Initial Condition	IUT is setting up use of a Packet CS on a non-ARQ UL connection. The DSA transaction will be SS-initiated.
Expected Behaviour	Check that: When generating the DSA-REQ for fixed-length SDUs, the IUT includes the SDU size in the DSA-REQ.
Test strategy	
Notes	

5.3.9.2   Fragmentation (FRAG)

TP ID	TP/SS/MAC/FRAG/BV-H000
IEEE 802.16 Reference	clause 6.3.3.3
PICS Item	
Initial Condition	IUT is operating using a Packet CS. Packing is OFF.
Expected Behaviour	Check that: On processing DL MAC PDUs, the IUT reassembles fragments into SDUs.
Test strategy	
Notes	

TP ID	TP/SS/MAC/FRAG/BV-H001
IEEE 802.16 Reference	clause 6.3.3.3.1
PICS Item	
Initial Condition	IUT is operating a non-ARQ DL connection. Packing is OFF.
Expected Behaviour	Check that: When the IUT processes fragments in sequence but detects the loss of intermediate packets, the IUT discards all MAC PDUs on the connection: - either until a new first fragment is detected; - or until a non-fragmented MAC PDU is detected.
Test strategy	
Notes	

TP ID	TP/SS/MAC/FRAG/BV-H100
IEEE 802.16 Reference	clauses 5.1.2.3, paragraph 1 and 12.1.1.1
PICS Item	
Initial Condition	IUT implements Basic ATM MAC system profile and is operating.
Expected Behaviour	Check that: When generating MAC PDUs, the IUT fragments oversized SDUs on the Primary and Secondary Management connections.
Test strategy	
Notes	

TP ID	TP/SS/MAC/FRAG/BV-H101
IEEE 802.16 Reference	clauses 6.3.3.3, 12.1.1.2 and 6.3.2.3
PICS Item	
Initial Condition	IUT is operating using a Packet CS. Packing is OFF.
Expected Behaviour	Check that: When generating MAC PDUS, the IUT fragments oversized SDUs on all connections except for the Basic, Broadcast, and Initial Ranging connections.
Test strategy	
Notes	

TP ID	TP/SS/MAC/FRAG/BV-H102
IEEE 802.16 Reference	clause 6.3.3.4.1.2
PICS Item	
Initial Condition	IUT is operating on a non-ARQ UL connection. Packing is OFF.
Expected Behaviour	Check that: When generating MAC PDUs containing fragments, the IUT transmits the fragments only once and in sequence.
Test strategy	
Notes	

TP ID	TP/SS/MAC/FRAG/BV-H103
IEEE 802.16 Reference	clause 6.3.3.4.1.2
PICS Item	
Initial Condition	IUT is operating on a non-ARQ UL connection. Packing is OFF.
Expected Behaviour	Check that: When generating MAC PDUs for variable-length SDUs, the IUT places the fragmentation information for individual MAC SDU fragments in the corresponding sub header.
Test strategy	
Notes	

TP ID	TP/SS/MAC/FRAG/BV-H104
IEEE 802.16 Reference	clause 6.3.3.3.2
PICS Item	
Initial Condition	IUT is operating on an UL ARQ connection. Packing is OFF.
Expected Behaviour	Check that: The IUT generates fragments for transmission by concatenating sets of ARQ blocks with adjacent sequence numbers.
Test strategy	
Notes	

TP ID	TP/SS/MAC/FRAG/BV-H105
IEEE 802.16 Reference	clause 6.3.3.4.2
PICS Item	
Initial Condition	IUT is operating on an ARQ UL connection. Packing is OFF.
Expected Behaviour	Check that: When generating MAC PDUs containing variable-length SDUs, the IUT places the fragmentation information for individual MAC SDU fragments in the corresponding Fragment sub header.
Test strategy	
Notes	

5.3.9.3   PDU Concatenation (CAT)

TP ID	TP/SS/MAC/CAT/BV-H000
IEEE 802.16 Reference	clause 6.3.3.2
PICS Item	
Initial Condition	IUT is operating.
Expected Behaviour	Check that: On receiving a downlink burst that contains concatenated MAC PDUs, the IUT presents the MAC SDUs after reassembly of the MAC PDUs to the correct MAC SAP.
Test strategy	
Notes	

TP ID	TP/SS/MAC/CAT/BV-H001
IEEE 802.16 Reference	clause 6.3.3.2
PICS Item	
Initial Condition	IUT is operating.
Expected Behaviour	Check that: When generating contents of an uplink burst, the IUT concatenates MAC Management, User Data, and Bandwidth Request PDUs to fill the burst.
Test strategy	
Notes	

5.3.9.4   Cyclic Redundancy Check (CRC)

TP ID	TP/SS/MAC/CRC/BV-H000
IEEE 802.16 Reference	clauses 6.3.1.1, paragraph 2 and 6.3.3.5
PICS Item	
Initial Condition	
Expected Behaviour	Check that: When generating a generic MAC header, the IUT includes a CRC as defined in IEEE 802.3 [9]. The CRT covers the generic MAC header and MAC PDU payload after its encryption.
Test strategy	
Notes	

TP ID	TP/SS/MAC/CRC/BV-H001
IEEE 802.16 Reference	clause 6.3.3.5
PICS Item	
Initial Condition	
Expected Behaviour	Check that: When generating bandwidth request headers, the IUT does not protect the MAC header with a CRC.
Test strategy	
Notes	

TP ID	TP/SS/MAC/CRC/BV-H002
IEEE 802.16 Reference	clause 6.3.2.3, paragraph 1
PICS Item	
Initial Condition	
Expected Behaviour	Check that: When generating messages carried on the Initial Ranging, Broadcast, Fragmentable Broadcast, Basic, and Primary Management connections, the IUT enables CRC usage.
Test strategy	
Notes	For SCa, OFDM, and OFDMA PHY layers.

TP ID	TP/SS/MAC/CRC/BV-H003
IEEE 802.16 Reference	clause 11.13.12
PICS Item	
Initial Condition	IUT is operational. An UL service flow has been established with a Request/Transmission policy bit #6 set to excluding the CRC in MAC Data PDUs.
Expected Behaviour	Check that: When generating MAC PDUs for an UL service flow, the IUT does not include the CRC field in the MAC Data PDU for this service flow.
Test strategy	
Notes	May not be testable. The question is whether CRC can be obtained from the test tool hardware.

5.3.9.5   ARQ (ARQ)

5.3.9.5.1   Setup (SET)

TP ID	TP/SS/MAC/ARQ/SET/BV-H000
IEEE 802.16 Reference	clause 11.13.18.1
PICS Item	
Initial Condition	IUT is operational.
Expected Behaviour	Check that: When the IUT has accepted a BS-Initiated DSA transaction with the ARQ Enable field in the DSA-REQ set to ARQ Not Requested (0), the IUT does not implement ARQ for the service flow.
Test strategy	
Notes	

TP ID	TP/SS/MAC/ARQ/SET/BV-H001
IEEE 802.16 Reference	clause 11.13.18.1
PICS Item	
Initial Condition	IUT is operational.
Expected Behaviour	Check that: When the IUT has accepted an SS-Initiated DSA transaction with the ARQ Enable field in the DSA-RSP set to ARQ Not Accepted (0), the IUT does not implement ARQ for the service flow.
Test strategy	
Notes	

TP ID	TP/SS/MAC/ARQ/SET/BV-H002
IEEE 802.16 Reference	clause 11.13.18.1
PICS Item	
Initial Condition	IUT is operational.

Expected Behaviour	Check that: On receiving a DSA-REQ with the ARQ Enable field set to ARQ Mandated (2), the IUT transmits a DSA-RSP that:
	    - either rejects the DSA-REQ; or
	    - accepts the DSA-REQ and implements ARQ on the service flow.

Test strategy	
Notes	

TP ID	TP/SS/MAC/ARQ/SET/BV-H003
IEEE 802.16 Reference	clause 6.3.4.5
PICS Item	
Initial Condition	The IUT is operational. An ARQ-enabled connection is established.
Expected Behaviour	Check that: The IUT uses CRC-32 for error detection of all ARQ-enabled MAC PDUs.
Test strategy	
Notes	802.16 does not specifically say what is to be done with PDU if a CRC-32 error is detected.

TP ID	TP/SS/MAC/ARQ/SET/BV-H004
IEEE 802.16 Reference	clause 11.13.18.2
PICS Item	
Initial Condition	The IUT is operational and has transmitted a DSA-REQ to enable ARQ with an ARQ_WINDOW_SIZE field.
Expected Behaviour	Check that: On receiving a DSA-RSP with an ARQ_WINDOW_SIZE value smaller than that in the DSA-REQ, the IUT uses the smaller of the two values.
Test strategy	
Notes	

TP ID	TP/SS/MAC/ARQ/SET/BV-H005
IEEE 802.16 Reference	clause 11.13.18.2
PICS Item	
Initial Condition	The IUT is operational and has transmitted a DSA-REQ to enable ARQ with an ARQ_WINDOW_SIZE field.
Expected Behaviour	Check that: On receiving a DSA-RSP with an ARQ_WINDOW_SIZE value larger than that in the DSA-REQ, the IUT uses the smaller of the two values.
Test strategy	
Notes	

TP ID	TP/SS/MAC/ARQ/SET/BV-H006
IEEE 802.16 Reference	clause 11.13.18.8
PICS Item	
Initial Condition	The IUT is operational.
Expected Behaviour	Check that: When the IUT receives a DSA-REQ to setup an ARQ service flow containing ARQ_BLOCK_SIZE, the IUT transmits a DSA-RSP containing ARQ_BLOCK_SIZE less than or equal to that in the DSA-REQ. For a successful DSA transaction, the IUT uses the ARQ_BLOCK_SIZE value in the DSA-RSP.
Test strategy	
Notes	

TP ID	TP/SS/MAC/ARQ/SET/BV-H007
IEEE 802.16 Reference	clause 11.13.18.8
PICS Item	
Initial Condition	The IUT is operational.
Expected Behaviour	Check that: When the IUT receives a DSA-REQ to setup an ARQ service flow and the ARQ_BLOCK_SIZE is missing, the IUT transmits a DSA-RSP containing ARQ_BLOCK_SIZE less than or equal to the maximum value allowed for ARQ_BLOCK_SIZE. For a successful DSA transaction, the IUT uses the ARQ_BLOCK_SIZE value in the DSA-RSP.
Test strategy	
Notes	

TP ID	TP/SS/MAC/ARQ/SET/TI-H000
IEEE 802.16 Reference	clause 11.13.18.3
PICS Item	
Initial Condition	The IUT is operational and has received a DSA-REQ with appropriate ARQ_RETRY_TIMEOUT parameters. The DSA transaction is successful.
Expected Behaviour	Check that: The IUT sets the ARQ_RETRY_TIMEOUT to the sum of TRANSMITTER_DELAY and RECEIVER_DELAY.
Test strategy	
Notes	

TP ID	TP/SS/MAC/ARQ/SET/TI-H001
IEEE 802.16 Reference	clause 11.13.18.4
PICS Item	
Initial Condition	The IUT is operational. A BS-Initiated DSA-REQ to setup an ARQ service flow contains ARQ_BLOCK_LIFETIME set to zero. The DSA transaction is successful.
Expected Behaviour	Check that: The IUT considers ARQ_BLOCK_LIFETIME as infinite.
Test strategy	
Notes	

