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IEEE Standard for Conformance to IEEE 802.16

Part 4: Protocol Implementation Conformance Statement (PICS) Proforma for Frequencies below 11 GHz

IEEE Computer Society
and the
IEEE Microwave Theory and Techniques Society

Sponsored by the
LAN/MAN Standards Committee

IEEE
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(Conformance to IEEE Std 802.16-2004)

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Approved 15 September 2006

IEEE-SA Standards Board

Abstract: This standard represents the Protocol Implementation Conformance Statement Proforma, per ISO/IEC 9646-7 and ITU-T X.296, for conformance specification of base stations and subscriber stations based on the air interface specified in IEEE Std 802.16 for frequencies below 11 GHz.

Keywords: broadband wireless access (BWA), compliance test, fixed broadband wireless access networks, metropolitan area network, microwaves, point-to-multipoint, wireless access systems (WAS), WirelessMAN® standards

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Contents

1. Overview 1

1.1 Scope 1
1.2 Purpose 1

2. Normative references 1

3. Definitions and abbreviations 2

3.1 Definitions 2
3.2 Abbreviations 3

4. Conformance to this PICS proforma specification 3

Annex A (normative) PICS proforma for frequencies below 11 GHz 4

IEEE Standard for Conformance to IEEE 802.16

Part 4: Protocol Implementation Conformance Statement (PICS) Proforma for Frequencies below 11 GHz

1. Overview

To evaluate conformance of a particular implementation, it is necessary to have a statement of which capabilities and options have been implemented for a telecommunications specification. Such a statement is called a protocol Implementation Conformance Statement (ICS).

1.1 Scope

This standard represents the Protocol Implementation Conformance Statement (PICS) Proforma, per ISO/IEC 9646-7[1] and ITU-T X.296, for conformance specification of base stations and subscriber stations based on the air interface specified in IEEE Std 802.16™-2004 for frequencies below 11 GHz.

1.2 Purpose

This document describes the capabilities and options within the air interface specified for frequencies below 11 GHz in IEEE Std 802.16-2004. It is to be completed by the supplier of a product claiming to implement the protocol. It indicates which capabilities and options have been implemented. It allows a user of the product to evaluate its conformance and to determine whether the product meets the user's requirements.

2. Normative references

The following referenced documents are indispensable for the application of this document. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments or corrigenda) applies. The following documents contain provisions

[1]Information on references can be found in Clause 2.

which, through reference in this text, constitute provisions of the present document. References are either specific (identified by date of publication, edition number, version number, etc.) or non-specific. For a specific reference, subsequent revisions do not apply. For a non-specific reference, the latest version applies.

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

ISO/IEC 9646-1, Information technology — Open Systems Interconnection — Conformance testing methodology and framework — Part 1: General concepts.[3]

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

ETSI TS 102 385-1, Broadband Radio Access Networks (BRAN); HiperMAN/WiMAX; Conformance testing for the Data Link Control Layer (DLC); Part 1: Protocol Implementation Conformance Statement (PICS) proforma.[4]

3. Definitions and abbreviations

3.1 Definitions

This standard uses terms defined in IEEE Std 802.16-2004, ISO/IEC 9646-1, ISO/IEC 9646-7, and ETSI TS 102 385-1. *The Authoritative Dictionary of IEEE Standards Terms*, Seventh Edition, should be referenced for terms not defined in this clause.

In particular, the following terms and definitions defined in ISO/IEC 9464-1 apply:

Implementation Conformance Statement (ICS): Statement made by the supplier of an implementation or system claimed to conform to a given specification, stating which capabilities have been implemented. The ICS can take several forms: protocol ICS, profile ICS, profile specific ICS, information object ICS, etc.

ICS proforma: Document, in the form of a questionnaire, which when completed for an implementation or system becomes an ICS.

Protocol ICS (PICS): ICS for an implementation or system claimed to conform to a given protocol specification.

[2]IEEE publications are available from the Institute of Electrical and Electronics Engineers, Inc., 445 Hoes Lane, Piscataway, NJ 08854, USA (http://standards.ieee.org/).

[3]ISO/IEC publications are available from the ISO Central Secretariat, Case Postale 56, 1 rue de Varembé, CH-1211, Genève 20, Switzerland/Suisse (http://www.iso.ch/). ISO/IEC publications are also available in the United States from Global Engineering Documents, 15 Inverness Way East, Englewood, CO 80112, USA (http://global.ihs.com/). Electronic copies are available in the United States from the American National Standards Institute, 25 West 43rd Street, 4th Floor, New York, NY 10036, USA (http://www.ansi.org/).

[4]ETSI publications are available from the European Telecommunications Standards Institute, 650 route des Lucioles, 06921 Sophia-Antipolis Cedex, France (http://www.etsi.org).

3.2 Abbreviations

This standard uses terms defined in IEEE Std 802.16-2004. In addition, the following abbreviations apply:

ATS	abstract test suite
ICS	Implementation Conformance Statement
IUT	Implementation Under Test
PICS	Protocol Implementation Conformance Statement
RCT	radio conformance test
SUT	System Under Test
TP	test purpose
TSS	test suite structure

4. Conformance to this PICS proforma specification

If it claims to conform to this standard, the actual PICS proforma to be filled in by a supplier shall be technically equivalent to the text of the PICS proforma given in Annex A and shall preserve the numbering, naming, and ordering of the proforma items.

A PICS that conforms to this standard shall be a conforming PICS proforma completed in accordance with the guidance for completion given in A.1.

Annex A

(normative)

PICS proforma for frequencies below 11 GHz

A.1 Guidance for completing PICS proforma[5]

A.1.1 Purposes and structure

The purpose of this PICS proforma is to provide a mechanism whereby a supplier of an implementation of the requirements for WirelessMAN below 11 GHz defined in IEEE Std 802.16-2004 may provide information about the implementation in a standardized manner.

The PICS proforma is subdivided into subclauses for the following categories of information:

— Guidance for completing the PICS proforma
— Identification of the implementation
— Identification of the standard
— Global statement of conformance
— Roles
— WirelessMAN-OFDM
— WirelessMAN-OFDMA

A.1.2 Abbreviations and conventions

Item column

The Item column contains a number that identifies the item in the table.

Capability column

The capability column describes in free text each respective item (e.g., parameters and timers). It implicitly means “Is <capability> supported by the implementation?”.

Reference column

The reference column indicates the section(s) of IEEE Std 802.16-2004 from which the requirement for the capability is derived.

[5]*Copyright release for PICS proformas*: Users of the published standard may freely reproduce the PICS proforma in this annex so that it can be used for its intended purpose, and they may further publish the completed PICS.

Status column

The following notations, defined in ISO/IEC 9646-7, are used in the status column:

m	Mandatory — the capability is required to be supported
o	Optional — the capability may be supported or not
n/a	Not applicable — in the given context, it is impossible to use the capability
x	Prohibited (excluded) — there is a requirement not to use this capability in the given context
o.i	Qualified option — for mutually exclusive or selectable options from a set. "i" is an integer that identifies a group of related optional items and the logic of their selection which is defined immediately following the table
ci	Conditional — the requirement on the capability ("m", "o", "x", or "n/a") depends on the support of other optional or conditional items. "i" is an integer identifying a conditional status expression that is defined immediately following the table.
i	Irrelevant (out of scope) — capability outside the scope of the reference specification. No answer is requested from the supplier.

Support column

The support column shall be filled in by the supplier of the implementation. The following common notations, defined in ISO/IEC 9646-7, are used for the support column:

Y or y	Supported by implementation.
N or n	Not supported by implementation.
N/A, n/a or -	No answer required (allowed only if the status is n/a either directly or after the evaluation of a conditional status).

Values column

The values column is only used when necessary in a table. It contains the type, the list, the range, or the length of values. The following notations are used:

Range of values: Example:	<min value>..<max value> 5..20
List of values: Example 1: Example 2: Example 3:	<value1>, <value2>, …, <valueN> 2, 4, 6, 8, 9 1101b, 1011b, 1111b 0x0A, 0x34, 0x2F
List of named values: Example:	<name1>(<val1>), <name2>(<val2>), …, <nameN>(<valN>) reject(1), accept(2)
Length: Example:	Size (<min size>..<max size>) Size (1..8)

Values supported column

The values supported column is only present when the values column is present. It shall be filled in by the supplier of the implementation. In this column, the value or the ranges of values supported by the implementation shall be indicated.

Reference to items

For each possible item answer in the support column within the PICS proforma a unique reference exists that may be used, for example, in conditional expressions. It is defined as the table identifier, followed by the "/" character, followed by the item number in the table. If there is more than one support column in a table, the columns are discriminated by letters (a, b, etc.).

Example:	A.5/4 is the reference to the answer of item 4 in Table A.5.
Example:	A.6/3b is the reference to the second answer (i.e., in the second support column) of item 3 in Table A.6.

Prerequisite line

A prerequisite line takes the following form:

Prerequisite: <predicate>

A prerequisite line after a clause or table title indicates that the entire clause or the entire table is not required to be completed if the predicate is FALSE.

A.1.3 Instructions for completing the PICS proforma

The supplier of the implementation shall complete the PICS proforma in each of the spaces provided. In particular, an explicit answer shall be entered, in the support or values supported column boxes provided, using the notation described in A.1.2.

However, tables specific for subscriber stations (SS) shall only be completed for SS implementations, and tables specific to base stations (BS) shall only be completed for BS implementations.

If necessary, the supplier may provide additional comments in the space at the bottom of the tables or separately.

A.2 Identification of the implementation

Identification of the Implementation Under Test (IUT) and the system in which it resides [the System Under Test (SUT)] should be filled in to provide as much detail as possible regarding version numbers and configuration options.

The product supplier and client information should both be filled in if they are different.

A person who can answer queries regarding information supplied in the PICS should be named as the contact person.

A.2.1 Date of statement

Date of Statement:

A.2.2 Implementation Under Test (IUT) identification

IUT name:
IUT version:

A.2.3 System Under Test (SUT) identification

SUT name:
Hardware configuration:
Operating system:

A.2.4 Product supplier

Name:
Address:
Telephone number:
Facsimile number:
E-mail address:
Additional information:

A.2.5 Client (if different from product supplier)

Name:
Address:
Telephone number:
Facsimile number:
E-mail address:
Additional information:

A.2.6 PICS contact person

(A person to contact if there are any queries concerning the content of the PICS.)

Name:
Telephone number:
Facsimile number:
E-mail address:
Additional information:

A.3 Identification of the standard

This PICS proforma applies to IEEE Std 802.16-2004.

A.4 Global statement of conformance

Are all mandatory capabilities implemented? (Yes/No)

NOTE—Answering "No" to this question indicates non-conformance to IEEE Std 802.16-2004. Non-supported mandatory capabilities are to be identified in the PICS, with an explanation of why the implementation is non-conforming, on pages attached to the PICS proforma.

A.5 Protocol ICS for MAC layer of WirelessMAN OFDMA

Table A.1—Profiles

Profiles	Reference	Status	Support
OFDMA_ProfP1	12.4.3.2	o.1	
OFDMA_ProfP2	12.4.3.3	o.1	
OFDMA_ProfP3	12.4.3.4	o.1	
OFDMA_ProfP4	12.4.3.5	o.1	
OFDMA_ProfP5	12.4.3.6	o.1	
OFDMA_ProfP6	12.4.3.7	o.1	
OFDMA_ProfP7	12.4.3.8	o.1	
OFDMA_ProfP8	12.4.3.9	o.1	
OFDMA_ProfP9	12.4.3.10	o.1	

o.1: It is mandatory to support at least one of these items.

A.5.1 Roles

Table A.2—Roles

Item	Role	Reference	Status	Support
1	Subscriber station (SS)		o.2	
2	Base station (BS)		o.2	

o.2: It is mandatory to support at least one of these items.

A.5.2 PICS for SS—subscriber station

This subclause contains the PICS proforma tables related to the SS. They need to be completed for the description of SS implementations only.

Prerequisite: A.2/1 --subscriber station. This prerequisite applies throughout this subclause A.5.2.

A.5.2.1 Network topology

Table A.3—Network topology

Item	Role	Reference	Status	Support
1	PMP topology (SS to BS traffic)		m	

A.5.2.2 SS capabilities of the physical layer in PMP topology

Prerequisite: A.3/1 --PMP topology.

This prerequisite applies throughout this subclause A.5.2.2.

Table A.4—Channelization for SS in PMP topology

Item	Name	Reference	Status	Support
1	1.25 MHz channel PHY	12.4	o.4	
2	3.5 MHz channel PHY	12.4	o.4	
3	7.0 MHz channel PHY	: 12.4	o.4	
4	8.75 MHz channel PHY	12.4	o.4	
5	14 MHz channel PHY	12.4	o.4	
6	17.5 MHz channel PHY	12.4	o.4	
7	28 MHz channel PHY	12.4	o.4	
8	10 MHz channel PHY	12.4	o.4	
9	20 MHz channel PHY	12.4	o.4	

o.4: It is mandatory to support at least one of these items.

