Project	**IEEE 802.16 Broadband Wireless Access Working Group <http://ieee802.org/16>**	
Title	**Replacement TSS&TP Section 5.1-5.3**	
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Re:	1802.16.2-03/01 Call for comments and contributions regarding C1802.16.2-03/01r1.	
Abstract	Edited Structure Section to be more in line with rest of document.	
Purpose	Replace current section 5.1-5.3	
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Replacement TSS&TP Section 5.1-5.3

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0.1 Structure

The following table shows the Test Suite Structure (TSS) including its defined subgroups for conformance testing.

Table 1 Test Suite Groups

Test Suite Groups	Protocol Groups	Naming Conventions	Test Groups				
			CA	BV	BI	BO	TI
Channel Descriptors and Maps							
Radio Link Control		RLC					
	Initial Ranging	IRNG	X	X	X	X	X
	Periodic Ranging	PRNG	X	X	X		X
	Downlink Burst Profile Management	DBPC	X	X	X	X	X
	Negotiate Basic Capabilities	SBC					
Registration functions		INI					
	Registration	REG					
	Establish IP Connectivity	IPC					

Table 1 Test Suite Groups (Continued)

Privacy and Key Management		PKM					
	Authorization	AUTH					
	TEK	TEK					
	Security Associations	SAM					
Dynamic Services		DS	X	X	X	X	X
	Dynamic Service Addition	DSA	X	X	X	X	X
	Dynamic Service Change	DSC	X	X	X	X	X
	Dynamic Service Deletion	DSD	X	X	X	X	
Bandwidth allocation and Polling		BWA					
	Polling	POL					
	Request/Grant	REQ					
	Multicast Polling	MCP					
Reset and Reregistration		RER	X		X		

Table 1 Test Suite Groups (Continued)

	Reset/De-register	RES					
Clock Comparison		CCC	X		X	X	X
	Clock Comparison	CCC					
MAC PDU							
Physical Layer							
ATM CS		ACS					
	ATM CS	ATM	X	X	X		
Packet CS		PCS					

0.2 Test Groups

The test groups are organized into three levels of groups. The levels include the test suite groups, protocol groups, and test groups. The test suites are the highest level breakdowns. The second level separates the protocol services in functional modules within each test suite. The last level in each branch contains one or more of the standard ISO sub-groups CA, BV, BI, BO and TI (defined below).

0.3 Test Suites and Protocol Groups

The protocol groups identify the each of the subdivisions of the test suites.

The Test Suites define the top level testable areas for conformance testing. The test suites include TBD.

The protocol groups within each test suite are defined below.

0.3.1 Channel Descriptors and Maps

0.3.2 Radio Link Control

0.3.2.1 Initial Ranging

0.3.2.2 Periodic Ranging

0.3.2.3 Downlink Burst Profile Management

0.3.2.4 Negotiate Basic Capabilities

0.3.3 Registration Functions

0.3.3.1 Registration

0.3.3.2 Establish IP Connectivity

0.3.4 Privacy Key Management

The Privacy Key Management function group is divided into three functional modules. These include Authentication, Traffic Encryption Keys (TEKs) and Authorization Keys (AKs), and Security Associations (SAIDs). This function is primarily responsible for validating conformance of the normal operation of the authorization and key exchanges and to validate security associations between the SS and BS.

0.3.4.1 Authentication

0.3.4.2 TEK

0.3.4.3 Security Associations

0.3.5 Dynamic Services

The Dynamic Services test suite is broken down into three protocol groups. These are Dynamic Service Addition (DSA), Dynamic Service Change (DSC), and Dynamic Service Deletion (DSD). Those three protocol groups are further broken down into functional test groups.

0.3.5.1 Dynamic Service Addition

This protocol group covers the tests to validate conformance to the Dynamic Service Addition functions. Normal DSA message flows are validated as well as invalid or inopportune DSA message behavior between a BS and SS. Timer tests are also identified to test timeouts during the DSA process, both BS and SS initiated.

0.3.5.2 Dynamic Service Change

This protocol group covers the tests to validate conformance to the Dynamic Service Change functions. Normal DSC message flows are validated as well as invalid or inopportune DSC message behavior between a BS and SS. Timer tests are also identified to test timeouts during the DSC process, both BS and SS initiated.

0.3.5.3 Dynamic Service Deletion

This protocol group covers the tests to validate conformance to the Dynamic Service Deletion functions. Normal DSD message flows are validated as well as invalid or inopportune DSD message behavior between a BS and SS. Timer tests are also identified to test timeouts during the DSD process, both BS and SS initiated.

0.3.6 Bandwidth Allocation and Polling

0.3.6.1 Polling

0.3.6.2 Request/Grant

0.3.6.3 Multicast Polling

0.3.7 Reset and Registration

0.3.8 Clock Comparison

0.3.9 MAC PDUs

0.3.10 PHY

0.3.11 ATM Convergence Sublayer

0.3.12 Packet Convergence Sublayer

0.4 Main Test Groups

The main test groups are the capability (CA), the valid behavior (BV), the invalid behavior (BI), inopportune behavior (BO) and the timer (TI) tests group.

0.4.1 Capability (CA) tests

This test sub group shall provide limited testing of the major IUT capabilities aiming to insure that the claimed capabilities are correctly supported, according to the PICS. Note that CA tests are very similar to Valid Behavior (BV) tests. The distinction will be that CA tests will be the normal default case of messages and BV tests will be any legal normal variants (for example, change the cryptographic suite selection from the default).

0.4.2 Valid Behavior (BV) tests

This test sub group shall verify that the IUT reacts in conformity with the TS, 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. Note that CA tests are very similar to Valid Behavior (BV) tests. The distinction will be that CA tests will be the normal default case of messages and BV tests will be any legal normal variants (for example, change the cryptographic suite selection from the default).

Notes:

- ∑ It is assumed that a method to look at messages at a protocol level is available (this may be a serial port session, a protocol analyzer, etc.)

0.4.3 Invalid Behavior (BI) tests

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

Notes:

- ∑ It is assumed that a method to look at messages at a protocol level is available (this may be a serial port session, a protocol analyzer, etc.).
- ∑ Care must be taken when defining tests in this group as they should be according to requirements in IEEE 802.16 or in the PICS Proforma.

0.4.4 Inopportune Behavior (BO) tests

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

Notes:

- ∑ It is assumed that a method to look at messages at a protocol level is available (this may be a serial port session, a protocol analyzer, etc.).
- ∑ Care must be taken when defining tests in this group as they should be according to requirements in IEEE 802.16 or in the PICS Proforma.

0.4.5 Timer (TI) tests

This test sub group shall verify that the IUT reacts in conformity with the TS, after timer activity (start, stop, expiration, etc.).