TP ID	TP/SS/MAC/ARQ/SET/TI-H002
IEEE 802.16 Reference	clause 11.13.18.5
PICS Item	
Initial Condition	The IUT is operational. A BS-Initiated DSA-REQ to setup an ARQ service flow contains ARQ_SYNC_LOSS_TIMEOUT set to zero. The DSA transaction is successful.
Expected Behaviour	Check that: The IUT considers ARQ_SYNC_LOSS_TIMEOUT as infinite.
Test strategy	
Notes	

TP ID	TP/SS/MAC/ARQ/SET/TI-H003
IEEE 802.16 Reference	clause 11.13.18.5
PICS Item	
Initial Condition	The IUT is operational. An SS-Initiated DSA-REQ to setup an ARQ service flow contains ARQ_SYNC_LOSS_TIMEOUT set to a non-zero value.
Expected Behaviour	Check that: On receiving a DSA-RSP setting ARQ_SYNC_LOSS_TIMEOUT to zero and when the transaction is successful, the IUT considers ARQ_SYNC_LOSS_TIMEOUT as infinite.
Test strategy	
Notes	

TP ID	TP/SS/MAC/ARQ/SET/TI-H004
IEEE 802.16 Reference	clause 11.13.18.7
PICS Item	
Initial Condition	The IUT is operational. A BS-Initiated DSA-REQ to setup an ARQ service flow contains ARQ_RX_PURGE_TIMEOUT set to zero. The DSA transaction is successful.
Expected Behaviour	Check that: The IUT considers ARQ_RX_PURGE_TIMEOUT as infinite.
Test strategy	
Notes	

5.3.9.5.2   Reset (RE)

TP ID	TP/SS/MAC/ARQ/RE/BV-H000
IEEE 802.16 Reference	clause 6.3.4.6.2 Figure "ARQ Reset message dialog - transmitter initiated"
PICS Item	
Initial Condition	IUT is operating on an ARQ-enabled DL service flow.
Expected Behaviour	Check that: On receiving an ARQ Reset (Request, type 0x0), the IUT resets ARQ_RX_WINDOW_START to zero and transmitsARQ Reset (Responder Ack, type 0x1).
Test strategy	
Notes	

TP ID	TP/SS/MAC/ARQ/RE/BV-H001
IEEE 802.16 Reference	clause 6.3.4.6.2 Figure "ARQ Reset message dialog - transmitter initiated"
PICS Item	
Initial Condition	IUT is operating on an ARQ-enabled DL service flow. A transmitter-initiated ARQ Reset transaction is successful.
Expected Behaviour	Check that: On receiving new ARQ blocks starting with BSN = zero, the IUT acknowledges receiving the ARQ blocks.
Test strategy	
Notes	

TP ID	TP/SS/MAC/ARQ/RE/BV-H100
IEEE 802.16 Reference	clause 6.3.4.6.2 Figure "ARQ Reset message dialog - receiver initiated"
PICS Item	
Initial Condition	IUT is operating on an ARQ-enabled UL service flow. ARQ data blocks are being transferred.
Expected Behaviour	Check that: On receiving an ARQ Reset (Request, type 0x0), the IUT stops transmitting ARQ data blocks and transmits an ARQ Reset (Responder Ack, type 0x1).
Test strategy	
Notes	

TP ID	TP/SS/MAC/ARQ/RE/BV-H101
IEEE 802.16 Reference	clause 6.3.4.6.2 Figure "ARQ Reset message dialog - receiver initiated"
PICS Item	
Initial Condition	IUT is operating on an ARQ-enabled UL service flow. The IUT has received an ARQ Reset(Request, type 0x0), transmitted an ARQ Reset (Responder Ack, type 0x1), and stopped transmitting ARQ data blocks.
Expected Behaviour	Check that: On receiving a valid ARQ Reset (Confirmation, type 0x02), the IUT begins transmitting ARQ data blocks with the first block having BSN=0.
Test strategy	
Notes	

TP ID	TP/SS/MAC/ARQ/RE/BV-H102
IEEE 802.16 Reference	clause 6.3.4.6.2 Figure "ARQ Reset message dialog - receiver initiated"
PICS Item	
Initial Condition	IUT is operating on an ARQ-enabled DL service flow. The IUT has started ARQ_SYNC_LOSS_TIMEOUT for block BSN_{n+1} . On expiry of ARQ_SYNC_LOSS_TIMEOUT for block BSN_{n+1} without having received this block, the IUT transmitted an ARQ Reset (Request, type 0x0).
Expected Behaviour	Check that: On receiving an ARQ Reset (Responder Ack, type 0x1), the IUT transmits an ARQ Reset (Confirmation, type 0x02).
Test strategy	
Notes	

TP ID	TP/SS/MAC/ARQ/RE/BV-H103
IEEE 802.16 Reference	clause 6.3.4.6.2 Figure "ARQ Reset message dialog - receiver initiated"
PICS Item	
Initial Condition	IUT is operating on an ARQ-enabled DL service flow that has just been reset with a complete ARQ Reset transaction.
Expected Behaviour	Check that: On receiving ARQ data blocks starting with BSN = zero, the IUT acknowledges these data blocks.
Test strategy	
Notes	

TP ID	TP/SS/MAC/ARQ/RE/TI-H000
IEEE 802.16 Reference	clause 6.3.4.6.2 Figure "ARQ Reset message dialog - transmitter initiated"
PICS Item	
Initial Condition	IUT is operating on an ARQ-enabled UL service flow and transmitting blocks. It has started ARQ_SYNC_LOSS_TIMEOUT for BSN_{n+1}.
Expected Behaviour	Check that: After repeated transmissions of the block BSN_{n+1} and after expiry of ARQ_SYNC_LOSS_TIMEOUT without receiving an ACK for block BSN_{n+1}, the IUT sends an ARQ Reset (Request, type 0x0) and stops transmitting data on the connection.
Test strategy	
Notes	

TP ID	TP/SS/MAC/ARQ/RE/TI-H001
IEEE 802.16 Reference	clause 6.3.4.6.2 Figure "ARQ Reset message dialog - transmitter initiated"
PICS Item	
Initial Condition	IUT is operating on an ARQ-enabled UL service flow. It has transmitted an ARQ Reset(Request, type 0x0) and stopped transmitting data on the connection.
Expected Behaviour	Check that: On receiving an ARQ Reset(Responder Ack, type 0x1), the IUT resumes transmitting ARQ blocks with the first BSN set to zero.
Test strategy	
Notes	

TP ID	TP/SS/MAC/ARQ/RE/TI-H002
IEEE 802.16 Reference	clause 6.3.4.6.2 Figure "ARQ Reset message dialog - transmitter initiated"
PICS Item	
Initial Condition	IUT is operating on an ARQ-enabled UL service flow. It has transmitted an ARQ Reset (Request, type 0x0), stopped transmitting data on the connection, and started T22.
Expected Behaviour	Check that: On expiry of T22 without receiving an ARQ Reset (type 0x1 or 0x2), the IUT retransmits the ARQ Reset (Request, type 0x0).
Test strategy	
Notes	Data transmission is already stopped at the time of expected behaviour.

TP ID	TP/SS/MAC/ARQ/RE/TI-H003
IEEE 802.16 Reference	clause 6.3.4.6.2 Figure "ARQ Reset message dialog - transmitter initiated"
PICS Item	
Initial Condition	IUT is operating on an ARQ-enabled UL service flow. It has transmitted an ARQ Reset (Request, type 0x0), stopped transmitting data on the connection, and started T22. On expiry of T22 without receiving an ARQ Reset (type 0x1 or 0x2), the IUT retransmitted the ARQ Reset (Request, type 0x0) and restarted T22.
Expected Behaviour	Check that: After a given number of retries without receiving an ARQ Reset (type 0x1 or 0x2), the IUT re-initializes the MAC layer.
Test strategy	
Notes	

TP ID	TP/SS/MAC/ARQ/RE/TI-H100
IEEE 802.16 Reference	clause 6.3.4.6.2 Figure "ARQ Reset message dialog - receiver initiated"
PICS Item	
Initial Condition	IUT is operating on an ARQ-enabled UL service flow. The IUT has received an ARQ Reset (Request, type 0x0), transmitted an ARQ Reset (Responder Ack, type 0x1), stopped transmitting ARQ data blocks, and started T22.
Expected Behaviour	Check that: On expiry of T22 without having received an ARQ Reset (Confirmation, type 0x02), the IUT retransmits the ARQ Reset (Responder Ack, type 0x1).
Test strategy	
Notes	

TP ID	TP/SS/MAC/ARQ/RE/TI-H101
IEEE 802.16 Reference	clause 6.3.4.6.2 Figure "ARQ Reset message dialog - receiver initiated"
PICS Item	
Initial Condition	IUT is operating on an ARQ-enabled UL service flow. The IUT has received an ARQ Reset (Request, type 0x0), transmitted an ARQ Reset (Responder Ack, type 0x1), stopped transmitting ARQ data blocks, and started T22.
Expected Behaviour	Check that: After a given number of retries without receiving an ARQ Reset (Confirmation type 0x2), the IUT re-initializes the MAC layer.
Test strategy	
Notes	

TP ID	TP/SS/MAC/ARQ/RE/TI-H102
IEEE 802.16 Reference	clause 6.3.4.6.2 Figure "ARQ Reset message dialog - receiver initiated"
PICS Item	
Initial Condition	IUT is operating on an ARQ-enabled DL service flow. The IUT has started ARQ_SYNC_LOSS_TIMEOUT for block BSN_{n+1} .
Expected Behaviour	Check that: On expiry of ARQ_SYNC_LOSS_TIMEOUT for block BSN_{n+1} without receiving this block, the IUT transmits an ARQ Reset (Request, type 0x0).
Test strategy	
Notes	

TP ID	TP/SS/MAC/ARQ/RE/TI-H103
IEEE 802.16 Reference	clause 6.3.4.6.2 Figure "ARQ Reset message dialog - receiver initiated"
PICS Item	
Initial Condition	IUT is operating on an ARQ-enabled DL service flow and has just transmitted an ARQ Reset (Request, type 0x0) and started T22.
Expected Behaviour	Check that: On expiry of T22 without having received an ARQ Reset (Responder Ack, type 0x1), the IUT retransmits the ARQ Reset (Request, type 0x0).
Test strategy	
Notes	

TP ID	TP/SS/MAC/ARQ/RE/TI-H104
IEEE 802.16 Reference	clause 6.3.4.6.2 Figure "ARQ Reset message dialog - receiver initiated"
PICS Item	
Initial Condition	IUT is operating on an ARQ-enabled DL service flow and has just transmitted an ARQ Reset (Request, type 0x0) and started T22.
Expected Behaviour	Check that: After a given number of retries without receiving an ARQ Reset (Responder Ack, type 0x1), the IUT re-initializes the MAC layer.
Test strategy	
Notes	

5.3.9.5.3 Receive Data (RXD)

TP ID	TP/SS/MAC/ARQ/RXD/BV-H000
IEEE 802.16 Reference	clauses 6.3.4 and 6.3.3.4
PICS Item	
Initial Condition	IUT is operating on an ARQ-enabled DL connection.