Table A.5—Power classes for SS in PMP topology

Item	Name	Reference	Status	Support
1	$P_{TX,max} < 17$ dBm	12.4.1	o.5	
2	17 dBm $< P_{TX,max} < 20$ dBm	12.4.1	o.5	
3	20 dBm $< P_{TX,max} < 23$ dBm	12.4.1	o.5	
4	23 dBm $< P_{TX,max} < 30$ dBm	12.4.1	o.5	
5	$P_{TX,max} > 30$ dBm	12.4.1	o.5	

o.5: It is mandatory to support at least one of these items.

Table A.6—Duplexing modes—PMP

Item	Name	Reference	Status	Support
1	TDD Time Division Duplexing	6.3.7.2	o.6	
2	Framed FDD Frequency Division Duplexing Full duplex	6.3.7.1	o.6	
3	Framed FDD Half Duplex	6.3.7.1	o.6	

o.6: It is mandatory to support at least one of these items.

Table A.7 lists the optional functions that have a direct impact on the protocol or on the associated profiles.

Table A.7—Major PHY functions for SS in PMP

Item	Name	Reference	Status	Support
1	AAS (Adaptive Antenna) Diversity MAP Scan	8.4.4.6	o	
2	AAS (Adaptive Antenna) Direct Signaling	8.4.4.7	o	
3	Optional FUSC	8.4.6.1.2.3	o	
4	Optional PUSC	8.4.6.2.5	o	
5	AMC	8.4.4.7.8	o	
6	H-ARQ	8.4.9.2.3.1	o	
7	Dynamic Frequency Support DFS	6.3.15	o	
8	Encoding	8.4.9.2	o	

A.5.2.3 SS capabilities of the MAC in PMP topology

Prerequisite: A.3/1 --PMP topology

This prerequisite applies throughout this subclause A.5.2.3.

A.5.2.3.1 SS convergence sublayer—SS in PMP

Table A.8—Convergence sublayer protocol support

Item	Name	Reference	Status	Support
1	Packet convergence sublayer	5.2	m	
2	ATM convergence sublayer	5.2	o	

Table A.9—Packet convergence sublayer protocol support

Item	Name	Reference	Status	Support
1	Internet Protocol (IPv4)	5.2	m	
2	Internet Protocol (IPv6)	5.2	o	
3	IEEE 802.3™ (Ethernet)	5.2	m	
4	IEEE 802.1Q™ VLAN	5.2	o	

Table A.10—ATM convergence sublayer protocol support

Prerequisite: A.8/2: SS supports ATM

Item	Name	Reference	Status	Support
1	ATM in VP switched mode	5.1	o.10	
2	ATM in VC switched mode	5.1	o.10	

o.10: It is mandatory to support at least one of these items.

Table A.11—CS functions in SS

Item	Name	Reference	Status	Support
1	Packet header suppression (PHS)	5.2.4	o	
2	Packet classification	5.2	o	

Table A.12—Major sending CS functions (SS in PMP)

Item	Name	Reference	Status	Support
1	Classification of PDUs into appropriate connection	5.2	m	
2	Suppression of payload header information (PHS function)	5.1.2.3 5.2.4	c12-01	
3	Delivery of resulting CS PDU to the MAC SAP associated with the service flow	5.2	m	

c12-01: IF A.11/1- if SS supports PHS protocol
THEN m - then mandatory
ELSE n/a - else not applicable

Table A.13—Major receiving CS functions (SS in PMP)

Item	Name	Reference	Status	Support
1	Receipt of the CS PDU	5.2	m	
2	Rebuilding of suppressed payload header information (PHS function)	5.1.2.3 5.2.4	c13-01	

c13-01: IF A.11/1- if SS supports PHS protocol
THEN m - then mandatory
ELSE n/a - else not applicable

Table A.14—Major packet payload header suppression capabilities

Item	Name	Reference	Status	Support
1	PHSV: test validity of Header (before suppression)	5.2.4	c14-01	
2	PHSM: mask to allow selective suppression of header	5.2.4	c14-01	

c14-01: IF A.11/1- if SS supports PHS protocol
THEN m - then mandatory
ELSE n/a - else not applicable

Table A.15—Major packet classification

Item	Name	Reference	Status	Support
1	IP Classification of PDUs into appropriate connection	11.13.19.3.4	m	
2	Ethernet classification of PDUs into appropriate connection	11.13.19.3.4	c15-01	
3	IEEE 802.1Q VLAN classification of PDUs into appropriate connection	11.13.19.3.4	c15-02	

c15-01: IF A.9/4 - if SS supports Ethernet protocol
THEN m - then mandatory
ELSE n/a - else not applicable

c15-02: IF A.9/5 - if SS supports 802.1Q protocol
THEN m - then mandatory
ELSE n/a - else not applicable

Table A.16—Ethernet packet classification in the UL

Prerequisite: A.9/4 --Ethernet support

Item	Name	Reference	Status	Support
1	Classification based on Destination MAC Address	11.13.19.3.4.8	m	
2	Classification based on Source MAC Address	11.13.19.3.4.9	m	
3	Classification based on Ethertype/SAP	11.13.19.3.4.10	m	

Table A.17—802.1Q packet classification in the UL

Prerequisite: A.9/5 --802.1Q support

Item	Name	Reference	Status	Support
1	Classification based on 802.1D user priority	11.13.19.3.4.11	m	
2	Classification based on 802.1Q VLAN ID	11.13.19.3.4.12	m	

A.5.2.3.2 SS MAC common part sublayer—PMP

Table A.18—Major MAC common part functionalities for SS in PMP

Item	Name	Reference	Status	Support
1	Addressing and connections	6.3.1	m	
2	Construction of PDUs	6.3.3	m	
3	ARQ	6.3.4	o	
4	Uplink scheduling service	6.3.5	m	
5	Bandwidth allocation and request	6.3.6	m	
6	Duplexing modes	6.3.7	m	
7	Contention resolution	6.3.8	m	
8	Network entry and initialization	6.3.9	m	
9	OFDMA-based ranging	6.3.10.3	m	
10	Update of UL and DL channel descriptors	6.3.11	m	
11	Quality of service	6.3.13	m	
12	Managed mode	[1] 6.3.9	o	

Table A.19—Miscellaneous management functions for SS in PMP

Item	Name	Reference	Status	Support
1	Assignment of SSs to multicast groups (MCA_REQ messages from BS)	6.3.12	m	
2	SS reset initiated by BS (RES-CMD)	6.3.2.3.22	m	
3	SS network clock comparison initiated by BS (CLK-CMP)	6.3.2.3.25	m	
4	SS notifies BS of de-registration (DREG-REQ)	6.3.2.3.43	m	
5	SS forced by BS to change its channel access (DREG-CMD)	6.3.2.3.26	m	
6	SS receives quick answer from BS to its DSx-REQ (DSX-RVD)	6.3.2.3.27	m	
7	SS informs BS of reception of Config file (TFTP messages)	6.3.2.3.28 6.3.2.3.29	c19-01	
8	SS answers to BS channel management report request (REP-REQ and REP-RSP)	6.3.2.3.33	m	
9	SS applies the power change requested by the BS (FPC)	6.3.2.3.34	m	
10	SS answers the AAS feedback message request from the BS (AAS-FBCK messages)	6.3.2.3.40	c19-02	
11	SS informs the BS of preferred beam direction (AAS-BEAM select message)	6.3.2.3.41	c19-02	
12	SS answers the AAS beam message request from the BS (AAS-Beam messages)	6.3.2.3.42	c19-02	

c19-01 IF A.18/12 -if SS supports Managed Mode
THEN m - then mandatory
ELSE n/a - else not applicable
c19-02 IF A.7/1 - if SS supports AAS mode (adaptive antenna)
THEN m - then mandatory
ELSE n/a - else not applicable

A.5.2.3.2.1 Addressing and connections

Table A.20—Addressing and connections—PMP

Item	Capability	Reference	Status	Support
1	Globally Unique SS MAC Address	6.3.1	m	
2	Time urgent MAC Management messages on basic connection	6.3.1	m	
3	Delay tolerant MAC Management messages on primary management connection	6.3.1	m	
4	IP packets on the secondary management connection	6.3.1	c20-01	

c20-01 IF A.18/12 -if SS supports Managed Mode
THEN m - then mandatory
ELSE n/a - else not applicable

A.5.2.3.2.2 Construction and transmission of MAC PDUs

A.5.2.3.2.2.1 Conventions

Table A.21—Transmission conventions

Item	Capability	Reference	Status	Support
1	Transmit messages most significant byte first	6.3.3.1	m	
2	Transmit bytes most significant bit first	6.3.3.1	m	

A.5.2.3.2.2.2 PDU concatenation

Table A.22—PDU concatenation

Item	Capability	Reference	Status	Support
1	Concatenate Multiple MAC PDUs into a single burst of the allocated length	6.3.3.2	m	
2	Receive concatenated MAC PDUs and determine disposition via CID	6.3.3.2	m	

A.5.2.3.2.2.3 SDU fragmentation

Table A.23—SDU fragmentation

Item	Capability	Reference	Status	Support
1	Fragment a MAC SDU into multiple MAC PDUs applicable to Management messages on Primary management connection	6.3.3.3	m	
2	Correctly set the Fragmentation Control (FC) bits	6.3.3.3	m	
3	Perform fragmentation of Management messages on Primary management connection	6.3.2.3	m	
4	Do not perform fragmentation of PDUs on Basic, Broadcast, and Initial Ranging connections	6.3.2.3	m	

A.5.2.3.2.2.4 SDU reassembly

Table A.24—SDU reassembly

Item	Capability	Reference	Status	Support
1	Receive and reassemble fragmented SDUs	6.3.3.3	m	
2	Discard SDUs corrupted due to loss of fragment	6.3.3.3	m	

A.5.2.3.2.2.5 Packing

Table A.25—Packing

Item	Capability	Reference	Status	Support
1	Pack Fixed length non-ARQ SDUs in a MAC PDU	6.3.3.4.1.1	m	
2	Pack variable length non-ARQ SDUs in a MAC PDU	6.3.3.4.1.2	m	
3	Pack variable-length ARQ-enabled SDUs or SDUs fragments in a MAC PDU	6.3.3.4.2	c25-01	
4	Do not pack fixed-length ARQ-enabled SDUs	6.3.3.4.2	c25-01	
5	Do not perform packing of SDUs on Basic, Broadcast, and Initial Ranging connections	6.3.2.3	m	
6	Do not perform packing of ARQ Feedback Payload	6.3.3.4.3	c25-01	
7	Compute and add CRC	6.3.3.5	m	

c25-01: IF A19/3- if SS supports ARQ procedure
THEN m - then mandatory
ELSE n/a - else not applicable

A.5.2.3.2.2.6 Unpacking

Table A.26—Unpacking

Item	Capability	Reference	Status	Support
1	Receive (unpack) fixed-length SDUs	6.3.3.4.1.1	m	
2	Receive (unpack) variable-length SDUs	6.3.3.4.1	m	
3	Check CRC	6.3.3.5	m	

A.5.2.3.2.3 ARQ

Table A.27—ARQ

Item	Capability	Reference	Status	Support
1	SS supports ARQ applicable to a single unidirectional connection	6.3.4	c27-01	
2	Pack several ARQ feedback information elements in a single ARQ feedback payload	6.3.4	c27-01	
3	Insert a single ARQ feedback payload as first packet in a MAC PDU	6.3.4	c27-01	

c27-01: IF A.18/3- if SS supports ARQ procedure
THEN m - then mandatory
ELSE n/a - else not applicable

A.5.2.3.2.4 Uplink scheduling services

Table A.28—Uplink scheduling services

Item	Name	Reference	Status	Support
1	Unsolicited grant service (UGS)	6.3.5.2.1	o	
2	Real-time polling service (rtPS)	6.3.5.2.2	o	
3	Non-real-time polling service (nrtPS)	6.3.5.2.3	o	
4	Best effort service (BE)	6.3.5.2.4	o	

A.5.2.3.2.5 Bandwidth allocation and request

Table A.29—Bandwidth allocation and request

Item	Name	Reference	Status	Support
1	SS requests aggregate bandwidth via Bandwidth Request Header	6.3.6.1	m	
2	SS requests incremental bandwidth via Bandwidth Request Header	6.3.6.1	m	
3	SS requests incremental bandwidth via piggyback request	6.3.6.1	m	
4	SS transmits Bandwidth request during Request IE grant	6.3.6.1	m	
5	SS transmits Bandwidth request during Data Grant IE grant	6.3.6.1	m	
6	SS responds to Unicast, Multicast, or Broadcast polls	6.3.6.3.2 6.3.6.3.1	m	
7	SS uses Poll-me (PM) bit	6.3.6.3.3	m	
8	SS requests bandwidth using CDMA Bandwidth Request code	6.3.6.5	m	

A.5.2.3.2.6 Duplexing modes or support of PHY layers

The MAC layer shall support at least one of the duplexing modes as defined in Table A.6.