Expected Behaviour	Check that: On receiving ARQ data blocks, the IUT transmits ARQ feedback information:
	    either in an unfragmented ARQ Feedback standalone message; or
	    in the first piggy-backed packed PDU sub header where bit #4 in the Type field of the generic MAC header is set to 1 and the sub header FC bits are set to 00b.

Test strategy	
Notes	

TP ID	TP/SS/MAC/ARQ/RXD/BV-H001
IEEE 802.16 Reference	clause 6.3.4.6.2
PICS Item	
Initial Condition	The IUT is a receiver on an ARQ-enabled DL connection.
Expected Behaviour	Check that: When the receiving data blocks with block BSN_n missing, the IUT ACKs the received blocks and NACKs the missing block.
Test strategy	
Notes	

TP ID	TP/SS/MAC/ARQ/RXD/BV-H002
IEEE 802.16 Reference	clause 6.3.4.6.3 Figure "ARQ block reception"
PICS Item	
Initial Condition	The IUT is a receiver on an ARQ-enabled DL connection.
Expected Behaviour	Check that: On receiving an ARQ data block that is in the ARQ window that has not been acknowledged, the IUT acknowledges the ARQ data block.
Test strategy	
Notes	

TP ID	TP/SS/MAC/ARQ/RXD/BV-H003
IEEE 802.16 Reference	clause 6.3.4.6.3 Figure "ARQ block reception"
PICS Item	
Initial Condition	The IUT is a receiver on an ARQ-enabled DL connection.
Expected Behaviour	Check that: On receiving an ARQ data block that is in the ARQ window and has already been acknowledged, the IUT again acknowledges the ARQ data block.
Test strategy	
Notes	

TP ID	TP/SS/MAC/ARQ/RXD/BV-H004
IEEE 802.16 Reference	clause 6.3.4.6.3 Figure "ARQ block reception"
PICS Item	
Initial Condition	The IUT is a receiver on an ARQ-enabled DL connection.
Expected Behaviour	Check that: On receiving an ARQ data block that is not in the ARQ window, the IUT discards the block and does not send an ACK or a NACK for the block.
Test strategy	
Notes	

TP ID	TP/SS/MAC/ARQ/RXD/BV-H005
IEEE 802.16 Reference	clause 6.3.4.6.2
PICS Item	
Initial Condition	The IUT is a receiver on an ARQ-enabled DL connection and is receiving ARQ data blocks.
Expected Behaviour	Check that: On receiving an ARQ Discard message to skip all blocks up to the BSN value in the message, the IUT acknowledges skipping of all the blocks up to the BSN value in an ARQ Feedback IE.
Test strategy	
Notes	

TP ID	TP/SS/MAC/ARQ/RXD/BV-H006
IEEE 802.16 Reference	clause 6.3.4.6.2
PICS Item	
Initial Condition	The IUT is a receiver on an ARQ-enabled DL connection and was receiving ARQ data blocks. It then received an ARQ Discard message to skip all blocks up to the BSN value in the message. The IUT acknowledged skipping of all the blocks up to the BSN value in an ARQ Feedback IE.
Expected Behaviour	Check that: On receiving ARQ data blocks starting at BSN+2, the IUT acknowledges the blocks starting with BSN+2 and NACKs the block BSN+1.
Test strategy	
Notes	

TP ID	TP/SS/MAC/ARQ/RXD/BV-H007
IEEE 802.16 Reference	clause 6.3.4.6.3
PICS Item	
Initial Condition	The IUT is a receiver on an ARQ-enabled DL connection. ARQ_DELIVER_IN_ORDER is not enabled.
Expected Behaviour	Check that: On receiving an incomplete set of blocks for a MAC SDU followed by a complete set of blocks for another MAC SDU, the IUT passes to the convergence sublayer the complete SDU immediately upon receiving that SDU's last block.
Test strategy	Requires an Upper Tester.
Notes	

TP ID	TP/SS/MAC/ARQ/RXD/BV-H008
IEEE 802.16 Reference	clause 6.3.4.6.3
PICS Item	
Initial Condition	The IUT is a receiver on an ARQ-enabled DL connection. ARQ_DELIVER_IN_ORDER is enabled.
Expected Behaviour	Check that: On receiving an incomplete set of blocks for a MAC SDU followed by a complete set of blocks for another MAC SDU, the IUT passes to the convergence sublayer the complete SDU only after the incomplete set of blocks have been purged after ARQ_RX_PURGE_TIMEOUT.
Test strategy	Requires an Upper Tester.
Notes	

TP ID	TP/SS/MAC/ARQ/RXD/BV-H009
IEEE 802.16 Reference	clause 6.3.4.6.3
PICS Item	
Initial Condition	The IUT is a receiver on an ARQ-enabled DL connection. The IUT has received ARQ data blocks with gaps in BSNs indicating that some data blocks are missing. The IUT NACKs the missing data blocks.
Expected Behaviour	Check that: On receiving an ARQ Discard message for the missing data blocks, the IUT transmits an ARQ Feedback IE whose BSN field is greater than (modulus 2^{11}) than the BSN of the last missing data block.
Test strategy	
Notes	

TP ID	**TP/SS/MAC/ARQ/RXD/BV-H010**
IEEE 802.16 Reference	clause 6.3.4.6.3
PICS Item	
Initial Condition	The IUT is a receiver on an ARQ-enabled DL connection. The IUT has received a set of contiguous ARQ data blocks, then a gap in data blocks, then another set of contiguous ARQ data blocks.
Expected Behaviour	Check that: The IUT acknowledges the first contiguous set with a cumulative acknowledgement and acknowledges the second set with either a specific block acknowledgement, a cumulative acknowledgement, or a combination of both. The acknowledgements are sent in the order of the ARQ block numbers as they were received.
Test strategy	
Notes	

TP ID	**TP/SS/MAC/ARQ/RXD/TI-H000**
IEEE 802.16 Reference	clause 6.3.4.6.2
PICS Item	
Initial Condition	The IUT is a receiver on an ARQ-enabled DL connection. It has started ARQ_BLOCK_LIFETIME for the block BSN_n that it is missing and has been transmitting NACKs for that missing block.
Expected Behaviour	Check that: After ARQ_BLOCK_LIFETIME has expired without having received block BSN_n, each time it receives an ARQ DISCARD for the block BSN_n the IUT transmits an ACK for the missing block BSN_n.
Test strategy	
Notes	

TP ID	**TP/SS/MAC/ARQ/RXD/TI-H001**
IEEE 802.16 Reference	clause 6.3.4.6.3
PICS Item	
Initial Condition	The IUT is a receiver on an ARQ-enabled DL connection. The IUT has received an ARQ data block for BSN=m. In a sequence of data blocks, the IUT has not received a block for BSN=n. The IUT has started ARQ_RX_PURGE_TIMEOUT for block BSN=m.
Expected Behaviour	Check that: On ARQ_RX_PURGE_TIMEOUT expiry without having received block BSN=n, the next ARQ Feedback IE transmitted by the IUT contains n in the BSN field.
Test strategy	
Notes	

5.3.9.5.4   Transmit Data (TXD)

TP ID	**TP/SS/MAC/ARQ/TXD/BV-H000**
IEEE 802.16 Reference	clause 6.3.4 Table "Type encodings"
PICS Item	
Initial Condition	The IUT is a transmitter on an ARQ-enabled UL connection. UL ARQ-enabled data is in process.
Expected Behaviour	Check that: When the IUT receives ARQ feedback information either in an ARQ Feedback standalone message or in the ARQ Feedback Payload in the first sub header of a packed PDU, the IUT correctly processes the ARQ feedback information.
Test strategy	
Notes	

TP ID	TP/SS/MAC/ARQ/TXD/BV-H001
IEEE 802.16 Reference	clause 6.3.3.4.3
PICS Item	
Initial Condition	The IUT is operational. An UL ARQ-enabled data flow is established.
Expected Behaviour	Check that: On receiving a fragmented and packed MAC PDU containing ARQ Feedback Payload, the IUT ignores the FSN/BSN in the Packing sub header and processes the ARQ Feedback Payload.
Test strategy	
Notes	

TP ID	TP/SS/MAC/ARQ/TXD/BV-H002
IEEE 802.16 Reference	clause 6.3.3.4.3
PICS Item	
Initial Condition	The IUT is operational. An UL non-ARQ data flow is established on the connection. A different connection for an UL ARQ-enabled data flow is also established.
Expected Behaviour	Check that: On receiving a fragmented and packed MAC PDU on the non-ARQ connection containing ARQ Feedback Payload for ARQ-enabled connection, the IUT ignores the FSN/BSN in the Packing sub header and processes the ARQ Feedback Payload for the ARQ connection.
Test strategy	
Notes	

TP ID	TP/SS/MAC/ARQ/TXD/BV-H003
IEEE 802.16 Reference	clause 6.3.4.1
PICS Item	
Initial Condition	The IUT is a transmitter on an ARQ-enabled UL connection. UL ARQ-enabled data is in process. Fragmentation is ON.
Expected Behaviour	Check that: The IUT fragments the SDU only on ARQ block boundaries.
Test strategy	
Notes	

TP ID	TP/SS/MAC/ARQ/TXD/BV-H004
IEEE 802.16 Reference	clause 6.3.4.1
PICS Item	
Initial Condition	The IUT is a transmitter on an ARQ-enabled UL connection. UL ARQ-enabled data is in process. Packing is OFF.
Expected Behaviour	Check that: The IUT transmits the ARQ blocks with contiguous BSNs normalized by the following: bsn' = (bsn - BSN_base) mod ARQ_BSN_MODULUS.
Test strategy	
Notes	

TP ID	TP/SS/MAC/ARQ/TXD/BV-H005
IEEE 802.16 Reference	clause 6.3.4.1
PICS Item	
Initial Condition	The IUT is a transmitter on an ARQ-enabled UL connection. UL ARQ-enabled data is in process. Packing is ON.
Expected Behaviour	Check that: The IUT transmits the sequence of blocks immediately between the MAC sub headers and the sequence of blocks after the last packing sub header with contiguous sequence numbers.
Test strategy	
Notes	

TP ID	TP/SS/MAC/ARQ/TXD/BV-H006
IEEE 802.16 Reference	clause 6.3.4.1
PICS Item	
Initial Condition	The IUT is a transmitter on an ARQ-enabled UL connection. UL ARQ-enabled data is in process. Packing or fragmentation is ON.
Expected Behaviour	Check that: The IUT places into the sub header's BSN field the sequence number of the first ARQ block in the sequence of blocks following the sub header.
Test strategy	
Notes	

TP ID	TP/SS/MAC/ARQ/TXD/BV-H100
IEEE 802.16 Reference	clause 6.3.4.6.2
PICS Item	
Initial Condition	The IUT is a transmitter on an ARQ-enabled UL connection. UL ARQ-enabled data is in process.
Expected Behaviour	Check that: On receiving a NACK in a Selective ACK map for an ARQ block, the IUT retransmits the NACK block followed by other blocks not as yet sent.
Test strategy	
Notes	

TP ID	TP/SS/MAC/ARQ/TXD/BV-H101
IEEE 802.16 Reference	clause 6.3.4.6.2
PICS Item	
Initial Condition	The IUT is a transmitter on an ARQ-enabled UL connection. UL ARQ-enabled data is in process.
Expected Behaviour	Check that: On receiving NACKs in a Selective ACK map for several ARQ blocks, the IUT first retransmits the NACK blocks in numerical BSN order followed by other blocks not yet sent.
Test strategy	
Notes	

TP ID	TP/SS/MAC/ARQ/TXD/BV-H102
IEEE 802.16 Reference	clause 6.3.4.6.2
PICS Item	
Initial Condition	The IUT is a transmitter on an ARQ-enabled UL connection. UL ARQ-enabled data is in process.
Expected Behaviour	Check that: When not receiving ACKs or NACKs for transmitted ARQ blocks, the IUT does not retransmit these ARQ blocks.
Test strategy	
Notes	

TP ID	TP/SS/MAC/ARQ/TXD/BV-H103
IEEE 802.16 Reference	clause 6.3.4.6.2
PICS Item	
Initial Condition	The IUT is a transmitter on an ARQ-enabled UL connection. UL ARQ-enabled data is in process.
Expected Behaviour	Check that: On receiving a block ACK for an invalid BSN, the IUT ignores the block ACK.
Test strategy	
Notes	

TP ID	TP/SS/MAC/ARQ/TXD/BV-H104
IEEE 802.16 Reference	clause 6.3.4.6.2
PICS Item	
Initial Condition	The IUT is a transmitter on an ARQ-enabled UL connection. UL ARQ-enabled data is in process.
Expected Behaviour	Check that: On receiving a cumulative ACK for a subset of transmitted blocks, the IUT does not retransmit any of the blocks in the cumulative ACK and retransmits the un-ACKed part of the set.
Test strategy	
Notes	

TP ID	TP/SS/MAC/ARQ/TXD/BV-H105
IEEE 802.16 Reference	clause 6.3.4.6.2
PICS Item	
Initial Condition	The IUT is a transmitter on an ARQ-enabled UL connection. UL ARQ-enabled data is in process.
Expected Behaviour	Check that: On receiving a Selective ACK with gaps (indicating a NACK for some of the blocks), the IUT does not retransmit any of the blocks selectively ACKd and retransmits the blocks not selectively ACKd.
Test strategy	
Notes	

TP ID	TP/SS/MAC/ARQ/TXD/BV-H106
IEEE 802.16 Reference	clause 6.3.4.6.2
PICS Item	
Initial Condition	The IUT is a transmitter on an ARQ-enabled UL connection. UL ARQ-enabled data is in process. The IUT has received a Selective ACK except for blocks BSN=i and BSN=k where i < k. The IUT then retransmits blocks i and k and transmits other additional blocks.
Expected Behaviour	Check that: On receiving a Selective ACK for BSN = k, the IUT retransmits the block BSN = i and transmits other additional blocks.
Test strategy	
Notes	

TP ID	TP/SS/MAC/ARQ/TXD/BV-H107
IEEE 802.16 Reference	clause 6.3.4.6.2
PICS Item	
Initial Condition	The IUT is a transmitter on an ARQ-enabled UL connection. UL ARQ-enabled data is in process.
Expected Behaviour	Check that: On receiving an ACK for all blocks up to BSN=k except for block BSN=i where i<, the IUT retransmits block BSN=i and additional blocks whose BSN > k.
Test strategy	
Notes	

TP ID	TP/SS/MAC/ARQ/TXD/TI-H000
IEEE 802.16 Reference	clause 6.3.4.6.2
PICS Item	
Initial Condition	The IUT is a transmitter on an ARQ-enabled UL connection. UL ARQ-enabled data is in process. The IUT has started ARQ_RETRY_TIMEOUT when sending block BSN=n.
Expected Behaviour	Check that: After expiry of ARQ_RETRY_TIMEOUT and on not receiving an ACK for block BSN=n, the IUT retransmits block BSN=n.
Test strategy	
Notes	

TP ID	TP/SS/MAC/ARQ/TXD/TI-H001
IEEE 802.16 Reference	clause 6.3.4.6.2
PICS Item	
Initial Condition	The IUT is a transmitter on an ARQ-enabled UL connection. UL ARQ-enabled data is in process. The IUT has retransmitted block BSN=n after ARQ_RETRY_TIMEOUT expiry and restarted ARQ_RETRY_TIMEOUT.
Expected Behaviour	Check that: On the next expiry of ARQ_RETRY_TIMEOUT without receiving an ACK or NACK for block BSN=n, the IUT retransmits block BSN=n.
Test strategy	
Notes	

TP ID	TP/SS/MAC/ARQ/TXD/TI-H002
IEEE 802.16 Reference	clauses 6.3.4.3.4 and 6.3.4.6.2
PICS Item	
Initial Condition	The IUT is a transmitter on an ARQ-enabled UL connection. UL ARQ-enabled data is in process. The IUT has transmitted block BSN=n and started ARQ_BLOCK_LIFETIME.
Expected Behaviour	Check that: On expiry of ARQ_BLOCK_LIFETIME without receiving an ACK or NACK for block BSN=n and later, the IUT transmits an ARQ Discard message at a time between ARQ_BLOCK_LIFETIME expiry and ARQ_RX_PURGE_TIMEOUT + ARQ_RETRY_TIMEOUT expiry.
Test strategy	
Notes	

TP ID	TP/SS/MAC/ARQ/TXD/TI-H003
IEEE 802.16 Reference	clause 6.3.4.6.2
PICS Item	
Initial Condition	The IUT is a transmitter on an ARQ-enabled UL connection. UL ARQ-enabled data is in process. The IUT has transmitted block BSN=n. No ACK or NACK for the block BSN=n has been received. The IUT has transmitted an ARQ Discard and started ARQ_RETRY_TIMEOUT.
Expected Behaviour	Check that: On expiry of ARQ_RETRY_TIMEOUT without receiving an ACK for the discarded block BSN=n, the IUT retransmits the ARQ Discard.
Test strategy	
Notes	

TP ID	TP/SS/MAC/ARQ/TXD/TI-H004
IEEE 802.16 Reference	clause 6.3.4.6.2
PICS Item	
Initial Condition	The IUT is a transmitter on an ARQ-enabled UL connection. UL ARQ-enabled data is in process. The IUT has transmitted block BSN=n. No ACK or NACK for the block BSN=n has been received. The IUT has transmitted an ARQ Discard and started ARQ_RETRY_TIMEOUT.
Expected Behaviour	Check that: Each time ARQ_RETRY_TIMEOUT expires without receiving an ACK for the discarded block BSN=n, the IUT retransmits the ARQ Discard and restarts ARQ_RETRY_TIMEOUT until receiving an ACK for the discarded BSN.
Test strategy	
Notes	

5.3.10   Packet Convergence Sublayer (PCS)

5.3.10.1   Packet CS Usage (PCU)

TP ID	TP/SS/PCS/PCU/BV-H000
IEEE 802.16 Reference	clauses 5.2, 5.2.1 and 5.2.2
PICS Item	
Initial Condition	IUT is operating. A DSA transaction for DL Ethernet CS packets is successful. Payload Header Suppression is OFF.
Expected Behaviour	Check that: The IUT passes a valid MAC SDU to the CS Ethernet SAP.
Test strategy	
Notes	Test will require a PCO on the CS Ethernet SAP.

,	TP/SS/PCS/PCU/BV-H001
IEEE 802.16 Reference	clauses 5.2, 5.2.1 and 5.2.2
PICS Item	
Initial Condition	IUT is operating. A DSA transaction for DL IPv4 CS packets is successful. Payload Header Suppression is OFF.
Expected Behaviour	Check that: The IUT passes a valid MAC SDU to the CS IPv4 SAP.
Test strategy	
Notes	Test will require a PCO on the CS IPv4 SAP.

TP ID	TP/SS/PCS/PCU/BV-H002
IEEE 802.16 Reference	clauses 5.2, 5.2.1 and 5.2.2
PICS Item	
Initial Condition	IUT is operating. A DSA transaction for DL IPv4/Ethernet CS packets is successful. Payload Header Suppression is OFF.
Expected Behaviour	Check that: The IUT passes a valid MAC SDU to the CS IPv4/Ethernet SAP.
Test strategy	
Notes	Test will require a PCO on the CS IPv4/Ethernet SAP.

TP ID	TP/SS/PCS/PCU/BV-H003
IEEE 802.16 Reference	clauses 5.2, 5.2.1 and 5.2.2
PICS Item	
Initial Condition	IUT is operating. A DSA transaction for DL IPv6 CS packets is successful. Payload Header Suppression is OFF.
Expected Behaviour	Check that: The IUT passes a valid MAC SDU to the CS IPv6 SAP.
Test strategy	
Notes	Test will require a PCO on the CS IPv6 SAP.

TP ID	TP/SS/PCS/PCU/BV-H004
IEEE 802.16 Reference	clauses 5.2, 5.2.1 and 5.2.2
PICS Item	
Initial Condition	IUT is operating. A DSA transaction for DL IPv6/Ethernet CS packets is successful. Payload Header Suppression is OFF.
Expected Behaviour	Check that: The IUT passes a valid MAC SDU to the CS IPv6/Ethernet SAP.
Test strategy	
Notes	Test will require a PCO on the CS IPv6/Ethernet SAP.

TP ID	TP/SS/PCS/PCU/BV-H005
IEEE 802.16 Reference	clauses 5.2, 5.2.1 and 5.2.2
PICS Item	
Initial Condition	IUT is operating. A DSA transaction for DL Ethernet/VLAN CS packets is successful. Payload Header Suppression is OFF.
Expected Behaviour	Check that: The IUT passes a valid MAC SDU to the CS Ethernet/VLAN SAP.
Test strategy	
Notes	Test will require a PCO on the CS Ethernet/VLAN SAP.

TP ID	TP/SS/PCS/PCU/BI-H000
IEEE 802.16 Reference	clause 5.2.2, paragraph 4
PICS Item	
Initial Condition	IUT is operating. A DSA transaction is successful. Payload Header Suppression is OFF. Packets are being sent to the CS.
Expected Behaviour	Check that: On receiving CS packets that with parameters that do not match a known classifier, the IUT discards the packet.
Test strategy	
Notes	TP may not be testable - There is no remotely observable behaviour to follow the TP requirement.