A.5.2.3.2.7 Contention resolution

Table A.30—Contention resolution

Item	Name	Reference	Status	Support
1	The SS supports truncated exponential backoff for initial ranging	6.3.8	m	
2	The SS supports truncated exponential backoff for bandwidth request contention	6.3.8	m	

A.5.2.3.2.8 Network entry and initialization

Table A.31—Network entry and initialization for SS in PMP

Item	Name	Reference	Status	Support
1	Obtain Downlink Parameters from DCD	6.3.9.2	m	
2	Obtain Uplink Parameters from UCD	6.3.9.3, 6.3.9.4	m	
3	Perform Initial Ranging	6.3.9.5, 6.3.9.6	m	
4	Inform BS of Basic Capabilities	6.3.9.7	m	
5	Perform SS Authorization	6.3.9.8, 7.2	m	
6	Perform registration	6.3.9.9	m	
7	Request for IP connectivity	6.3.9.10	c31-01	
8	Establish Time of day	6.3.9.11	c31-01	
9	Transfer operational parameters	6.3.9.12	c31-01	

c31-01 IF A.18/12 -if SS supports Managed Mode
THEN m - then mandatory
ELSE n/a - else not applicable

A.5.2.3.2.8.1 Obtain downlink parameters

Table A.32—Obtain DL parameters

Item	Capability	Reference	Status	Support
1	SS receives DL-MAP correctly	6.3.9.2	m	
2	SS receives DCD correctly	6.3.9.2	m	

A.5.2.3.2.8.2 Obtain uplink parameters

Table A.33—Obtain UL parameters

Item	Capability	Reference	Status	Support
1	SS receives UCD correctly	6.3.9.3, 6.3.9.4	m	

A.5.2.3.2.8.3 Initial ranging

Table A.34—Initial ranging

Item	Capability	Reference	Status	Support
1	SS receives UL-MAP	6.3.9.5	m	
2	SS calculates the maximum transmit signal strength	8.4.10.3	m	
3	SS sends Initial Ranging Code	8.4.7.1; 6.3.10.3	m	
4	SS sends again Initial Ranging Code if no response, with adjusted power	8.4.7.1; 6.3.10.3	m	
5	SS receives RNG-RSP messages directed to it. RNG-RSP is directed to SS if it contains the MAC Address or the Basic CID of the SS or if the message contains CDMA-code parameters specifying the code previously transmitted by the SS	6.3.9.5	m	
6	After RNG-RSP with status success, SS receives CDMA allocation IE that contains CDMA-code parameters specifying the code previously transmitted by the SS	[1] 6.3.9.5	m	
7	SS transmits RNG-REQ message in UL slot as allocated by CDMA allocation IE	[1] 6.3.9.5	m	
8	SS establishes Basic and Primary Management connections	6.3.9.5	m	
9	SS performs timing and power adjustment	6.3.9.5	m	
10	SS performs final tuning using Periodic Ranging	6.3.9.5	m	

A.5.2.3.2.8.4 Negotiate basic capabilities

Table A.35—Negotiate basic capabilities

Item	Capability	Reference	Status	Support
1	SS sends SBC-REQ	6.3.9.7	m	
2	SS receives SBC-RSP	6.3.9.7	m	
3	SS resends SBC-REQ on timeout	6.3.9.7	m	

A.5.2.3.2.8.5 SS authorization

See A.5.2.3.3 for SS Privacy Functions when authorizing against BS (PMP Topology).

A.5.2.3.2.8.6 Registration

Table A.36—Registration

Item	Capability	Reference	Status	Support
1	SS sends REG-REQ to register with a BS	6.3.9.9	m	
2	SS receives REG-RSP which may include the Secondary management CID	6.3.9.9	m	
3	SS resends REG-REQ upon timeout, until REG-RSP is received	6.3.9.9	m	
4	SS establishes Secondary Management Connection	6.3.9.9	c36-01	

c36-01 IF A.18/12 -if SS supports Managed Mode
THEN m - then mandatory
ELSE n/a - else not applicable

A.5.2.3.2.8.7 Establish IP connectivity

Table A.37—Establish IP connectivity

Prerequisite: A.18/12: SS supports Managed mode

Item	Capability	Reference	Status	Support
1	Are the DHCP mechanisms following the IETF RFC 2131 rules?	6.3.9.10	m	
2	SS sends DHCP discover on Secondary Management Connection	6.3.9.10	m	
3	SS receives DHCP offer on Secondary Management Connection	6.3.9.10	m	
4	SS sends DHCP request on Secondary Management Connection	6.3.9.10	m	
5	SS receives DHCP response on Secondary Management Connection	6.3.9.10	m	
6	SS sets up IP parameters from DHCP response	6.3.9.10	m	

A.5.2.3.2.8.8 Establish time of day

Table A.38—Establish time of day

Prerequisite: A.18/12: SS supports Managed mode

Item	Capability	Reference	Status	Support
1	Are the protocols for time of day following the IETF RFC 868 rules?	6.3.9.11	m	
2	SS sends Time of Day request	6.3.9.11	m	
3	SS receives Time of Day response	6.3.9.11	m	
4	SS establishes Time of Day	6.3.9.11	m	

A.5.2.3.2.8.9 Transfer operational parameters

Table A.39—Transfer operational parameters

Prerequisite: A.18/12: SS supports Managed mode

Item	Capability	Reference	Status	Support
1	SS sends TFTP-CPLT on Secondary management connection, after successful configuration using DHCP protocol	6.3.9.12	m	
2	SS sends TFTP-CPLT on Primary management connection, for notification	6.3.9.12	m	
3	SS receives TFTP-RSP as response to TFTP-CPLT	6.3.9.12	m	
4	SS keeps sending TFTP-CPLT on timeout while waiting for TFTP-RSP	6.3.9.12	m	

A.5.2.3.2.9 Periodic ranging

Table A.40—Periodic ranging

Item	Capability	Reference	Status	Support
1	SS manages the downlink burst profile and initiates the change to more appropriate DL bursts	6.3.10.1	m	
2	SS performs uplink periodic ranging and adjusts transmission parameters	6.3.10.3	m	
3	SS controls periodicity for ranging, using timers	6.3.10.3	m	

A.5.2.3.2.10 Update of channel descriptors

Table A.41—Update of channel descriptors by SS

Item	Capability	Reference	Status	Support
1	SS stores new uplink burst descriptors upon receiving UCD message with incremented Configuration change count (I+1 mod 256)	6.3.11	m	
2	SS transmits using new generation of burst descriptors defined in UCD after receiving UL-MAP with UCD Count matching the new Configuration Change Count (I+1 mod 256)	6.3.11	m	
3	SS stores new downlink burst descriptors upon receiving DCD message with incremented Configuration Change Count (I+1 mod 256)	6.3.11	m	
4	SS receives using new generation of burst descriptors after receiving DL-MAP with DCD Count matching the new Configuration Change Count (I+1 mod 256)	6.3.11	m	

A.5.2.3.2.11 Assigning SSs to multicast groups

Table A.42—Assignment of SSs to multicast groups

Item	Capability	Reference	Status	Support
1	SS receives a request for joining or leaving a multicast polling group, using MCA-REQ	6.3.12	m	
2	SS supports participation in multicast polling group and adds multicast CID to transmission opportunities to join the group	6.3.12	m	
3	SS supports participation in multicast polling group and deletes multicast CID to transmission opportunities to leave the group	6.3.12	m	
4	SS transmits MCA-RSP to acknowledge the action and indicate status (ok, reject,…)	6.3.12	m	

A.5.2.3.2.12 Quality of service—service flows

Table A.43—Service flow operations

Item	Capability	Reference	Status	Support
1	SS receives DSA-REQ on preprovisioned service flows, to get encodings	6.3.14.7.1	m	
2	SS initiates (DSA-REQ) the creation of a Dynamic service flow	6.3.14.7.2	m	
3	SS answers (DSA-RSP) to the creation of a Dynamic service flow initiated by BS	6.3.14.7.2	m	
4	SS initiates (DSC-REQ) the modification of a Dynamic service flow	6.3.14.9.4	m	
5	SS answers (DSC-RSP) to the modification of a Dynamic service flow initiated by BS	6.3.14.9.4	m	
6	SS initiates (DSD-REQ) the release of a Dynamic service flow	6.3.14.9.5	m	
7	SS answers (DSD-RSP) to the release of a Dynamic service flow initiated by BS	6.3.14.9.5	m	

A.5.2.3.3 SS privacy functions—PMP

Table A.44—Major privacy functions for SS in PMP

Item	Name	Reference	Status	Support
1	Does the SS perform Authorization and key exchange as per 7.2?	6.3.9.8	m	
2	Does the SS provide a manufacturer's X.509 certificate to the BS during Authorization Information message?	6.3.9.8, 7.2.1	o.6	
3	Does the SS provide a third-party X.509 certificate to the BS during Authorization Information message?	6.3.9.8, 7.2.1	o.6	
4	Does SS send Auth Request (PKM-REQ with *Code=4*)?	6.3.9.8, 7.2.1	m	
5	Does the SS provide a manufacturer's X.509 certificate to the BS during Authorization Request?	6.3.9.8, 7.2.1	m	
6	Does the SS include details of the supported cryptographic suite identifiers as part of the Authorization Request?	6.3.9.8, 7.2.1	m	
7	Does the SS provide its Basic CID as part of the Authorization Request?	6.3.9.8, 7.2.1	m	
8	Does SS support receipt of Auth Reply (PKM-RSP with *Code=5*)?	6.3.9.8, 7.2;	m	
9	Does the SS store the AK and derive KEK, HMAC_KEY_U, and HMAC_KEY_D?	6.3.9.8, 7.2.1	m	
10	Does SS support establishment of Sas listed in Auth Reply?	6.3.9.8, 7.2;	m	
11	Does SS support resend of Auth Request on timeout (Auth Wait Timeout)?	6.3.9.8, 7.2.1, 7.2.4.4, 11.9.19.1	m	
12	Does the SS support two simultaneously active Aks?	6.3.9.8, 7.2.1	m	

o.6: It is mandatory to support at least one of these items.

Table A.45—PKM message encodings support

Item	Capability	Reference	Status	Support	Values Allowed	Values Supported
1	Display-string	11.9.1	o			
2	AUTH-Key	11.9.2	m			
3	TEK	11.9.3	m			
4	Key-Lifetime	11.9.4	m			
5	Key-Sequence-Number	11.9.5	m		AK:0-15 TEK:0-3	
6	HMAC-Digest	11.9.6	m			
7	SAID	11.9.7	m			
8	TEK-Parameters	11.9.8	m			
9	CBC-IV	11.9.9	m			
10	Error-Code	11.9.10	m		0-6	
11	CA-Certificate	11.9.11	m			
12	SS-Certificate	11.9.12	m			
13	Security-Capabilities	11.9.13	m			
14	Cryptographic-Suite	11.9.14	m		See Table A.46	
15	Cryptographic-Suite-List	11.9.15	m			
16	Version	11.9.16	m		1	
17	SA-Descriptor	11.9.17	m			
18	SA-Type	11.9.18	m		0,1,2	
19	PKM Configuration Setting	11.9.19	m			

Table A.46—Cryptographic suites

Item	Capability	Reference	Status	Support	Value Allowed	Value Suppor-ted
1	No data encrypt, no data authent &3-DES 128	11.9.14	m		0x000001	
2	CBC-mode 56bit DES, no data authent &3-DES 128	11.9.14	m		0x010001	
3	No data encrypt, no data authent & RSA, 1024	11.9.14	m		0x000002	
4	CBC-mode 56bit DES, no data authent & RSA, 1024	11.9.14	m		0x010002	

A.5.3 PICS for BS—Base station

This clause contains the PICS proforma tables related to the Base Station. They need to be completed for description of BS implementations only.

Prerequisite: A.2/2 --base station (BS)

This prerequisite applies throughout this subclause A.5.3.

A.5.3.1 Network topology

Supported topology is PMP.

A.5.3.2 BS capabilities of the physical layer (PMP topology)

Table A.47—Channelization for BS

Item	Name	Reference	Status	Support
1	1.25 MHz channel PHY	12.4	o.7	
2	3.5 MHz channel PHY	12.4	o.7	
3	7.0 MHz channel PHY	12.4	o.7	
4	8.75 MHz channel PHY	12.4	o.7	
5	14 MHz channel PHY	12.4	o.7	
6	17.5 MHz channel PHY	12.4	o.7	
7	28 MHz channel PHY	12.4	o.7	
8	10 MHz channel PHY	12.4	o.7	
9	20 MHz channel PHY	12.4	o.7	

o.7 It is mandatory to support at least one of these items.

Table A.48—Power classes for BS

Item	Name	Reference	Status	Support
1	$P_{TX,max}$ < 17 dBm	12.4.1	o.8	
2	17 dBm < $P_{TX,max}$ < 20 dBm	12.4.1	o.8	
3	20 dBm < $P_{TX,max}$ < 23 dBm	12.4.1	o.8	
4	23 dBm < $P_{TX,max}$ < 30 dBm	12.4.1	o.8	
5	$P_{TX,max}$ > 30 dBm	12.4.1	o.8	

o.8 It is mandatory to support at least one of these items.