5.3.10.2   Classifier DSx Signaling (CDS)

TP ID	TP/SS/PCS/CDS/BV-H000
IEEE 802.16 Reference	clauses 5.2.2 and 11.13.19.3.4
PICS Item	
Initial Condition	IUT is operational.
Expected Behaviour	Check that: On receiving a valid DSA-REQ containing a packet classifier, the IUT sends a DSA-RSP.
Test strategy	
Notes	

TP ID	TP/SS/PCS/CDS/BV-H100
IEEE 802.16 Reference	clauses 5.2.2 and 11.13.19.3.2
PICS Item	
Initial Condition	IUT is operational and an UL service flow is established.
Expected Behaviour	Check that: On receiving a valid DSC-REQ containing a DSC Add Classifier parameter for the service flow, the IUT sends a DSC-RSP.
Test strategy	
Notes	

TP ID	TP/SS/PCS/CDS/BV-H101
IEEE 802.16 Reference	clauses 5.2.2 and 11.13.19.3.2
PICS Item	
Initial Condition	IUT is operational and an UL service flow is established. A DSC transaction for the service flow to add a classifier is successful.
Expected Behaviour	Check that: The IUT classifies packets correctly according to the existing and added classifiers.
Test strategy	
Notes	

TP ID	TP/SS/PCS/CDS/BV-H200
IEEE 802.16 Reference	clauses 5.2.2 and 11.13.19.3.2
PICS Item	
Initial Condition	IUT is operational and an UL service flow is established.
Expected Behaviour	Check that: On receiving a valid DSC-REQ containing a DSC Replace Classifier parameter for the service flow, the IUT sends a DSC-RSP.
Test strategy	
Notes	

TP ID	TP/SS/PCS/CDS/BV-H201
IEEE 802.16 Reference	clauses 5.2.2 and 11.13.19.3.2
PICS Item	
Initial Condition	IUT is operational and an UL service flow is established. A DSC transaction for the service flow to replace a classifier is successful.
Expected Behaviour	Check that: The IUT classifies packets correctly according to the existing classifiers that include the replacing classifier.
Test strategy	
Notes	

TP ID	TP/SS/PCS/CDS/BV-H300
IEEE 802.16 Reference	clauses 5.2.2 and 11.13.19.3.2
PICS Item	
Initial Condition	IUT is operational and an UL service flow is established.
Expected Behaviour	Check that: On receiving a valid DSC-REQ containing a DSC Delete Classifier parameter for the service flow, the IUT sends a DSC-RSP.
Test strategy	
Notes	

TP ID	TP/SS/PCS/CDS/BV-H301
IEEE 802.16 Reference	
PICS Item	
Initial Condition	IUT is operational and an UL service flow is established. A DSC transaction for the service flow to delete a classifier is successful.
Expected Behaviour	Check that: The IUT classifies packets correctly according to the remaining classifiers.
Test strategy	
Notes	It is not clear what the behaviour is if the last classifier was deleted.

5.3.10.3   Classification (CLS)

5.3.10.3.1   IPv4 and IPv6 (IP)

TP ID	TP/SS/PCS/CLS/IP/BV-H000
IEEE 802.16 Reference	clause 5.2.2, paragraph 3
PICS Item	
Initial Condition	IUT is operational and two UL IP CS service flows are established having different CIDs. Packet classifiers are defined for both connections.
Expected Behaviour	Check that: When the classifiers for the two connections do not overlap, the IUT transmits IP CS SDUs matching the classifier for the first connection on the first connection and transmits IP CS SDUs matching the classifier for the second connection on the second connection.
Test strategy	
Notes	IP service flows can either be IPv4 or IPv6.

TP ID	TP/SS/PCS/CLS/IP/BV-H001
IEEE 802.16 Reference	clauses 5.2.2, paragraph 3 and 11.13.19.3.4.2
PICS Item	
Initial Condition	IUT is operational and two UL IP CS service flows are established having different CIDs. Packet classifiers are defined for both connections.
Expected Behaviour	Check that: When the classifiers for the two connections overlap on the IP Type of Service/DSCP, the IUT transmits CS SDUs matching the common IP Type of Service/DSCP on the connection having the higher classifier priority.
Test strategy	
Notes	IP service flows can either be IPv4 or IPv6.

TP ID	TP/SS/PCS/CLS/IP/BV-H002
IEEE 802.16 Reference	clauses 5.2.2, paragraph 3 and 11.13.19.3.4.3
PICS Item	
Initial Condition	IUT is operational and two UL IP CS service flows are established having different CIDs. Packet classifiers are defined for both connections.
Expected Behaviour	Check that: When the classifiers for the two connections overlap on the IP Protocol, the IUT transmits CS SDUs matching the common IP Protocol on the connection having the higher classifier priority.
Test strategy	
Notes	IP service flows can either be IPv4 or IPv6.

TP ID	TP/SS/PCS/CLS/IP/BV-H003
IEEE 802.16 Reference	clauses 5.2.2, paragraph 3 and 11.13.19.3.4.4
PICS Item	
Initial Condition	IUT is operational and two UL IP CS service flows are established having different CIDs. Packet classifiers are defined for both connections.
Expected Behaviour	Check that: When the classifiers for the two connections overlap on the IP Masked Source Address, the IUT transmits CS SDUs matching the common IP Masked Source Address on the connection having the higher classifier priority.
Test strategy	
Notes	IP service flows can either be IPv4 or IPv6.

TP ID	TP/SS/PCS/CLS/IP/BV-H004
IEEE 802.16 Reference	clauses 5.2.2, paragraph 3 and 11.13.19.3.4.5
PICS Item	
Initial Condition	IUT is operational and two UL IP CS service flows are established having different CIDs. Packet classifiers are defined for both connections.
Expected Behaviour	Check that: When the classifiers for the two connections overlap on the IP Destination Address, the IUT transmits CS SDUs matching the common IP Destination Address on the connection having the higher classifier priority.
Test strategy	
Notes	IP service flows can either be IPv4 or IPv6.

TP ID	TP/SS/PCS/CLS/IP/BV-H005
IEEE 802.16 Reference	clauses 5.2.2, paragraph 3 and 11.13.19.3.4.6
PICS Item	
Initial Condition	IUT is operational and two UL IP CS service flows are established having different CIDs. Packet classifiers are defined for both connections.
Expected Behaviour	Check that: When the classifiers for the two connections overlap on the IP Protocol Source Port, the IUT transmits CS SDUs matching the common IP Protocol Source Port on the connection having the higher classifier priority.
Test strategy	
Notes	IP service flows can either be IPv4 or IPv6.

TP ID	TP/SS/PCS/CLS/IP/BV-H006
IEEE 802.16 Reference	clauses 5.2.2, paragraph 3 and 11.13.19.3.4.7
PICS Item	
Initial Condition	IUT is operational and two UL IP CS service flows are established having different CIDs. Packet classifiers are defined for both connections.
Expected Behaviour	Check that: When the classifiers for the two connections overlap on the IP Protocol Destination Port, the IUT transmits CS SDUs matching the common IP Protocol Destination Port on the connection having the higher classifier priority.
Test strategy	
Notes	IP service flows can either be IPv4 or IPv6.

TP ID	TP/SS/PCS/CLS/IP/BV-H007
IEEE 802.16 Reference	clauses 5.2.2, paragraph 3 and 11.13.19.3.4.2 to 7
PICS Item	
Initial Condition	IUT is operational and two UL IP CS service flows are established having different CIDs. Packet classifiers are defined for both connections.
Expected Behaviour	Check that: When the classifiers for the two connections overlap on the: - IP Protocol Destination Port; - IP Type of Service/DSCP; - IP Protocol; - IP Masked Source Address; - IP Destination Address; - IP Protocol Source Port; and - IP Protocol Destination Port. the IUT transmits CS SDUs matching the common: - IP Protocol Destination Port; - IP Type of Service/DSCP; - IP Protocol; - IP Masked Source Address; - IP Destination Address; - IP Protocol Source Port; and - IP Protocol Destination Port on the connection having the higher classifier priority.
Test strategy	
Notes	IP service flows can either be IPv4 or IPv6.

5.3.10.3.2   Ethernet (ENET)

TP ID	TP/SS/PCS/CLS/ENET/BV-H000
IEEE 802.16 Reference	clause 5.2.2, paragraph 3
PICS Item	
Initial Condition	IUT is operational and two UL Ethernet CS service flows are established having different CIDs. Packet classifiers are defined for both connections.
Expected Behaviour	Check that: When the classifiers for the two connections do not overlap, the IUT transmits Ethernet CS SDUs matching the classifier for the first connection on the first connection and transmits Ethernet CS SDUs matching the classifier for the second connection on the second connection.
Test strategy	
Notes	

TP ID	TP/SS/PCS/CLS/ENET/BV-H001
IEEE 802.16 Reference	clauses 5.2.2, paragraph 3 and 11.13.19.3.4.8
PICS Item	
Initial Condition	IUT is operational and two UL Ethernet CS service flows are established having different CIDs. Packet classifiers are defined for both connections.
Expected Behaviour	Check that: When the classifiers for the two connections overlap on the Ethernet MAC Destination Address, the IUT transmits CS SDUs matching the common Ethernet MAC Destination Address on the connection having the higher classifier priority.
Test strategy	
Notes	

TP ID	TP/SS/PCS/CLS/ENET/BV-H002
IEEE 802.16 Reference	clauses 5.2.2, paragraph 3 and 11.13.19.3.4.9
PICS Item	
Initial Condition	IUT is operational and two UL Ethernet CS service flows are established having different CIDs. Packet classifiers are defined for both connections.
Expected Behaviour	Check that: When the classifiers for the two connections overlap on the Ethernet MAC Source Address, the IUT transmits CS SDUs matching the common Ethernet MAC Source Address on the connection having the higher classifier priority.
Test strategy	
Notes	

TP ID	TP/SS/PCS/CLS/ENET/BV-H003
IEEE 802.16 Reference	clauses 5.2.2, paragraph 3 and 11.13.19.3.4.10
PICS Item	
Initial Condition	IUT is operational and two UL Ethernet CS service flows are established having different CIDs. Packet classifiers are defined for both connections.
Expected Behaviour	Check that: When the classifiers for the two connections overlap on the Ethertype SAP, the IUT transmits CS SDUs matching the common Ethertype SAP on the connection having the higher classifier priority.
Test strategy	
Notes	

TP ID	TP/SS/PCS/CLS/ENET/BV-H004
	Deleted

TP ID	TP/SS/PCS/CLS/ENET/BV-H005
IEEE 802.16 Reference	clauses 5.2.2, paragraph 3 and 11.13.19.3.4.8-11
PICS Item	
Initial Condition	IUT is operational and two UL Ethernet CS service flows are established having different CIDs. Packet classifiers are defined for both connections.
Expected Behaviour	Check that: When the classifiers for the two connections overlap on the: - Ethernet MAC Destination Address; - Ethernet MAC Source Address; and - Ethertype SAP. the IUT transmits CS SDUs matching the common: - Ethernet MAC Destination Address; - Ethernet MAC Source Address; and - Ethertype SAP. on the connection having the higher classifier priority.
Test strategy	
Notes	

5.3.10.3.3   VLAN (VLAN)

TP ID	TP/SS/PCS/CLS/VLAN/BV-H000
IEEE 802.16 Reference	clause 5.2.2, paragraph 3
PICS Item	
Initial Condition	IUT is operational and two UL VLAN CS service flows are established having different CIDs. Packet classifiers are defined for both connections.
Expected Behaviour	Check that: When the classifiers for the two connections do not overlap, the IUT transmits VLAN CS SDUs matching the classifier for the first connection on the first connection and transmits VLAN CS SDUs matching the classifier for the second connection on the second connection.
Test strategy	
Notes	

TP ID	TP/SS/PCS/CLS/VLAN/BV-H001
IEEE 802.16 Reference	clauses 5.2.2, paragraph 3 and 11.13.19.3.4.12
PICS Item	
Initial Condition	IUT is operational and two UL VLAN CS service flows are established having different CIDs. Packet classifiers are defined for both connections.
Expected Behaviour	Check that: When the classifiers for the two connections overlap on the VLAN ID, the IUT transmits CS SDUs matching the common VLAN ID on the connection having the higher classifier priority.
Test strategy	
Notes	

TP ID	TP/SS/PCS/CLS/VLAN/BV-H002
IEEE 802.16 Reference	clauses 5.2.2, paragraph 3 and 11.13.19.3.4.11
PICS Item	
Initial Condition	IUT is operational and two UL Ethernet CS service flows are established having different CIDs. Packet classifiers are defined for both connections.
Expected Behaviour	Check that: When the classifiers for the two connections overlap on the Ethernet User Priority, the IUT transmits CS SDUs matching the common Ethernet User Priority on the connection having the higher classifier priority.
Test strategy	
Notes	

TP ID	TP/SS/PCS/CLS/VLAN/BV-H003
IEEE 802.16 Reference	clauses 5.2.2, paragraph 3 and 11.13.19.3.4.11
PICS Item	
Initial Condition	IUT is operational and two UL IP over Ethernet CS service flows are established having different CIDs. Packet classifiers are defined for both connections.
Expected Behaviour	Check that: When the classifiers for the two connections overlap on the Ethernet User Priority, the IUT transmits CS SDUs matching the common Ethernet User Priority on the connection having the higher classifier priority.
Test strategy	
Notes	IP service flows can either be IPv4 or IPv6.

5.3.10.3.4 IP over Ethernet (IPoE)

TP ID	TP/SS/PCS/CLS/IPoE/BV-H000
IEEE 802.16 Reference	clause 5.2.2, paragraph 3
PICS Item	
Initial Condition	IUT is operational and two UL IP over Ethernet CS service flows are established having different CIDs. Packet classifiers are defined for both connections.
Expected Behaviour	Check that: When the classifiers for the two connections do not overlap, the IUT transmits IP over Ethernet SDUs matching the classifier for the first connection on the first connection and transmits IP over Ethernet CS SDUs matching the classifier for the second connection on the second connection.
Test strategy	
Notes	IP service flows can either be IPv4 or IPv6.

TP ID	TP/SS/PCS/CLS/IPoE/BV-H001
IEEE 802.16 Reference	clauses 5.2.2, paragraph 3 and 11.13.19.3.4.2
PICS Item	
Initial Condition	IUT is operational and two UL IP over Ethernet CS service flows are established having different CIDs. Packet classifiers are defined for both connections.
Expected Behaviour	Check that: When the classifiers for the two connections overlap on the IP Type of Service/DSCP, the IUT transmits CS SDUs matching the common IP Type of Service/DSCP on the connection having the higher classifier priority.
Test strategy	
Notes	IP service flows can either be IPv4 or IPv6.

TP ID	TP/SS/PCS/CLS/IPoE/BV-H002
IEEE 802.16 Reference	clauses 5.2.2, paragraph 3 and 11.13.19.3.4.3
PICS Item	
Initial Condition	IUT is operational and two UL IP over Ethernet CS service flows are established having different CIDs. Packet classifiers are defined for both connections.
Expected Behaviour	Check that: When the classifiers for the two connections overlap on the IP Protocol, the IUT transmits CS SDUs matching the common IP Protocol on the connection having the higher classifier priority.
Test strategy	
Notes	IP service flows can either be IPv4 or IPv6.

TP ID	TP/SS/PCS/CLS/IPoE/BV-H003
IEEE 802.16 Reference	clauses 5.2.2, paragraph 3 and 11.13.19.3.4.4
PICS Item	
Initial Condition	IUT is operational and two UL IP over Ethernet CS service flows are established having different CIDs. Packet classifiers are defined for both connections.
Expected Behaviour	Check that: When the classifiers for the two connections overlap on the IP Masked Source Address, the IUT transmits CS SDUs matching the common IP Masked Source Address on the connection having the higher classifier priority.
Test strategy	
Notes	IP service flows can either be IPv4 or IPv6.

TP ID	TP/SS/PCS/CLS/IPoE/BV-H004
IEEE 802.16 Reference	clauses 5.2.2, paragraph 3 and 11.13.19.3.4.5
PICS Item	
Initial Condition	IUT is operational and two UL IP over Ethernet CS service flows are established having different CIDs. Packet classifiers are defined for both connections.
Expected Behaviour	Check that: When the classifiers for the two connections overlap on the IP Destination Address, the IUT transmits CS SDUs matching the common IP Destination Address on the connection having the higher classifier priority.
Test strategy	
Notes	IP service flows can either be IPv4 or IPv6.

TP ID	TP/SS/PCS/CLS/IPoE/BV-H005
IEEE 802.16 Reference	clauses 5.2.2, paragraph 3 and 11.13.19.3.4.6
PICS Item	
Initial Condition	IUT is operational and two UL IP over Ethernet CS service flows are established having different CIDs. Packet classifiers are defined for both connections.
Expected Behaviour	Check that: When the classifiers for the two connections overlap on the IP Source Port, the IUT transmits CS SDUs matching the common IP Source Port on the connection having the higher classifier priority.
Test strategy	
Notes	IP service flows can either be IPv4 or IPv6.

TP ID	TP/SS/PCS/CLS/IPoE/BV-H006
IEEE 802.16 Reference	clauses 5.2.2, paragraph 3 and 11.13.19.3.4.7
PICS Item	
Initial Condition	IUT is operational and two UL IP over Ethernet CS service flows are established having different CIDs. Packet classifiers are defined for both connections.
Expected Behaviour	Check that: When the classifiers for the two connections overlap on the IP Protocol Destination Port, the IUT transmits CS SDUs matching the common IP Protocol Destination Port on the connection having the higher classifier priority.
Test strategy	
Notes	IP service flows can either be IPv4 or IPv6.

TP ID	TP/SS/PCS/CLS/IPoE/BV-H007
IEEE 802.16 Reference	clauses 5.2.2, paragraph 3 and 11.13.19.3.4.8
PICS Item	
Initial Condition	IUT is operational and two UL IP over Ethernet CS service flows are established having different CIDs. Packet classifiers are defined for both connections.
Expected Behaviour	Check that: When the classifiers for the two connections overlap on the Ethernet MAC Destination Address, the IUT transmits CS SDUs matching the common Ethernet MAC Destination Address on the connection having the higher classifier priority.
Test strategy	
Notes	IP service flows can either be IPv4 or IPv6.

TP ID	TP/SS/PCS/CLS/IPoE/BV-H008
IEEE 802.16 Reference	clauses 5.2.2, paragraph 3 and 11.13.19.3.4.9
PICS Item	
Initial Condition	IUT is operational and two UL IP over Ethernet CS service flows are established having different CIDs. Packet classifiers are defined for both connections.
Expected Behaviour	Check that: When the classifiers for the two connections overlap on the Ethernet MAC Source Address, the IUT transmits CS SDUs matching the common Ethernet MAC Source Address on the connection having the higher classifier priority.
Test strategy	
Notes	IP service flows can either be IPv4 or IPv6.

TP ID	TP/SS/PCS/CLS/IPoE/BV-H009
IEEE 802.16 Reference	clauses 5.2.2, paragraph 3 and 11.13.19.3.4.10
PICS Item	
Initial Condition	IUT is operational and two UL IP over Ethernet CS service flows are established having different CIDs. Packet classifiers are defined for both connections.
Expected Behaviour	Check that: When the classifiers for the two connections overlap on the Ethertype SAP, the IUT transmits CS SDUs matching the common Ethertype SAP on the connection having the higher classifier priority.
Test strategy	
Notes	IP service flows can either be IPv4 or IPv6.

TP ID	TP/SS/PCS/CLS/IPoE/BV-H010
	Deleted.

TP ID	TP/SS/PCS/CLS/IPoE/BV-H011
IEEE 802.16 Reference	clauses 5.2.2 paragraph 3 and 11.13.19.3.4.2-11
PICS Item	
Initial Condition	IUT is operational and two UL IP over Ethernet CS service flows are established having different CIDs. Packet classifiers are defined for both connections.
Expected Behaviour	Check that: When the classifiers for the two connections overlap on the: - IP Protocol Destination Port; - IP Type of Service/DSCP; - IP Protocol; - IP Masked Source Address; - IP Destination Address; - IP Protocol Source Port; - IP Protocol Destination Port; - Ethernet MAC Destination Address; - Ethernet MAC Source Address; and - Ethertype SAP. the IUT transmits CS SDUs matching the common: - IP Protocol Destination Port; - IP Type of Service/DSCP; - IP Protocol; - IP Masked Source Address; - IP Destination Address; - IP Protocol Source Port; - IP Protocol Destination Port; - Ethernet MAC Destination Address; - Ethernet MAC Source Address; and - Ethertype SAP on the connection having the higher classifier priority.
Test strategy	
Notes	IP service flows can either be IPv4 or IPv6.

5.3.10.3.5 IP over VLAN (IPoV)

TP ID	TP/SS/PCS/CLS/IPoV/BV-H000
IEEE 802.16 Reference	clause 5.2.2, paragraph 3
PICS Item	
Initial Condition	IUT is operational and two UL IP over VLAN CS service flows are established having different CIDs. Packet classifiers are defined for both connections.
Expected Behaviour	Check that: When the classifiers for the two connections do not overlap, the IUT transmits IP over VLAN SDUs matching the classifier for the first connection on the first connection and transmits VLAN CS SDUs matching the classifier for the second connection on the second connection.
Test strategy	
Notes	IP service flows can either be IPv4 or IPv6.

TP ID	TP/SS/PCS/CLS/IPoV/BV-H001
IEEE 802.16 Reference	clauses 5.2.2 paragraph 3 and 11.13.19.3.4.2
PICS Item	
Initial Condition	IUT is operational and two UL IP over VLAN CS service flows are established having different CIDs. Packet classifiers are defined for both connections.
Expected Behaviour	Check that: When the classifiers for the two connections overlap on the IP Type of Service/DSCP, the IUT transmits CS SDUs matching the common IP Type of Service/DSCP on the connection having the higher classifier priority.
Test strategy	
Notes	IP service fl,ows can either be IPv4 or IPv6.

TP ID	TP/SS/PCS/CLS/IPoV/BV-H002
IEEE 802.16 Reference	clauses 5.2.2, paragraph 3 and 11.13.19.3.4.3
PICS Item	
Initial Condition	IUT is operational and two UL IP over VLAN CS service flows are established having different CIDs. Packet classifiers are defined for both connections.
Expected Behaviour	Check that: When the classifiers for the two connections overlap on the IP Protocol, the IUT transmits CS SDUs matching the common IP Protocol on the connection having the higher classifier priority.
Test strategy	
Notes	IP service flows can either be IPv4 or IPv6.