Table A.49—Duplexing modes

Item	Name	Reference	Status	Support
1	TDD Time Division Duplexing	6.3.7.2	o.9	
2	Framed FDD Frequency Division Duplexing Full duplex	6.3.7.1	o.9	

o.9: It is mandatory to support at least one of these items.

Table A.50—Major PHY functions for BS

Item	Name	Reference	Status	Support
1	AAS (Adaptive Antenna) Diversity MAP Scan	8.4.4.6	o	
2	AAS (Adaptive Antenna) Direct Signaling	8.4.4.7	o	
3	Optional FUSC	8.4.6.1.2.3	o	
4	Optional PUSC	8.4.6.2.5	o	
5	AMC	8.4.4.7.8	o	
6	H-ARQ	8.4.9.2.3.1	o	
7	Dynamic Frequency Support DFS	6.3.15	o	
8	Encoding	8.4.9.2	o	

A.5.3.3 BS capabilities of the MAC (PMP topology)

A.5.3.3.1 BS convergence sublayer—PMP

Table A.51—Convergence sublayer protocol support

Item	Name	Reference	Status	Support
1	Packet convergence sublayer	5.2	m	
2	ATM convergence sublayer	5.2	o	

Table A.52—Packet sublayer protocol support

Item	Name	Reference	Status	Support
1	Internet Protocol (IPv4)	5.2	m	
2	Internet Protocol (IPv6)	5.2	o	
3	IEEE 802.3 (Ethernet)	5.2	o	
4	IEEE 802.1Q VLAN	5.2	o	

Prerequisite:A.51/2: BS supports ATM

Table A.53—ATM convergence sublayer protocol support

Item	Name	Reference	Status	Support
1	ATM in VP switched mode	5.1	o.10	
2	ATM in VC switched mode	5.1	o.10	

o.10: It is mandatory to support at least one of these items.

Table A.54—CS functions in BS

Item	Name	Reference	Status	Support
1	Packet header suppression (PHS)	5.2.4	o	
2	Packet classification	5.2	o	

Table A.55—Major sending CS functions of BS

Item	Name	Reference	Status	Support
1	Classification of PDUs into appropriate connection	5.2	m	
2	Suppression of payload header information (PHS function)	5.1.2.3 5.2.4	c55-01	
3	Delivery of resulting CS PDU to the MAC SAP associated with the service flow	5.2	m	

c55-01: IF A.54/2 - if BS supports PHS protocol
THEN m - then mandatory
ELSE n/a - else not applicable

Table A.56—Major receiving CS functions of BS

Item	Name	Reference	Status	Support
1	Receipt of the CS PDU	5.2	m	
2	Rebuilding of suppressed payload header information (PHS function)	5.1.2.3 5.2.4	c56-01	

c56-01: IF A.54/2 - if BS supports PHS protocol
THEN m - then mandatory
ELSE n/a - else not applicable

Table A.57—Major packet payload header suppression capabilities

Item	Name	Reference	Status	Support
1	PHSV: Test validity of Header (before suppression)	5.2.4	c57-01	
2	PHSM: mask to allow selective suppression of header	5.2.4	c57-01	

PHSV shall not be set to disable PHS verification of suppressed bytes, unless the suppressed information is protected by an SDU checksum (such as FCS for the 802.3/Ethernet CS).

c57-01: IF A.54/2- if BS supports PHS protocol
THEN m - then mandatory
ELSE n/a - else not applicable

Table A.58—Major packet classification

Item	Name	Reference	Status	Support
1	IP Classification of PDUs into appropriate connection	11.13.19.3.4	c58-01	
2	Ethernet classification of PDUs into appropriate connection	11.13.19.3.4	c58-02	
3	IEEE 802.1Q VLAN classification of PDUs into appropriate connection	11.13.19.3.4	c58-03	

c58-01: IF A.52/1 or A.52/2 - if BS supports IP protocol
THEN m - then mandatory
ELSE n/a - else not applicable

c58-02: IF A.52/4 - if BS supports Ethernet protocol
THEN m - then mandatory
ELSE n/a - else not applicable

c58-03: IF A.52/5 - if BS supports 802.1Q protocol
THEN m - then mandatory
ELSE n/a - else not applicable

Table A.59—IP packet classification in the UL

Prerequisite: A.52/1 or A.52/2 --IP support

Item	Name	Reference	Status	Support
1	Classification based on DSCP /IP TOS field	11.13.19.3.4.2	m	
2	Classification based on IP Protocol/Next Header field	11.13.19.3.4.3	m	
3	Classification based on IP masked Source Address	11.13.19.3.4.4	m	
4	Classification based on IP Destination Address	11.13.19.3.4.5	m	
5	Classification based on protocol source port range	11.13.19.3.4.6	m	
6	Classification based on protocol destination port range	11.13.19.3.4.7	m	

Table A.60—Ethernet packet classification in the UL

Prerequisite: A.52/4 --Ethernet support

Item	Name	Reference	Status	Support
1	Classification based on Destination MAC Address	11.13.19.3.4.8	m	
2	Classification based on Source MAC Address	11.13.19.3.4.9	m	
3	Classification based on Ethertype/SAP	11.13.19.3.4.10	m	

Table A.61—802.1Q packet classification in the UL

Prerequisite: A.52/5 --802.1Q support

Item	Name	Reference	Status	Support
1	Classification based on 802.1D user priority	11.13.19.3.4.11	m	
2	Classification based on 802.1Q VLAN ID	11.13.19.3.4.12	m	

A.5.3.3.2 BS MAC common part sublayer—PMP

Table A.62—Major MAC common part functionalities for BS

Item	Name	Reference	Status	Support
1	Addressing and connections	6.3.1	m	
2	Construction of PDUs	6.3.3	m	
3	ARQ	6.3.4	o	
4	Uplink scheduling service	6.3.5	m	
5	Bandwidth allocation and request	6.3.6	m	
6	Duplexing modes	6.3.7	m	
7	Contention resolution	6.3.8	m	
8	Network entry and initialization	6.3.9	m	
9	Ranging	6.3.10	m	
10	OFDMA-based Ranging	6.3.10.3	m	
11	Update of UL and DL channel descriptors	6.3.11	m	
12	Quality of service	6.3.13	m	

Table A.63—Miscellaneous management functions for BS

Item	Name	Reference	Status	Support
1	Assignment of SSs to multicast groups (MCA_REQ messages from BS)	6.3.12	m	
2	BS initiates SS reset (RES-CMD)	6.3.2.3.22	m	
3	BS initiates SS network clock comparison (CLK-CMP)	6.3.2.3.25	m	
4	BS notified by SS of SS de-registration (DREG-REQ)	6.3.2.3.43	m	
5	BS forces SS to change its channel access (DREG-CMD)	6.3.2.3.26	m	
6	BS sends quick answer to DSx-REQ sent by SS (DSX-RVD)	6.3.2.3.27	m	
7	BS receives confirmation of reception of Config file (TFTP messages)	6.3.2.3.28 6.3.2.3.29	m	
8	BS sends channel management report request (REP-REQ)	6.3.2.3.33	c63-01	
9	BS requests the power change (FPC)	6.3.2.3.34	m	
10	BS sends AAS feedback message request (AAS-FBCK messages)	6.3.2.3.40	c63-02	
11	BS is informed of preferred beam direction (AAS-BEAM select message)	6.3.2.3.41	c63-02	
12	BS sends AAS beam message request (AAS-Beam messages)	6.3.2.3.42	c63-02	

c63-01 is mandatory if band below 11 GHz
which seems always true
ELSE n/a - else not applicable

c63-02 IF A.50/1- if BS supports AAS mode (adaptive antenna)
THEN m - then mandatory
ELSE n/a - else not applicable

A.5.3.3.2.1 Addressing and connections

Table A.64—Addressing and connections—PMP

Item	Capability	Reference	Status	Support
1	Globally Unique 48-bit BS MAC Address	6.3.1	m	
2	Connections are identified by 16-bit CID	6.3.1	m	
3	Time urgent MAC Management messages on basic connection	6.3.1	m	
4	Delay tolerant MAC Management messages on primary management connection	6.3.1	m	
5	IP packets on the secondary management connection	6.3.1	c64-01	

c64-01 IF A.18/12 -if SS supports Managed Mode
THEN m - then mandatory
ELSE n/a - else not applicable

A.5.3.3.2.2 Construction and transmission of MAC PDUs

A.5.3.3.2.2.1 Conventions

Table A.65—Transmission conventions

Item	Capability	Reference	Status	Support
1	Transmit messages most significant byte first	6.3.3.1	m	
2	Transmit bytes most significant bit first	6.3.3.1	m	

A.5.3.3.2.2.2 PDU concatenation

Table A.66—PDU concatenation

Item	Capability	Reference	Status	Support
1	Concatenate Multiple MAC PDUs into a single burst of the allocated length	6.3.3.2	m	
2	Receive concatenated MAC PDUs and determine disposition via CID	6.3.3.2	m	

A.5.3.3.2.2.3 SDU fragmentation

Table A.67—SDU fragmentation

Item	Capability	Reference	Status	Support
1	Fragment a MAC SDU into multiple MAC PDUs applicable to Management messages on Primary management connection	6.3.3.3	m	
2	Correctly set the Fragmentation Control (FC) bits	6.3.3.3	m	
3	Perform fragmentation of Management messages on Primary management connection	6.3.2.3	m	
4	Do not perform fragmentation of PDUs on Basic, Broadcast and Initial Ranging connections	6.3.2.3	m	

A.5.3.3.2.2.4 SDU reassembly

Table A.68—SDU reassembly

Item	Capability	Reference	Status	Support
1	Receive and reassemble fragmented SDUs	6.3.3.3	m	
2	Discard SDUs corrupted due to loss of fragment	6.3.3.3	m	

A.5.3.3.2.2.5 Packing

Table A.69—Packing

Item	Capability	Reference	Status	Support
1	Pack Fixed length non-ARQ SDUs in a MAC PDU	6.3.3.4.1.1	m	
2	Pack variable length non-ARQ SDUs in a MAC PDU	6.3.3.4.1.2	m	
3	Pack variable length ARQ-enabled SDUs or SDUs fragments in a MAC PDU	6.3.3.4.2	c69-01	
4	Do not pack fixed length ARQ-enabled SDUs	6.3.3.4.2	c69-01	
5	Do not perform packing of SDUs on Basic, Broadcast and Initial Ranging connections	6.3.2.3	m	
6	Do not perform packing of ARQ Feedback Payload	6.3.3.4.3	c69-01	
7	Compute and add CRC	6.3.3.5	m	

c69-01: IF A.62/3- if BS supports ARQ procedure
THEN m - then mandatory
ELSE n/a - else not applicable

A.5.3.3.2.2.6 Unpacking

Table A.70—Unpacking

Item	Capability	Reference	Status	Support
1	Receive (unpack) fixed length SDUs	6.3.3.4.1.1	m	
2	Receive (unpack) variable length SDUs	6.3.3.4.1	m	
3	Check CRC	6.3.3.5	m	

A.5.3.3.2.3 ARQ

Table A.71—ARQ

Item	Capability	Reference	Status	Support
1	BS supports ARQ applicable to a single unidirectional connection	6.3.4	c71-01	
2	Pack several ARQ feedback information elements in a single ARQ feedback payload	6.3.4.2	c71-01	
3	Insert a single ARQ feedback payload as first packet in a MAC PDU	6.3.4.2	c71-01	

c71-01: IF A.62/3- if BS supports ARQ procedure
THEN m - then mandatory
ELSE n/a - else not applicable

A.5.3.3.2.4 Uplink scheduling services

Table A.72—Uplink scheduling services

Item	Name	Reference	Status	Support
1	Unsolicited grant service (UGS)	6.3.5.2.1	o	
2	Real time polling service (rtPS)	6.3.5.2.2	o	
3	Non-Real time polling service (nrtPS)	6.3.5.2.3	o	
4	Best effort service (BE)	6.3.5.2.4	o	

A.5.3.3.2.5 Bandwidth allocation and request

Table A.73—Bandwidth allocation and request

Item	Name	Reference	Status	Support
1	BS receives request for aggregate bandwidth via Bandwidth Request Header	6.3.6.1	m	
2	BS receives request for incremental bandwidth via Bandwidth Request Header	6.3.6.1	m	
3	BS receives request for incremental bandwidth via piggyback request	6.3.6.1	m	
4	BS receives Bandwidth request during Request IE grant	6.3.6.1	m	
5	BS receives Bandwidth request during Data Grant IE grant	6.3.6.1	m	
6	BS sends Unicast, Multicast or Broadcast polls	6.3.6.3.2 6.3.6.3.1	m	
7	BS detects polling requested by Poll-me (PM) bit	6.3.6.3.3	m	
8	BS receives Bandwidth through CDMA Bandwidth Request code	6.3.6.5	m	

A.5.3.3.2.6 Duplexing modes or support of physical layer

Refer to Table A.49 for a description of the duplexing modes.