TP ID	TP/SS/PCS/CLS/IPoV/BV-H003
IEEE 802.16 Reference	clauses 5.2.2, paragraph 3 and 11.13.19.3.4.4
PICS Item	
Initial Condition	IUT is operational and two UL IP over VLAN CS service flows are established having different CIDs. Packet classifiers are defined for both connections.
Expected Behaviour	Check that: When the classifiers for the two connections overlap on the IP Masked Source Address, the IUT transmits CS SDUs matching the common IP Masked Source Address on the connection having the higher classifier priority.
Test strategy	
Notes	IP service flows can either be IPv4 or IPv6.

TP ID	TP/SS/PCS/CLS/IPoV/BV-H004
IEEE 802.16 Reference	clauses 5.2.2, paragraph 3 and 11.13.19.3.4.5
PICS Item	
Initial Condition	IUT is operational and two UL IP over VLAN CS service flows are established having different CIDs. Packet classifiers are defined for both connections.
Expected Behaviour	Check that: When the classifiers for the two connections overlap on the IP Destination Address, the IUT transmits CS SDUs matching the common IP Destination Address on the connection having the higher classifier priority.
Test strategy	
Notes	IP service flows can either be IPv4 or IPv6.

TP ID	TP/SS/PCS/CLS/IPoV/BV-H005
IEEE 802.16 Reference	clauses 5.2.2, paragraph 3 and 11.13.19.3.4.6
PICS Item	
Initial Condition	IUT is operational and two UL IP over VLAN CS service flows are established having different CIDs. Packet classifiers are defined for both connections.
Expected Behaviour	Check that: When the classifiers for the two connections overlap on the IP Source Port, the IUT transmits CS SDUs matching the common IP Source Port on the connection having the higher classifier priority.
Test strategy	
Notes	IP service flows can either be IPv4 or IPv6.

TP ID	TP/SS/PCS/CLS/IPoV/BV-H006
IEEE 802.16 Reference	clauses 5.2.2, paragraph 3 and 11.13.19.3.4.7
PICS Item	
Initial Condition	IUT is operational and two UL IP over VLAN CS service flows are established having different CIDs. Packet classifiers are defined for both connections.
Expected Behaviour	Check that: When the classifiers for the two connections overlap on the IP Protocol Destination Port, the IUT transmits CS SDUs matching the common IP Protocol Destination Port on the connection having the higher classifier priority.
Test strategy	
Notes	IP service flows can either be IPv4 or IPv6.

TP ID	TP/SS/PCS/CLS/IPoV/BV-H007
IEEE 802.16 Reference	clauses 5.2.2, paragraph 3 and 11.13.19.3.4.12
PICS Item	
Initial Condition	IUT is operational and two UL VLAN CS service flows are established having different CIDs. Packet classifiers are defined for both connections.
Expected Behaviour	Check that: When the classifiers for the two connections overlap on the VLAN ID, the IUT transmits CS SDUs matching the common VLAN ID on the connection having the higher classifier priority.
Test strategy	
Notes	IP service flows can either be IPv4 or IPv6.

TP ID	TP/SS/PCS/CLS/IPoV/BV-H008
IEEE 802.16 Reference	clauses 5.2.2, paragraph 3 and 11.13.19.3.4.2 to 7, 12
PICS Item	
Initial Condition	IUT is operational and two UL VLAN CS service flows are established having different CIDs. Packet classifiers are defined for both connections.
Expected Behaviour	Check that: When the classifiers for the two connections overlap on the: - IP Protocol Destination Port; - IP Type of Service/DSCP; - IP Protocol; - IP Masked Source Address; - IP Destination Address; - IP Protocol Source Port; - IP Protocol Destination Port; and - VLAN ID the IUT transmits CS SDUs matching the common: - IP Protocol Destination Port; - IP Type of Service/DSCP; - IP Protocol; - IP Masked Source Address; - IP Destination Address; - IP Protocol Source Port; - IP Protocol Destination Port; and VLAN ID on the connection having the higher classifier priority.
Test strategy	
Notes	IP service flows can either be IPv4 or IPv6.

5.3.10.4   Payload Header Suppression (PHS)

TP ID	TP/SS/PCS/PHS/BV-H000
IEEE 802.16 Reference	clause 5.2.3.2, paragraph 3
PICS Item	
Initial Condition	IUT is operating.
Expected Behaviour	Check that: To create a PHS rule, the IUT uses DSA or DSC messages.
Test strategy	
Notes	

TP ID	TP/SS/PCS/PHS/BV-H001
IEEE 802.16 Reference	clause 5.2.3.2, paragraph 5
PICS Item	
Initial Condition	IUT is operating and defining a PHS rule using more than one transaction with DSA and/or DSC messages.
Expected Behaviour	Check that: For each step whether using a DSA or DSC message, the IUT generates the messages containing both the SFID and the PHS index.
Test strategy	
Notes	Contradicts TP/SS/PCS/PHS/BV-H002 if DSx transaction is SS-initiated.

TP ID	TP/SS/PCS/PHS/BV-H002
IEEE 802.16 Reference	clause 5.2.3.2, paragraph 3 Figure "PHS Signaling Example"
PICS Item	
Initial Condition	IUT is operating. IUT is creating a PHS rule by initiating a DSA or a DSC transaction.
Expected Behaviour	Check that: When generating the DSA-REQ or the DSC-REQ, the IUT does not include the PHSI field.
Test strategy	
Notes	

TP ID	TP/SS/PCS/PHS/BV-H100
IEEE 802.16 Reference	clauses 5.2.3.2, paragraph 3 and 11.13.19.3.2
PICS Item	
Initial Condition	IUT is operating.
Expected Behaviour	Check that: To change or delete a PHS rule, the IUT uses DSC messages.
Test strategy	
Notes	

TP ID	TP/SS/PCS/PHS/BV-H101
IEEE 802.16 Reference	clause 5.2.3, paragraph 2
PICS Item	
Initial Condition	IUT is operating. A packet CS service flow with PHS is established for a packet classifier.
Expected Behaviour	Check that: When the packet classifier is deleted, the IUT deletes the PHS rule associated with the packet classifier.
Test strategy	
Notes	

TP ID	TP/SS/PCS/PHS/BV-H102
IEEE 802.16 Reference	clause 5.2.3, paragraph 2
PICS Item	
Initial Condition	IUT is operating. A packet CS service flow with PHS is established for a packet classifier.
Expected Behaviour	Check that: To change the value of a PHSF on the service, the IUT removes the old PHS rule and adds a new PHS rule reflecting the change.
Test strategy	
Notes	The order of removal and add is not specified. Assume no order is required.

TP ID	TP/SS/PCS/PHS/BV-H103
IEEE 802.16 Reference	clause 5.2.3, paragraph 2
PICS Item	
Initial Condition	IUT is operating. A packet CS service flow with PHS is established for a packet classifier.
Expected Behaviour	Check that: On completion of a DSC transaction to delete a classifier and another DSC transaction to add a classifier in either order, the IUT treats the two transactions as a change to the PHSF.
Test strategy	
Notes	

TP ID	TP/SS/PCS/PHS/BV-H200
IEEE 802.16 Reference	clause 5.2.3.1
PICS Item	
Initial Condition	IUT is operating. A DL packet CS service flow with PHS is established for a packet classifier.
Expected Behaviour	Check that: On receiving a valid MAC Data PDU for the connection with a known PHSI not equal to zero, the IUT correctly reconstructs the header according to the PHSI and transmits the SDU to CS.
Test strategy	
Notes	

TP ID	TP/SS/PCS/PHS/BV-H201
IEEE 802.16 Reference	clause 5.2.3.1
PICS Item	
Initial Condition	IUT is operating. A DL packet CS service flow with PHS is established for a packet classifier.
Expected Behaviour	Check that: On receiving a valid MAC Data PDU for the connection with a PHSI = zero, the IUT transmits the CS PDU as received without header reconstruction to the CS.
Test strategy	
Notes	

TP ID	TP/SS/PCS/PHS/BV-H202
IEEE 802.16 Reference	clause 5.2.3.1, paragraph 2
PICS Item	
Initial Condition	IUT is operating. A UL packet CS service flow with PHS is established for a packet classifier. The PHSV was not present during the DSx transaction establishing the suppression rule.
Expected Behaviour	Check that: For a given upper layer protocol, the IUT correctly suppresses the payload header according to the payload header suppression rule.
Test strategy	
Notes	Upper layer protocol can be IPv4, IPv6, Ethernet, VLAN, IP over Ethernet, or IP over VLAN.

TP ID	TP/SS/PCS/PHS/BV-H203
IEEE 802.16 Reference	clause 5.2.3.1, paragraph 2
PICS Item	
Initial Condition	IUT is operating. A UL packet CS service flow with PHS is established for a packet classifier. The PHSV was present during the DSx transaction establishing the suppression rule.
Expected Behaviour	Check that: For a given upper layer protocol, the IUT correctly suppresses the payload header according to the payload header suppression rule.
Test strategy	
Notes	Upper layer protocol can be IPv4, IPv6, Ethernet, VLAN, IP over Ethernet, or IP over VLAN.

5.3.11   Service Flow Control (SF)

TP ID	TP/SS/SF/BV-H000
IEEE 802.16 Reference	clause 6.3.14.6.2
PICS Item	
Initial Condition	IUT is operational and a service flow is Admitted.
Expected Behaviour	Check that: On receiving a DSA-REQ for an additional service flow that exceeds the provisioned QoS, the IUT transmits a DSA-RSP accepting the additional service flow and reserves resources for the service flow already admitted.
Test strategy	
Notes	

TP ID	TP/SS/SF/BV-H001
IEEE 802.16 Reference	clause 6.3.14.6.2
PICS Item	
Initial Condition	IUT is operational and a service flow is Active.
Expected Behaviour	Check that: On receiving a DSC-REQ for the active service flow with an AdmittedQoSParameterSet that is a subset of the current AdmittedQoSParameterSet and the ActiveQoSParameterSet remains a subset of the new AdmittedQoSParameterSet, the IUT transmits a DSC-RSP accepting the new AdmittedQoSParameterSet.
Test strategy	
Notes	

TP ID	TP/SS/SF/BV-H002
IEEE 802.16 Reference	clause 6.3.14.6.2
PICS Item	
Initial Condition	IUT is operational and a service flow is Active.
Expected Behaviour	Check that: On receiving a DSC-REQ for the active service flow with an AdmittedQoSParameterSet that is a subset of the current AdmittedQoSParameterSet and the ActiveQoSParameterSet no longer remains a subset of the new AdmittedQoSParameterSet, the IUT transmits a DSC-RSP rejecting the new AdmittedQoSParameterSet.
Test strategy	
Notes	

TP ID	TP/SS/SF/BV-H003
IEEE 802.16 Reference	clause 6.3.14.8
PICS Item	
Initial Condition	IUT is operational and a service flow is Active.
Expected Behaviour	Check that: On receiving a DSC-REQ message for the service flow containing only an AdmittedQoSParameter set and the on the DSC transaction being successful, the IUT deactivates the service flow.
Test strategy	
Notes	

TP ID	TP/SS/SF/BV-H004
IEEE 802.16 Reference	clause 6.3.14.8
PICS Item	
Initial Condition	IUT is operational and a service flow is Active. The IUT received a DSC-REQ for the service flow with neither an ActiveQoSParameter set nor an AdmittedQosParameter set. This DSC transaction was successful.
Expected Behaviour	Check that: On receiving a DSC-REQ containing only an ActiveQoSParameter set and successful DSC transaction completion, the IUT deactivates the service flow.
Test strategy	
Notes	