A.5.3.3.2.7 Contention resolution

Table A.74—Contention resolution

Item	Name	Reference	Status	Support
1	The BS sets truncated exponential backoff for initial ranging	6.3.8	m	
2	The BS sets truncated exponential backoff for bandwidth request contention	6.3.8	m	

A.5.3.3.2.8 Network entry and initialization

Table A.75—Network entry and initialization for BS

Item	Name	Reference	Status	Support
1	Send Downlink Parameters via DCD periodic PDUs	6.3.9.2	m	
2	Send Uplink Parameters via UCD periodic PDUs	6.3.9.3, 6.3.9.4	m	
3	Allocate an Initial Ranging interval	6.3.9.5, 6.3.9.6	m	
4	Negotiate Basic Capabilities (SBC-RSP)	6.3.9.7	m	
5	Perform authorization and key exchange	6.3.9.8, 7.2	m	
6	Accept registration to allow SS in network	6.3.9.9	m	
7	Establish IP connectivity and forward IP address	6.3.9.10	m	
8	Establish Time of day	6.3.9.11	m	
9	Receives operational parameters from SS	6.3.9.12	m	

A.5.3.3.2.8.1 Obtain downlink parameters

Table A.76—Obtain DL parameters

Item	Capability	Reference	Status	Support
1	BS sends DL-MAP	6.3.9.2	m	
2	BS sends DCD	6.3.9.2	m	

A.5.3.3.2.8.2 Obtain uplink parameters

Table A.77—Obtain UL parameters

Item	Capability	Reference	Status	Support
1	BS sends UCD	6.3.9.3, 6.3.9.4	m	

A.5.3.3.2.8.3 Initial ranging

Table A.78—Initial ranging

Item	Capability	Reference	Status	Support
1	BS sends UL-MAP	6.3.9.5	m	
2	BS receives Initial Ranging Code	8.4.7.1; 6.3.10.3	m	
3	BS sends RNG-RSP containing the SS MAC Address or Basic CID or, if generated as response to a CDMA code, CDMA-code parameters specifying the parameters of that code.	6.3.9.5	m	
4	BS allocates Basic and Primary Management connections IDs	6.3.9.5	m	

A.5.3.3.2.8.4 Negotiate basic capabilities

Table A.79—Negotiate basic capabilities

Item	Capability	Reference	Status	Sup-port
1	BS receives SBC-REQ	6.3.9.7	m	
2	BS sends SBC-RSP	6.3.9.7	m	

A.5.3.3.2.8.5 SS authorization

See A.5.3.3.3.

A.5.3.3.2.8.6 Registration

Table A.80—Registration

Item	Capability	Reference	Status	Support
1	BS receives REG-REQ to register	6.3.9.9	m	
2	BS sends REG-RSP, which may include the Secondary management CID, the IP version	6.3.9.9	m	

A.5.3.3.2.8.7 Establish IP connectivity

Prerequisite: A.18/12: SS supports Managed mode

Table A.81—Establish IP connectivity

Item	Capability	Reference	Status	Support
1	Are the DHCP mechanisms following the IETF RFC 2131 rules?	6.3.9.10	m	
2	BS receives DHCP discover on Secondary Management Connection	6.3.9.10	m	
3	BS sends DHCP offer on Secondary Management Connection	6.3.9.10	m	
4	BS receives DHCP request on Secondary Management Connection	6.3.9.10	m	
5	BS sends DHCP response on Secondary Management Connection	6.3.9.10	m	

A.5.3.3.2.8.8 Establish time of day

Prerequisite: A.18/12: SS supports Managed mode

Table A.82—Establish time of day

Item	Capability	Reference	Status	Support
1	Are the protocols for time of day following the IETF RFC 868 rules?	6.3.9.11	m	
2	BS receives Time of Day request	6.3.9.11	m	
3	BS processes the request and sends Time of Day response	6.3.9.11	m	

A.5.3.3.2.8.9 Transfer operational parameters

Prerequisite: A.18/12: SS supports Managed mode

Table A.83—Transfer operational parameters

Item	Capability	Reference	Status	Support
1	BS is informed of completion of successful configuration using DHCP protocol, when receiving TFTP-CPLT on Primary management connection, for notification	6.3.9.12	m	
2	BS sends TFTP-RSP as response to TFTP-CPLT	6.3.9.12	m	

A.5.3.3.2.9 Periodic ranging

Table A.84—Periodic ranging

Item	Capability	Reference	Status	Support
1	BS responds to the change to more appropriate DL bursts	6.3.10.1	m	
2	BS performs uplink periodic ranging and adjusts transmission parameters using RNG-RSP	6.3.10.2	m	

A.5.3.3.2.10 Update of UL and DL channel descriptors

Table A.85—Update of channel descriptors

Item	Capability	Reference	Status	Support
1	BS sends UL channel descriptors at regular intervals using UCD message with identical Configuration change count	6.3.11	m	
2	BS sends new UL burst descriptors using UCD message with incremented Configuration change count (I+1 mod 256)	6.3.11	m	
3	BS sends DL channel descriptors at regular intervals using DCD message with identical Configuration change count	6.3.11	m	
4	BS sends new DL burst descriptors using DCD message with incremented Configuration change count (I+1 mod 256)	6.3.11	m	

A.5.3.3.2.11 BS assigns SSs to multicast groups

Table A.86—Assignment of SSs to multicast groups

Item	Capability	Reference	Status	Support
1	BS adds or removes an SS to a multicast polling group, using MCA-REQ	6.3.12	m	
2	BS waits for MCA-RSP that acknowledge the action and indicate status (ok, reject,…)	6.3.12	m	

A.5.3.3.2.12 Quality of service—service flows

Table A.87—Service flow operations

Item	Capability	Reference	Status	Support
1	BS issues DSA-REQ on preprovisioned service flows, to pass encodings	6.3.14.7.1	m	
2	BS initiates (DSA-REQ) the creation of a Dynamic service flow	6.3.14.7.2	m	
3	BS answers (DSA-RSP) to the creation of a Dynamic service flow initiated by SS	6.3.14.7.2	m	
4	BS initiates (DSC-REQ) the modification of a Dynamic service flow	6.3.14.9.4	m	
5	BS answers (DSC-RSP) to the modification of a Dynamic service flow initiated by SS	6.3.14.9.4	m	
6	BS initiates (DSD-REQ) the release of a Dynamic service flow	6.3.14.9.5	m	
7	BS answers (DSD-RSP) to the release of a Dynamic service flow initiated by SS	6.3.14.9.5	m	

A.5.3.3.3 BS privacy functionalities—PMP

Table A.88—Major Privacy functionalities for BS

Item	Name	Reference	Status	Support
1	Does the BS perform Authorization and key exchange as per 7.2?	6.3.9.8	m	
2	Does the BS support Authorization Information messages?	6.3.9.8, 7.2.1	o	
3	Does the BS support receipt of Auth Request (PKM-REQ with *Code=4*)?	6.3.9.8, 7.2.1	m	
4	Does the BS validate the manufacturer's X.509 certificate received from the SS during the Authorization Request?	6.3.9.8, 7.2.1	m	
5	Does the BS check the SS cryptographic suite identifiers against those supported by BS?	6.3.9.8, 7.2.1	m	
6	Does the BS verify that the SS provides its Basic CID as part of the Authorization Request?	6.3.9.8, 7.2.1	m	
7	Does the BS support generation of Auth Reply (PKM-RSP with *Code=5*)?	6.3.9.8, 7.2.1	m	
8	Does the BS support two simultaneously active Aks?	6.3.9.8, 7.2.1	m	

Table A.89—PKM message encodings support

Item	Capability	Reference	Status	Support	Values Allowed	Values Suppor-ted
1	Display-string	11.9.1	o			
2	AUTH-Key	11.9.2	m			
3	TEK	11.9.3	m			
4	Key-Lifetime	11.9.4	m			
5	Key-Sequence-Number	11.9.5	m		AK:0-15 TEK:0-3	
6	HMAC-Digest	11.9.6	m			
7	SAID	11.9.7	m			
8	TEK-Parameters	11.9.8	m			
9	CBC-IV	11.9.9	m			
10	Error-Code	11.9.10	m		0-6	
11	CA-Certificate	11.9.11	m			
12	SS-Certificate	11.9.12	m			
13	Security-Capabilities	11.9.13	m			
14	Cryptographic-Suite	11.9.14	m		See next table	
15	Cryptographic-Suite-List	11.9.15	m			
16	Version	11.9.16	m		1	
17	SA-Descriptor	11.9.17	m			
18	SA-Type	11.9.18	m		0,1,2	
19	PKM Configuration Setting	11.9.19	m			

Table A.90—Cryptographic suites

Item	Capability	Reference	Status	Support	Value Allowed	Value Suppor-ted
1	No data encrypt, no data authent &3-DES 128	11.9.14	m		0x000001	
2	CBC-mode 56bit DES, no data authent &3-DES 128	11.9.14	m		0x010001	
3	No data encrypt, no data authent & RSA, 1024	11.9.14	m		0x000002	
4	CBC-mode 56bit DES, no data authent & RSA, 1024	11.9.14	m		0x010002	

A.5.4 List of PDUs and their directions

In the following PDU tables, status with m or o values are the only valid cases, according to the direction of the PDU. When not applicable to a given direction, status not applicable (n/a) is defined.

A.5.4.1 PDUs for PHY layer

A.5.4.1.1 PDUs for PHY layer in PMP topology

Prerequisite: A.3/1 --PMP topology
To be defined

A.5.4.2 PDUs for MAC layer

A.5.4.2.1 PDUs for MAC layer in PMP topology

Prerequisite: A.3/1 --PMP topology

A.5.4.2.1.1 PDUs for network entry and initialization in PMP

Table A.91—MAC PDUs for network entry and initialization in PMP

Item	PDU	BS sending/SS receiving			SS sending / BS receiving		
		Reference	Status	Support	Reference	Status	Support
1	DL-MAP	6.3.9.2	m			n/a	
2	DCD	6.3.9.2	m			n/a	
3	UL-MAP	6.3.9.3	m			n/a	
4	UCD	6.3.9.3	m			n/a	
5	RNG-REQ		n/a		6.3.9.5	m	
6	RNG-RSP	6.3.9.5	m			n/a	
7	SBC-REQ		n/a		6.3.9.7	m	
8	SBC-RSP	6.3.9.7	m			n/a	
9	PKM-REQ	-	n/a		6.3.9.8	m	
10	PKM-RSP	6.3.9.8	m		-	n/a	
11	REG-REQ	-	n/a		6.3.9.9	m	
12	REG-RSP	6.3.9.9	m		-	n/a	
13	DHCP discover		n/a		6.3.9.10	m	
14	DHCP offer	6.3.9.10	m			n/a	
15	DHCP request		n/a		6.3.9.10	m	
16	DHCP response	6.3.9.10	m			n/a	
17	Time of day request		n/a		6.3.9.11	m	
18	Time of day response	6.3.9.11	m			n/a	

NOTE—DHCP and Time of day messages are specified in IEEE Std 802.16-2004.