TP ID	TP/SS/SF/BV-H005
IEEE 802.16 Reference	clause 6.3.14.8
PICS Item	
Initial Condition	IUT is operational and a service flow is Active.
Expected Behaviour	Check that: On receiving a DSC-REQ containing both an ActiveQoSParameter set and an AdmittedQoSParameter set and on successful completion of the DSC transaction, the IUT implements the QoS contained in the new Admitted and Active QoS Parameter sets (the ActiveQoSParameter set is a subset of the AdmittedQoSParameter set).
Test strategy	
Notes	

TP ID	TP/SS/SF/BV-H006
IEEE 802.16 Reference	clause 6.3.14.8
PICS Item	
Initial Condition	IUT is operational and a service flow is Active.
Expected Behaviour	Check that: On receiving a DSC-REQ containing both an ActiveQoSParameter set and an AdmittedQoSParameter set but the Active set is not a subset of the Admitted set, the IUT transmits a DSC-RSP refusing the change and continues using the original QoS.
Test strategy	
Notes	

TP ID	TP/SS/SF/BV-H007
IEEE 802.16 Reference	clause 6.3.14.9.4
PICS Item	
Initial Condition	IUT is operational and a service flow is Active.
Expected Behaviour	Check that: On receiving a DSC-REQ with a null ActiveQoSParameter set, the IUT transmits a DSC-RSP accepting the transaction and after successful transaction completion the IUT deactivates the service flow.
Test strategy	
Notes	

TP ID	TP/SS/SF/BV-H008
IEEE 802.16 Reference	clauses 6.3.14.2 and 11.13.4
PICS Item	
Initial Condition	IUT has just initialized and is now provisioning a service flow.
Expected Behaviour	Check that: The IUT has service flow parameters containing a ProvisionedQoSParameter set.
Test strategy	
Notes	

TP ID	TP/SS/SF/BV-H009
IEEE 802.16 Reference	clause 6.3.14.2 and 11.13.4
PICS Item	
Initial Condition	IUT has just initialized. A service flow is preprovisioned.
Expected Behaviour	Check that: The IUT has service flow parameters containing a ProvisionedQoSParameter set.
Test strategy	
Notes	

TP ID	TP/SS/SF/BV-H100
IEEE 802.16 Reference	clause 11.13.5
PICS Item	
Initial Condition	IUT is operating with two service flows.
Expected Behaviour	Check that: Given that two service flows are identical in al QoS parameters besides priority, the IUT gives the higher priority service flow lower delay and higher buffering preference.
Test strategy	
Notes	

TP ID	TP/SS/SF/BV-H101
IEEE 802.16 Reference	clause 11.13.6
PICS Item	
Initial Condition	IUT is operational and a service flow is Active and has a non-zero Maximum Sustained Traffic Rate parameter.
Expected Behaviour	Check that: The IUT provides the Maximum Sustained Traffic Rate on the average over time.
Test strategy	
Notes	

TP ID	TP/SS/SF/BV-H102
IEEE 802.16 Reference	clause 11.13.6
PICS Item	
Initial Condition	IUT is operational and a service flow is Active and has a Maximum Sustained Traffic Rate parameter = zero.
Expected Behaviour	Check that: The IUT does not provide a mandated maximum traffic rate.
Test strategy	
Notes	

TP ID	TP/SS/SF/BV-H103
IEEE 802.16 Reference	clause 11.13.6
PICS Item	
Initial Condition	IUT is operational and a service flow is Active and the Maximum Sustained Traffic Rate parameter was omitted during QoS negotiation.
Expected Behaviour	Check that: The IUT does not provide a mandated maximum traffic rate.
Test strategy	
Notes	

TP ID	TP/SS/SF/BV-H104
IEEE 802.16 Reference	clause 11.13.7
PICS Item	
Initial Condition	IUT is operational and a service flow is Active. A Maximum Traffic Burst Size was set during QoS negotiation.
Expected Behaviour	Check that: The IUT provides the Maximum Traffic Burst Size for this service flow.
Test strategy	
Notes	

TP ID	TP/SS/SF/BV-H105
IEEE 802.16 Reference	clause 11.13.10
PICS Item	
Initial Condition	The IUT is operational and a service flow is Active.
Expected Behaviour	Check that: On receiving a DSC-REQ containing Vendor-specific QoS Parameters that does not the Vendor ID as its first element, the IUT discards the Vendor-specific QoS Parameters, processes the remainder of the DSC-REQ, and transmits a valid DSC-RSP.
Test strategy	
Notes	

TP ID	TP/SS/SF/BV-H106
IEEE 802.16 Reference	clause 11.13.12
PICS Item	
Initial Condition	The IUT is operational.
Expected Behaviour	Check that: On receiving a DSA-REQ with the Request/transmission Policy Bit #0 set to zero followed by a successful DSA transaction, the IUT does not provide broadcast bandwidth request opportunities for the service flow.
Test strategy	
Notes	

TP ID	TP/SS/SF/BV-H107
IEEE 802.16 Reference	clause 11.13.12
PICS Item	
Initial Condition	The IUT is operational.
Expected Behaviour	Check that: On receiving a DSA-REQ with the Request/transmission Policy Bit #1 set to zero followed by a successful DSA transaction, the IUT does not provide multicast bandwidth request opportunities for the service flow.
Test strategy	
Notes	

TP ID	TP/SS/SF/BV-H108
IEEE 802.16 Reference	clause 11.13.12
PICS Item	
Initial Condition	The IUT is operational.
Expected Behaviour	Check that: On receiving a DSA-REQ with the Request/transmission Policy Bit #2 set to prohibit piggy-backing requests with data followed by a successful DSA transaction, the IUT does not piggy-back requests with data for the service flow.
Test strategy	
Notes	

TP ID	TP/SS/SF/BV-H109
IEEE 802.16 Reference	clause 11.13.12
PICS Item	
Initial Condition	The IUT is operational.
Expected Behaviour	Check that: On receiving a DSA-REQ with the Request/transmission Policy Bit #3 set to prohibit data fragmentation followed by a successful DSA transaction, the IUT does not fragment data for the service flow.
Test strategy	
Notes	

TP ID	TP/SS/SF/BV-H110
IEEE 802.16 Reference	clause 11.13.12
PICS Item	
Initial Condition	The IUT is operational.
Expected Behaviour	Check that: On receiving a DSA-REQ with the Request/transmission Policy Bit #4 set to prohibit payload header suppression followed by a successful DSA transaction, the IUT does not suppress headers for the service flow.
Test strategy	
Notes	

TP ID	TP/SS/SF/BV-H111
IEEE 802.16 Reference	clause 11.13.12
PICS Item	
Initial Condition	The IUT is operational.
Expected Behaviour	Check that: On receiving a DSA-REQ with the Request/transmission Policy Bit #5 set to prohibit packing multiple SDUs (or fragments) into single MAC PDUs followed by a successful DSA transaction, the IUT does not pack multiple SDUs (or fragments) into single MAC PDUs for the service flow.
Test strategy	
Notes	

TP ID	TP/SS/SF/BV-H112
IEEE 802.16 Reference	clause 11.13.14
PICS Item	
Initial Condition	The IUT is operational.
Expected Behaviour	Check that: On receiving a DSA-REQ with a Maximum Latency parameter that does not exceed the Minimum Downlink Reserved Rate followed by a successful DSA transaction, the IUT satisfies Maximum Latency requirement for the service flow.
Test strategy	
Notes	

5.3.12 Adaptive Antenna Support (AAS)

TP ID	TP/SS/AAS/BV-H000
IEEE 802.16 Reference	clause 6.3.7.6.4
PICS Item	
Initial Condition	IUT is AAS-capable and beginning network entry.
Expected Behaviour	Check that: On being able to decode the DL-MAP and DCD messages, the IUT conducts network entry the same as the non-AAS case.
Test strategy	
Notes	

TP ID	TP/SS/AAS/BV-H001
IEEE 802.16 Reference	clause 6.3.7.6.4
PICS Item	
Initial Condition	IUT is AAS-capable and beginning network entry.
Expected Behaviour	Check that: On not being able to decode the DL-MAP and DCD messages, the IUT conducts initial ranging on the AAS-alert-slots using all available contention slots.
Test strategy	
Notes	

TP ID	TP/SS/AAS/BV-H002
IEEE 802.16 Reference	clause 6.3.7.6.4
PICS Item	
Initial Condition	IUT is AAS-capable and beginning network entry. Not being able to decode the DL-MAP and DCD messages, the IUT conducted initial ranging on the AAS-alert-slots using all available contention slots.
Expected Behaviour	Check that: On now being able to decode the DL-MAP and DCD messages, the IUT continues network entry the same as the non-AAS case.
Test strategy	
Notes	

TP ID	TP/SS/AAS/BV-H003
IEEE 802.16 Reference	clause 6.3.7.6.4 and 6.3.8
PICS Item	
Initial Condition	IUT is AAS-capable and beginning network entry. Not being able to decode the DL-MAP and DCD messages, the IUT conducted initial ranging on the AAS-alert-slots using all available contention slots.
Expected Behaviour	Check that: On still not being able to decode the DL-MAP and DCD messages, the IUT uses the same exponential backoff algorithm for non-AAS stations to select the next frame for alerting its presence.
Test strategy	
Notes	

TP ID	TP/SS/AAS/BV-H004
IEEE 802.16 Reference	clause 6.3.7.6.6
PICS Item	
Initial Condition	IUT is AAS-capable and requesting bandwidth for data transfer. The IUT is directed to use broadcast allocations for requesting bandwidth.
Expected Behaviour	Check that: When not receiving broadcast allocations for requesting bandwidth, the IUT transmits an AAS Broadcast Capability field in a RNG-REQ message indicating that it cannot receive broadcast messages.
Test strategy	
Notes	

TP ID	TP/SS/AAS/BV-H005
IEEE 802.16 Reference	clause 6.3.7.6.6
PICS Item	
Initial Condition	IUT is AAS-capable and requesting bandwidth for data transfer. The IUT is directed to use broadcast allocations for requesting bandwidth.
Expected Behaviour	Check that: On receiving broadcast allocations for requesting bandwidth, the IUT transmits an AAS Broadcast Capability field in a RNG-REQ message indicating that it receives the broadcast messages.
Test strategy	
Notes	

TP ID	TP/SS/AAS/BV-H006
IEEE 802.16 Reference	clause 8.3.7.2.1, paragraph 1
PICS Item	
Initial Condition	IUT is AAS-capable and starting Initialization.
Expected Behaviour	Check that: On receiving a UL-MAP with an Initial Ranging IE (UIUC=1) marked with an AAS Initial Ranging CID, the IUT transmits an AAS_NW_ENTRY_REQ using the most robust mandatory rate.
Test strategy	
Notes	

Annex A (informative):
Bibliography

- IETF RFC 2131: "Dynamic Host Configuration Protocol".

- IETF RFC 868: "Time Protocol".

- IETF RFC 1123: "Requirements for Internet Hosts - Application and Support".

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

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