A.5.4.2.1.2 PDUs for service flows in PMP

Table A.92—PDUs for service flows in PMP

Item	PDU	BS sending/SS receiving			SS sending/BS receiving		
		Reference	Status	Support	Reference	Status	Support
1	DSA-REQ (create)	6.3.2.3.10	m		6.3.2.3.10	m	
2	DSA-RSP	6.3.2.3.11	m		6.3.2.3.11	m	
3	DSA-ACK	6.3.2.3.12	m		6.3.2.3.12	m	
4	DSC-REQ (change)	6.3.2.3.13	m		6.3.2.3.13	m	
5	DSC-RSP	6.3.2.3.14	m		6.3.2.3.14	m	
6	DSC-ACK	6.3.2.3.15	m		6.3.2.3.15	m	
7	DSD-REQ (delete)	6.3.2.3.16	m		6.3.2.3.16	m	
8	DSD-RSP	6.3.2.3.17	m		6.3.2.3.17	m	

A.5.4.2.1.3 PDUs for ARQ in PMP

Prerequisite: A19/3 --SS supports ARQ procedure
Or
Prerequisite: A.62/3 --BS supports ARQ procedure

Table A.93—PDUs for ARQ in PMP

Item	PDU	BS sending/SS receiving			SS sending/BS receiving		
		Reference	Status	Support	Reference	Status	Support
1	ARQ-feedback	6.3.4	m		6.3.4	m	
2	ARQ-discard	6.3.4	m		6.3.4	m	
3	ARQ-reset	6.3.4	m		6.3.4	m	
4	ARQ-ACK		n/a		6.3.4	m	

A.5.4.2.1.4 PDUs for miscellaneous capabilities in PMP

Table A.94—MAC PDUs for miscellaneous capabilities in PMP

Item	PDU	BS sending/SS receiving			SS sending/BS receiving		
		Reference	Status	Support	Reference	Status	Support
1	MCA-REQ	6.3.12	m			n/a	
2	MCA-RSP		n/a		6.3.12	m	
3	RES-CMD	6.3.2.3.22	m			n/a	
4	CLK-CMP	6.3.2.3.25	o			n/a	
5	DREG-REQ		n/a		6.3.2.3.43	m	
6	DREG-CMD	6.3.2.3.26	m			n/a	
7	DSX-RVD	6.3.2.3.27	m			n/a	
8	TFTP-CPLT		n/a		6.3.2.3.28	m	
9	TFTP-RSP	6.3.2.3.29	m			n/a	
10	REP-REQ	6.3.2.3.33	m			n/a	
11	REP-RSP		n/a		6.3.2.3.33	m	
12	FPC	6.3.2.3.34	m			n/a	
13	AAS-FBCK-REQ	6.3.2.3.40	c94-01			n/a	
14	AAS-FBCK–RSP	6.3.2.3.40	c94-01			n/a	
15	AAS-BEAM-select		n/a		6.3.2.3.41	c94-01	
16	AAS-BEAM-REQ	6.3.2.3.42	c94-01			n/a	
17	AAS-BEAM–RSP	6.3.2.3.42	c94-01			n/a	

c94-01 IF A.7/1 - if SS supports AAS mode (adaptive antenna)
and
IF A.6/2 or A.6/3 - if SS operates in FDD mode
THEN m - then mandatory
ELSE o - else optional in TDD mode
or
IF A.50/1- if BS supports AAS mode
and
IF A.50/2 or A.50/3- if BS operates in FDD mode
THEN m - then mandatory
ELSE o - else optional in TDD mode

ELSE n/a - else not applicable if no AAS support

A.5.4.2.1.5 PDUs for privacy in PMP

Table A.95—MAC privacy PDUs in PMP

Item	PDU	BS sending/SS receiving			SS sending/BS receiving		
		Reference	Status	Support	Reference	Status	Support
1	PKM-RSP SA Add (Code 3)	6.3.2.3.9	m		-	n/a	
2	PKM-REQ Auth Request (Code 4)	-	n/a		6.3.2.3.9	m	
3	PKM-RSP Auth Reply (Code 5)	6.3.2.3.9	m		-	n/a	
4	PKM-RSP Auth Reject (Code 6)	6.3.2.3.9	m		-	n/a	
5	PKM-REQ Key Request (Code 7)	-	n/a		6.3.2.3.9	m	
6	PKM-RSP Key Reply (Code 8)	6.3.2.3.9	m		-	n/a	
7	PKM-RSP Key Reject (Code 9)	6.3.2.3.9	m		-	n/a	
8	PKM-RSP Auth Invalid (Code 10)	6.3.2.3.9	m		-	n/a	
9	PKM-RSP TEK Invalid (Code 11)	6.3.2.3.9	m		-	n/a	
10	PKM-REQ Authent Info (Code 12)	-	n/a		6.3.2.3.9	m	

A.5.5 PDU fields

A.5.5.1 Fields of PDUs for PHY layer

To be defined.

A.5.5.2 Fields of PDUs for MAC layer

A.5.5.2.1 PDUs fields for MAC in PMP topology

A.5.5.2.1.1 DL-MAP

Table A.96—PDU: DL-MAP

Item	Parameter	Reference	Status	Support
1	Management Message type=2	6.3.2.3.2	m	
2	PHY Synchronization field	6.3.2.3.2	m	
3	DCD count	6.3.2.3.2	m	
4	Base station ID	6.3.2.3.2	m	
5	DL_MAP Information Element(s)	6.3.2.3.2	m	

A.5.5.2.1.2 DCD

Table A.97—PDU: DCD

Item	Parameter	Reference	Status	Support
1	Management Message type=1	6.3.2.3.1	m	
2	Downlink channel ID	6.3.2.3.1	m	
3	Configuration Change count	6.3.2.3.1	m	
4	TLV Encoded information see next DCD TLV table	6.3.2.3.1	m	
5	Downlink burst profile(s) see next DCD DL burst profile table	6.3.2.3.1	m	

Table A.98—DCD TLV

Item	Parameter	Reference	Status	Support
1	Downlink Burst profile	11.4.1 (Table 358)	m	
2	BS EIRP	11.4.1 (Table 358)	m	
3	TTG	11.4.1 (Table 358)	m	
4	RTG	11.4.1 (Table 358)	m	
5	$EIRxP_{\mathrm{IR,max}}$	11.4.1 (Table 358)	m	

Table A.99—DCD DL burst profile

Item	Capability	Reference	Status	Support
1	FEC Code Type	11.4.1 (Table 363)	m	
2	DIUC Mandatory exit Threshold	11.4.1 (Table 363)	m	
3	DIUC Mandatory entry Threshold	11.4.1 (Table 363)	m	

A.5.5.2.1.3 UCD

Table A.100—PDU: UCD

Item	Parameter	Reference	Status	Support
1	Management Message type=0	6.3.2.3.3	m	
2	Uplink channel ID	6.3.2.3.3	m	
3	Configuration Change count	6.3.2.3.3	m	
4	Ranging backoff start	6.3.2.3.3	m	
5	Ranging backoff End	6.3.2.3.3	m	
6	Request backoff start	6.3.2.3.3	m	
7	Request backoff End	6.3.2.3.3	m	
8	TLV Encoded information see next UCD TLV table	6.3.2.3.3	m	
9	Uplink burst profile(s) see next UCD UL burst profile table	6.3.2.3.3	m	

Table A.101—UCD TLV

Item	Parameter	Reference	Status	Support
1	Frequency	11.3.1 (Table 349)	m	
2	Contention-based Reservation Timeout	11.3.1 (Table 349)	m	
3	Initial ranging codes	11.3.1 (Table 353)	m	
4	Periodic ranging codes	11.3.1 (Table 353)	m	
5	Bandwidth request codes	11.3.1 (Table 353)	m	
6	Periodic ranging backoff start	11.3.1 (Table 353)	m	
7	Periodic ranging backoff end	11.3.1 (Table 353)	m	
8	Start of ranging codes group	11.3.1 (Table 353)	m	
9	Permutation base	11.3.1 (Table 353)	m	
10	UL allocated subchannels bitmap	11.3.1 (Table 353)	m	
11	Optimal permutation UL allocated subchannels bitmap	11.3.1 (Table 353)	c101-01	
12	Band AMC allocation threshold	11.3.1 (Table 353)	c101-02	
13	Band AMC release threshold	11.3.1 (Table 353)	c101-02	
14	Band AMC allocation timer	11.3.1 (Table 353)	c101-02	
15	Band AMC release timer	11.3.1 (Table 353)	c101-02	
16	Band status reporting MAX period	11.3.1 (Table 353)	o	
17	Band AMC retry timer	11.3.1 (Table 353)	c101-02	
18	Safety channel allocation threshold	11.3.1 (Table 353)	o	
19	Safety channel release threshold	11.3.1 (Table 353)	o	
20	Safety channel allocation timer	11.3.1 (Table 353)	o	
21	Safety channel release timer	11.3.1 (Table 353)	o	
22	Bin status reporting MAX period	11.3.1 (Table 353)	o	
23	Safety channel retry timer	11.3.1 (Table 353)	o	
24	H-ARQ ACK delay for UL burst	11.3.1 (Table 353)	c101-03	
25	CQICH Band AMC transition delay	11.3.1 (Table 353)	c101-02	

c101-01: IF A.50/4- if BS supports Optional PUSC
THEN m - then mandatory
ELSE n/a - else not applicable

c101-02: IF A.50/5- if BS supports AMC
THEN m - then mandatory
ELSE n/a - else not applicable

c101-03: IF A.50/6- if BS supports H-ARQ
THEN m - then mandatory
ELSE n/a - else not applicable

Table A.102—UCD UL burst profile

Item	Capability	Reference	Status	Support
1	FEC Code Type	11.3.1 (Table 356)	m	
2	Ranging data ratio	11.3.1 (Table 356)	m	
3	Normalized C/N override	11.3.1 (Table 356)	o	

A.5.5.2.1.4 UL-MAP

Table A.103—PDU: UL-MAP

Item	Parameter	Reference	Status	Support
1	Management Message type=3	6.3.2.3.4	m	
2	Uplink channel ID	6.3.2.3.4	m	
3	UCD count	6.3.2.3.4	m	
4	Allocation start time	6.3.2.3.4	m	
5	UL_MAP Information Element(s)	6.3.2.3.4	m	

A.5.5.2.1.5 RNG-REQ and RNG-RSP

Table A.104—PDU: RNG-REQ

Item	Parameter	Reference	Status	Support
1	Management Message type=4	6.3.2.3.5	m	
2	Downlink channel ID	6.3.2.3.5	m	
3	TLV Encoded information see next RNG-REQ TLV table	6.3.2.3.5	m	

Table A.105—RNG-REQ TLV

Item	Parameter	Reference	Status	Support
1	Requested Downlink Burst profile	6.3.2.3.5	m	
2	SS MAC address	6.3.2.3.5	c105-01	
3	Ranging anomalies	6.3.2.3.5	m	
4	MAC version	6.3.2.3.5	c105-01	
5	AAS broadcast capability	6.3.2.3.5	c105-02	

c105-01 IF Network Entry
THEN m - then mandatory
ELSE
IF Periodic Ranging
THEN n/a - not applicable
c105-02 IF A.7/1 - if SS supports AAS mode (adaptive antenna)
or
IF A.50/1- if BS supports AAS mode
Then o - then optional
Else n/a - else not applicable (if no AAS)

Table A.106—PDU: RNG-RSP

Item	Parameter	Reference	Status	Support
1	Management Message type=5	6.3.2.3.6	m	
2	Uplink channel ID	6.3.2.3.6	m	
3	TLV Encoded information see next RNG-RSP TLV table	6.3.2.3.6	m	

Table A.107—RNG-RSP TLV

Item	Parameter	Reference	Status	Support
1	Timing Adjust Information	6.3.2.3.6; 11.6	o	
2	Power Adjust Information	6.3.2.3.6; 11.6	o	
3	Ranging Status	6.3.2.3.6; 11.6	m	
4	DL Frequency Override	6.3.2.3.6; 11.6	o	
5	UL Channel ID Override	6.3.2.3.6; 11.6	o	
6	DL Operational Burst Profile	6.3.2.3.6; 11.6	o	
7	Basic CID	6.3.2.3.6; 11.6	o	
8	Primary Management CID	6.3.2.3.6; 11.6	o	
9	SS MAC Address	6.3.2.3.6; 11.6	o	
10	Frequency Adjust Information	6.3.2.3.6; 11.6	o	
11	AAS broadcast permission	6.3.2.3.6; 11.6	c107-01	
12	Ranging Code Attributes	6.3.2.3.6; 11.6	o	

c107-01 IF A.7/1 - if SS supports AAS mode (adaptive antenna)
or
IF A.50/1- if BS supports AAS mode
THEN m - then mandatory
Else n/a - else not applicable (if no AAS)

A.5.5.2.1.6 SBC-REQ and SBC-RSP

Table A.108—PDU: SBC-REQ

Item	Parameter	Reference	Status	Support
1	Management Message type=26	6.3.2.3.23	m	
2	TLV Encoded information see next SBC-REQ TLV table	6.3.2.3.23	m	

Table A.109—SBC-REQ TLV

Item	Parameter	Reference	Status	Support
1	Basic CID	6.3.2.3.23	m	
2	Physical Parameters supported	6.3.2.3.23	m	
3	Bandwidth Allocation Support	6.3.2.3.23	m	
4	PKM flow control	11.7.8.6	m	
5	Authorization policy support	11.7.8.7	m	
6	Supported security associations	11.7.8.8	m	

Table A.110—PDU: SBC-RSP

Item	Parameter	Reference	Status	Support
1	Management Message type=27	6.3.2.3.24	m	
2	TLV Encoded information see next SBC-RSP TLV table	6.3.2.3.24	m	

Table A.111—SBC-RSP TLV

Item	Parameter	Reference	Status	Support
1	CID	6.3.2.3.24	m	
2	Physical Parameters supported	6.3.2.3.24	m	
3	Bandwidth Allocation Support	6.3.2.3.24	m	

A.5.5.2.1.7 DHCP messages

Comments on “Establish IP connectivity” PDUs: DHCP discover, DHCP offer, DHCP request, and DHCP response are defined by IETF RFC2131.

A.5.5.2.1.8 Time of day messages

Comments on “Establish Time of day” PDUs: Time of day request and Time of day response are defined by IETF RFC868.

A.5.5.2.1.9 ARQ messages

Prerequisite: A19/3 --SS supports ARQ procedure
Or
Prerequisite: A.62/3 --BS supports ARQ procedure

Table A.112—PDU ARQ feedback message

Item	Parameter	Reference	Status	Support
1	Management Message type=33	6.3.2.3.30	m	
2	ARQ feedback payload: one or several ARQ feedback IE(s) see next ARQ feedback IE table	6.3.2.3.30	m	

Table A.113—ARQ feedback Information elements

Item	Parameter	Reference	Status	Support
1	CID	6.3.4.2	m	
2	last	6.3.4.2	m	
3	ACK type	6.3.4.2	m	
4	BSN	6.3.4.2	m	
5	Number of ACK maps	6.3.4.2	m	
6	ACK MAP(s)	6.3.4.2	m	

Table A.114—ARQ discard message

Item	Parameter	Reference	Status	Support
1	Management Message type=34	6.3.2.3.31	m	
2	Connection ID	6.3.2.3.31	m	
3	Fragmentation Sequence Number	6.3.2.3.31	m	

Table A.115—PDU: ARQ reset message

Item	Parameter	Reference	Status	Support
1	Management Message type=35	6.3.2.3.32	m	
2	Connection ID	6.3.2.3.32	m	
3	Type	6.3.2.3.32	m	

Table A.116—PDU: ARQ ACK message

Item	Parameter	Reference	Status	Support
1	ACK type	6.3.2.3.41	m	
2	BSN	6.3.2.3.41	m	
3	Number of ACK maps	6.3.2.3.41	m	
4	ACK maps	6.3.2.3.41	m	

A.5.5.2.1.10 MCA-REQ and MCA-RSP

Table A.117—PDU: MCA-REQ

Item	Parameter	Reference	Status	Support
1	Management Message type=21	6.3.2.3.18	m	
2	Transaction ID	6.3.2.3.18	m	
3	TLV encoded information	6.3.2.3.18	m	

Table A.118—MCA-REQ TLV

Item	Parameter	Reference	Status	Support
1	CID	6.3.2.3.18	m	
2	Transaction ID	6.3.2.3.18	m	
3	Multicast CID	6.3.2.3.18	m	
4	Assignment	6.3.2.3.18	m	

Table A.119—PDU: MCA-RSP

Item	Parameter	Reference	Status	Support
1	Management Message type=22	6.3.2.3.19	m	
2	Transaction ID	6.3.2.3.19	m	
3	Confirmation Code	6.3.2.3.19	m	

A.5.5.2.1.11 RES-CMD

Table A.120—PDU: RES-CMD

Item	Parameter	Reference	Status	Support
1	Management Message type=25	6.3.2.3.22	m	
2	TLV encoded information	6.3.2.3.22	m	

Table A.121—RES-CMD TLV

Item	Parameter	Reference	Status	Support
1	HMAC tuple	6.3.2.3.22	m	

A.5.5.2.1.12 CLK-CMP

Prerequisite: A.18/12: SS supports Managed mode

Table A.122—PDU: CLK-CMP

Item	Parameter	Reference	Status	Support
1	Management Message type=28	6.3.2.3.25	m	
2	Clock count	6.3.2.3.25	m	
3	Clock Id	6.3.2.3.25	m	
4	Sequence number	6.3.2.3.25	m	
5	Clock comparison value	6.3.2.3.25	m	

A.5.5.2.1.13 DREG-REQ and DREG-CMD

Table A.123—PDU: DREG-REQ

Item	Parameter	Reference	Status	Support
1	Management Message type=49	6.3.2.3.43	m	
2	De-registration request code	6.3.2.3.43	m	
3	TLV encoded information	6.3.2.3.43	m	

Table A.124—DREG-REQ TLV

Item	Parameter	Reference	Status	Support
1	HMAC tuple	6.3.2.3.43	m	

Table A.125—PDU: DREG-CMD

Item	Parameter	Reference	Status	Support
1	Management Message type=29	6.3.2.3.26	m	
2	action code	6.3.2.3.26	m	
3	TLV encoded information	6.3.2.3.26	m	

Table A.126—DREG-CMD TLV

Item	Parameter	Reference	Status	Support
1	HMAC tuple	6.3.2.3.26	m	

A.5.5.2.1.14 DSX-RVD

Table A.127—PDU: DSX-RVD

Item	Parameter	Reference	Status	Support
1	Management Message type=30	6.3.2.3.27	m	
2	Transaction ID	6.3.2.3.27	m	
3	Confirmation Code	6.3.2.3.27	m	

A.5.5.2.1.15 FTP-CPLT and TFTP-RSP

Prerequisite: A.18/12: SS supports Managed mode

Table A.128—PDU: TFTP-CPLT

Item	Parameter	Reference	Status	Support
1	Management Message type=31	6.3.2.3.28	m	
2	TLV encoded information	6.3.2.3.28	m	

Table A.129—TFTP-CPLT TLV

Item	Parameter	Reference	Status	Support
1	HMAC tuple	6.3.2.3.28	m	

Table A.130—PDU: TFTP-RSP

Item	Parameter	Reference	Status	Support
1	Management Message type=32	6.3.2.3.29	m	

A.5.5.2.1.16 REP-REQ and REP-RSP

Table A.131—PDU: REP-REQ

Item	Parameter	Reference	Status	Support
1	Management Message type=36	6.3.2.3.33	m	
2	Report request TLVs	6.3.2.3.33	m	

Table A.132—REP-REQ TLV for report request

Item	Parameter	Reference	Status	Support
1	Report type	11.11	m	
2	Channel number	11.11	m	

Table A.133—PDU: REP-RSP

Item	Parameter	Reference	Status	Support
1	Management Message type=37	6.3.2.3.33	m	
2	Report response TLVs	6.3.2.3.33	m	

Table A.134—REP-RSP TLV for report

Item	Parameter	Reference	Status	Support
1	Channel number	11.12	m	
2	Start frame	11.12	m	
3	duration	11.12	m	
4	Basic report	11.12	m	
5	CINR report	11.12	m	
6	RSSI report	11.12	m	

A.5.5.2.1.17 AAS-FBCK-REQ and AAS-FBCK-RSP

Prerequisite: -A.7/1 --SS supports AAS mode (adaptive antenna
Or
Prerequisite: A.50/1 --BS supports AAS mode

Table A.135—PDU: AAS-FBCK-REQ

Item	Parameter	Reference	Status	Support
1	Management Message type=44	6.3.2.3.40	m	
2	Frame number	6.3.2.3.40	m	
3	Number of frames	6.3.2.3.40	m	
4	Measurement data type	6.3.2.3.40	m	
5	Feedback request counter	6.3.2.3.40	m	
6	Frequency measurement resolution	6.3.2.3.40	m	

Table A.136—PDU: AAS-FBCK-RSP

Item	Parameter	Reference	Status	Support
1	Management Message type=45	6.3.2.3.40	m	
2	Feedback request number	6.3.2.3.40	m	
3	Real (Frequency value)	6.3.2.3.40	m	
4	Imaginary (Frequency value)	6.3.2.3.40	m	

Comments: Set of Real and Imaginary Frequency values for each frequency defined.

A.5.5.2.1.18 AAS-BEAM messages

Prerequisite: A.7/1 --SS supports AAS mode (adaptive antenna
Or
Prerequisite: A.50/1 --BS supports AAS mode

Table A.137—PDU: AAS-Beam-Select

Item	Parameter	Reference	Status	Support
1	Management Message type=46	6.3.2.3.41	m	
2	AAS beam direction index	6.3.2.3.41	m	

Table A.138—PDU: AAS-BEAM-REQ

Item	Parameter	Reference	Status	Support
1	Management Message type=47	6.3.2.3.42	m	
2	Frame number	6.3.2.3.42	m	
3	Feedback request number	6.3.2.3.42	m	
4	Measurement report type	6.3.2.3.42	m	
5	Resolution parameter	6.3.2.3.42	m	
6	Beam bit mask	6.3.2.3.42	m	

Table A.139—PDU: AAS-BEAM-RSP

Item	Parameter	Reference	Status	Support
1	Management Message type=48	6.3.2.3.43	m	
2	Frame number	6.3.2.3.43	m	
3	Feedback request number	6.3.2.3.43	m	
4	Measurement report type	6.3.2.3.43	m	
5	Resolution parameter	6.3.2.3.43	m	
6	Beam bit mask	6.3.2.3.43	m	
7	AAS_BEAM_REP_IE	6.3.2.3.43	m	
8	RSSI mean value	6.3.2.3.43	m	
9	CINR mean value	6.3.2.3.43	m	

A.5.5.2.1.19 FPC

Table A.140—PDU: FPC

Item	Parameter	Reference	Status	Support
1	Management Message type=38	6.3.2.3.34	m	
2	Number of stations	6.3.2.3.34	m	
3	Basic CID	6.3.2.3.34	m	
4	Power adjust	6.3.2.3.34	m	

Comments: Set of Basic CID and Power adjust values for each station defined.

A.5.5.2.1.20 REG-REQ and REG-RSP

Table A.141—Registration request (REG-REQ)

Item	Parameter	Reference	Status	Support
1	Management Message type=6	6.3.2.3.8	m	
2	TLV Encoded Information	6.3.2.3.8	m	

Table A.142—PDU: REG-REQ TLV (PMP)

Prerequisite: A.3/1 --PMP topology
Prerequisite: A.143/2 --REG-REQ TLV

Item	Parameter	Reference	Status	Support
1	IP version	11.7.4	m	
2	Vendor ID Encoding	11.1.5	o	
3	Vendor specific information	11.1.6	o	
4	SS Capabilities Encodings	11.7.8	o	
5	Convergence Sublayer Capabilities	11.7.7	o	
6	ARQ parameters	11.7.1	o	

Table A.143—SS capabilities encoding and values

Item	SS Capability	Reference	Status	Support	Value	
					Allowed range	Supported
1	ARQ support	11.7.8.1	m		0-1	
2	DSx flow control	11.7.8.2	m		0-255	
3	MAC CRC support	11.7.8.3	m		0-1	
4	MCA flow control	11.7.8.4	m		0-255	
5	Multicast polling group	11.7.8.5	m		0-255	

Table A.144—PDU: Registration response (REG-RSP)

Prerequisite: A.91/12 --REG-RSP

Item	Parameter	Reference	Status	Support
1	Management Message type=7	6.3.2.3.8	m	
2	Response	6.3.2.3.8	m	
3	TLV Encoded Information see next table REG-RSP TLV	6.3.2.3.8	m	

Table A.145—PDU: REG-RSP TLV (PMP)

Item	Parameter	Reference	Status	Support
1	CID	6.3.2.3.8	m	
2	Response (value 0 or 1)	6.3.2.3.8	m	
3	Secondary Management CID	11.7.5	c145-01	
4	HMAC Tuple	11.1.2	m	
5	SS Capabilities	11.7.8	m	
6	IP version	11.7.4	m	
7	Vendor ID Encoding	11.1.5	o	
8	Vendor-specific information	11.1.6	o	
9	ARQ parameters	11.7.1	m	
10	IP management mode	11.7.3	m	
11	SS management support	6.3.2.3.8	m	

c145-01 IF A.18/12 \- if SS supports Managed Mode
THEN m - then mandatory
ELSE n/a - else not applicable

A.5.5.2.1.21 PKM-REQ and PKM-RSP messages

Prerequisite: A.3/1 --PMP topology

Table A.146—PDU: PKM request (PKM-REQ)

Prerequisite: A.91/9 -- PKM-REQ

Item	Parameter	Reference	Status	Support
1	Management Message type=9	6.3.2.3.9	m	
2	Code	6.3.2.3.9	m	
3	PKM Identifier	6.3.2.3.9	m	
4	TLV Encoded Attributes	6.3.2.3.9	m	

Table A.147—PDU: PKM reply (PKM-RSP)

Prerequisite: A.91/10 --PKM-RSP

Item	Parameter	Reference	Status	Support
1	Management Message type=10	6.3.2.3.9	m	
2	Code	6.3.2.3.9	m	
3	PKM Identifier	6.3.2.3.9	m	
4	TLV Encoded Attributes	6.3.2.3.9	m	

Table A.148—PDU: TLV attributes (SA Add)

Prerequisite: A.95/1 --SA Add (Code 3)

Item	Parameter	Reference	Status	Support
1	Key Sequence Number	6.3.2.3.9.1	m	
2	SA Descriptors	6.3.2.3.9.1	m	
3	HMAC digest	6.3.2.3.9.1	m	

Table A.149—PDU: TLV attributes (Auth Request)

Prerequisite: A.148/4 --PKM-REQ TLV
Prerequisite: A.95/2 --Auth Request (Code 4)

Item	Parameter	Reference	Status	Support
1	SS-Certificate	6.3.2.3.9.2	m	
2	Security Capabilities	6.3.2.3.9.2	m	
3	SAID	6.3.2.3.9.2	m	

Table A.150—PDU: TLV attributes (Auth Reply)

Prerequisite: A.149/4 --PKM-RSP TLV
Prerequisite: A.95/3 --Auth Reply (Code 5)

Item	Parameter	Reference	Status	Support
1	AUTH-Key	6.3.2.3.9.3	m	
2	Key-Lifetime	6.3.2.3.9.3	m	
3	Key-Sequence-Number	6.3.2.3.9.3	m	
4	SA Descriptor	6.3.2.3.9.3	m	
5	PKM configuration	6.3.2.3.9.3	m	

Table A.151—PDU: TLV attributes (Auth Reject)

Prerequisite: A.149/4 --PKM-RSP TLV
Prerequisite: A.95/4 --Auth Reject (Code 6)

Item	Parameter	Reference	Status	Support
1	Error code	6.3.2.3.9.4	m	
2	Display-String	6.3.2.3.9.4	o	

Table A.152—PDU: TLV attributes (Key Request)

Prerequisite: A.148/4 --PKM-REQ TLV
Prerequisite: A.95/5 --Key Request (Code 7)

Item	Parameter	Reference	Status	Support
1	Key-Sequence-Number	6.3.2.3.9.5	m	
2	HMAC-Digest	6.3.2.3.9.5	m	
3	SAID	6.3.2.3.9.5	m	

Table A.153—PDU: TLV attributes (Key Reply)

Prerequisite: A.149/4 --PKM-RSP TLV
Prerequisite: A.95/6 --Key Reply (Code 8)

Item	Parameter	Reference	Status	Support
1	Key-Sequence-number	6.3.2.3.9.6	m	
2	HMAC-Digest	6.3.2.3.9.6	m	
3	SAID	6.3.2.3.9.6	m	
4	TEK-Parameters	6.3.2.3.9.6	m	

Table A.154—PDU: TLV attributes (Key Reject)

Prerequisite: A.149/4 --PKM-RSP TLV
Prerequisite: A.95/7 --Key Reject (Code 9)

Item	Parameter	Reference	Status	Support
1	Key-Sequence-number	6.3.2.3.9.7	m	
2	HMAC-Digest	6.3.2.3.9.7	m	
3	SAID	6.3.2.3.9.7	m	
4	Error-code	6.3.2.3.9.7	m	

Table A.155—: TLV attributes (Auth Invalid)

Prerequisite: A.149/4 --PKM-RSP TLV
Prerequisite: A.95/8 --Auth Invalid (Code 10)

Item	Parameter	Reference	Status	Support
1	Error-code	6.3.2.3.9.8	m	
2	Display-String	6.3.2.3.9.8	m	

Table A.156—PDU:TLV attributes (TEK Invalid)

Prerequisite: A.149/4 --PKM-RSP TLV
Prerequisite: A.95/9 --TEK Invalid (Code 11)

Item	Parameter	Reference	Status	Support
1	Key-Sequence-number	6.3.2.3.9.9	m	
2	HMAC-Digest	6.3.2.3.9.9	m	
3	SAID	6.3.2.3.9.9	m	
4	Error-code	6.3.2.3.9.9	m	
5	Display-String	6.3.2.3.9.9	o	

Table A.157—PDU: TLV attributes (Authentication information)

Prerequisite: A.148/4 --PKM-REQ TLV
Prerequisite: A.95/10 --Authent Info

Item	Parameter	Reference	Status	Support
1	CA-Certificate	6.3.2.3.9.10	m	

A.5.5.2.1.22 DSA-REQ, DSA-RSP, and DSA-ACK messages

Table A.158—PDU: DSA-REQ

Item	Parameter	Reference	Status	Support
1	Management Message type=11	6.3.2.3.10	m	
2	Transaction ID	6.3.2.3.10	m	
3	TLV Encoded Information see next table: DSA-REQ TLV	6.3.2.3.10	m	

Table A.159—DSA-REQ parameter families

Item	Parameter	Reference	Status	Support
1	Service flow parameters (see Table A.160)	6.3.2.3.10 11.13	m	
2	Convergence sublayer parameter encodings	6.3.2.3.10 11.13.19	m	
3	HMAC tuple	6.3.2.3.10	m	

Table A.160—DSA-REQ TLV for service flow parameters

Item	Parameter	Reference	Status	Support
1	Service flow identifier - SFID	11.13.1	m	
2	CID	11.13.2	m	
3	Service class name	11.13.3	m	
4	Service flow error parameter set	11.13.4	n/a	
5	QOS parameter set type	11.13.5	m	
6	Traffic priority	11.13.6	m	
7	Maximum sustained traffic rate	11.13.7	m	
8	Maximum traffic burst	11.13.8	m	
9	Minimum reserved traffic rate	11.13.9	m	
10	Minimum tolerable traffic rate	11.13.10	m	
11	Vendor specific QOS parameters	11.13.11	m	
12	Service flow scheduling type	11.13.12	m	
13	Request/transmission policy	11.13.13	m	
14	Tolerated jitter	11.13.14	m	
15	Maximum latency	11.13.15	m	
16	Fixed length versus variable length SDU indicator	11.13.16	m	
17	SDU size	11.13.17	m	
18	Target SAID	11.13.18	m	
19	ARQ enable	11.13.19	c160-01	
20	ARQ_WINDOW_SIZE	11.13.19	c160-01	
21	ARQ_TX_delay	11.13.19	c160-01	
22	ARQ_RX_delay	11.13.19	c160-01	
23	ARQ_BLOCK_LIFETIME	11.13.19	c160-01	
24	ARQ_SYNC_LOSS	11.13.19	c160-01	
25	ARQ_DELIVER_IN_ORDER	11.13.19	c160-01	
26	ARQ_PURGE_TIMEOUT	11.13.19	c160-01	
27	ARQ_BLOCK_SIZE	11.13.19	c160-01	
28	Maximum fragment length	11.13.20	m	
29	CS specification	11.13.19	m	

c160-01: IF A19/3- if SS supports ARQ procedure
or
IF A.62/3- if BS supports ARQ procedure
THEN m - then mandatory
ELSE n/a - else not applicable

Table A.161—DSA-REQ TLV for packet convergence sublayer: packet classification rule parameter

Item	Parameter	Reference	Status	Support
1	HMAC tuple	6.3.2.3.10	m	

Table A.162—PDU: DSA-RSP

Item	Parameter	Reference	Status	Support
1	Management Message type=12	6.3.2.3.11	m	
2	Transaction ID	6.3.2.3.11	m	
3	Confirmation code	6.3.2.3.11	m	
4	TLV Encoded Information see next table: DSA-RSP TLV	6.3.2.3.11	m	

Table A.163—DSA-RSP parameter families

Item	Parameter	Reference	Status	Support
1	Service flow parameters see Table A.160	6.3.2.3.11 11.13	m	
2	Convergence sublayer parameter encodings	6.3.2.3.11 11.13.21	m	

Table A.164—DSA-RSP TLV for service flow parameters

Item	Parameter	Reference	Status	Support
1	HMAC tuple	6.3.2.3.11	m	

Table A.165—PDU: DSA-ACK

Item	Parameter	Reference	Status	Support
1	Management Message type=13	6.3.2.3.12	m	
2	Transaction ID	6.3.2.3.12	m	
3	Confirmation code	6.3.2.3.12	m	
4	TLV Encoded Information see next table: DSA-ACK TLV	6.3.2.3.12	m	

Table A.166—DSA-ACK parameter families

Item	Parameter	Reference	Status	Support
1	Service flow error set	6.3.2.3.12 11.13.4	m	

Table A.167—DSA-ACK TLV

Item	Parameter	Reference	Status	Support
1	HMAC tuple	6.3.2.3.12		

A.5.5.2.1.23 DSC-REQ, DSC-RSP, and DSC-ACK messages

Table A.168—PDU: DSC-REQ

Item	Parameter	Reference	Status	Support
1	Management Message type=14	6.3.2.3.13	m	
2	Transaction ID	6.3.2.3.13	m	
3	TLV Encoded Information see next table: DSC-REQ TLV	6.3.2.3.13	m	

Table A.169—DSC-REQ parameter families

Item	Parameter	Reference	Status	Support
1	Service flow parameters	6.3.2.3.13 11.13	m	

Table A.170—DSC-REQ TLV

Item	Parameter	Reference	Status	Support
1	HMAC tuple	6.3.2.3.13	m	

Table A.171—PDU: DSC-RSP

Item	Parameter	Reference	Status	Support
1	Management Message type=15	6.3.2.3.14	m	
2	Transaction ID	6.3.2.3.14	m	
3	Confirmation code	6.3.2.3.14	m	
4	TLV Encoded Information see next table: DSC-RSP TLV	6.3.2.3.14	m	

Table A.172—DSC-RSP parameter families

Item	Parameter	Reference	Status	Support
1	Service flow parameters	6.3.2.3.14 11.13	m	
2	Convergence sublayer parameter encodings	6.3.2.3.14 11.13.21	m	

Table A.173—DSC-RSP TLV

Item	Parameter	Reference	Status	Support
1	HMAC tuple	6.3.2.3.14	m	

Table A.174—PDU: DSC-ACK

Item	Parameter	Reference	Status	Support
1	Management Message type=16	6.3.2.3.15	m	
2	Transaction ID	6.3.2.3.15	m	
3	Confirmation code	6.3.2.3.15	m	
4	TLV Encoded Information see next table: DSC-ACK TLV	6.3.2.3.15	m	

Table A.175—DSC-ACK parameter families

Item	Parameter	Reference	Status	Support
1	Service flow error set	6.3.2.3.15 11.13.4	m	

Table A.176—DSC-ACK TLV

Item	Parameter	Reference	Status	Support
1	HMAC tuple	6.3.2.3.15	m	

A.5.5.2.1.24 DSD-REQ and DSD-RSP messages

Table A.177—PDU: DSD-REQ

Item	Parameter	Reference	Status	Support
1	Management Message type=17	6.3.2.3.16	m	
2	Transaction ID	6.3.2.3.16	m	
3	Service flow ID	6.3.2.3.16	m	
4	TLV Encoded Information see next table: DSD-REQ TLV	6.3.2.3.16	m	

Table A.178—DSD-REQ TLV

Item	Parameter	Reference	Status	Support
1	HMAC tuple	6.3.2.3.16	m	

Table A.179—PDU: DSD-RSP

Item	Parameter	Reference	Status	Support
1	Management Message type=18	6.3.2.3.17	m	
2	Transaction ID	6.3.2.3.17	m	
3	Confirmation code	6.3.2.3.17	m	
4	Service flow ID	6.3.2.3.17	m	
5	TLV Encoded Information see next table: DSD-RSP TLV	6.3.2.3.17	m	

Table A.180—DSD-RSP TLV

Item	Parameter	Reference	Status	Support
1	HMAC tuple	6.3.2.3.17	m	

A.5.6 Parameters and timers

Table A.181—SS timers MAC layer - PMP

Item	Timer name MAC layer	Reference	Status	Support	Value	
					Allowed range	Supported
1	T1	10.1	m		<= DCD interval	
2	T2	10.1	m		<= 5 ranging interval	
3	T3	10.1	m		<= 200 ms	
4	T4	10.1	m		30-35 s	
5	T6	10.1	m		<= 3 s	
6	T7	10.1	m		<= 1 s	
7	T8	10.1	m		<= 300 ms	
8	T10	10.1	m		<= 3 s	
9	T12	10.1	m		<= 5 UCD interval	
10	T14	10.1	m		<= 200 ms	
11	T18	10.1	m		50 ms <= T18 << T9	
12	T20	10.1	m		>= 2 ms	
13	T21	10.1	m		<= 10 s	
14	T22	10.1	c183-01		<= 500 ms	

c183-01: IF A19/3-- if SS supports ARQ procedure
THEN m - then mandatory
ELSE n/a - else not applicable

Table A.182—Privacy (PKM) related timers

Item	Timer name	Reference	Status	Support	Value	
					Allowed range	Supported
1	AK Lifetime (PKM)	10.2	m		c184-01	
2	TEK Lifetime (PKM)	10.2	m		c184-02	
3	Authorize Wait Timeout (PKM)	10.2	m		2-30s	
4	Reauthorize Wait Timeout (PKM)	10.2	m		2-30s	
5	Authorization Grace Time (PKM)	10.2	m		c184-03	
6	Operational Wait Timeout (PKM)	10.2	m		1-10s	
7	Rekey Wait Timeout (PKM)	10.2	m		1-10s	
8	TEK Grace Time (PKM)	10.2	m		c184-04	
9	Authorize Reject Wait Timeout (PKM)	10.2	m		10-600s	

c184-01: IF (test mode) THEN 5 mn ELSE 1 day..70 days
c184-02: IF (test mode) THEN 3 mn ELSE 30 mn..7 days
c184-03: IF (test mode) THEN 60s ELSE 5mn..35 days
c184-04:I IF (test mode) THEN 60s ELSE 5 mn..3.5 days

Comments: The TEK Grace Time shall be less than half the TEK Lifetime.

Table A.183—BS timers MAC layer - PMP

Item	Timer name MAC layer	Reference	Status	Support	Value	
					Allowed range	Supported
1	T5	10.1	m		<= 2 s	
2	T7	10.1	m		<= 1 s	
3	T8	10.1	m		<= 300 ms	
4	T9	10.1	m		>= 300 ms	
5	T10	10.1	m		<= 3 s	
6	T13	10.1	m		>= 15 mn	
7	T15	10.1	m		>= 20 ms	
8	T17	10.1	m		>= 5 mn	
9	T22	10.1	c185-01		<= 500 ms	
10	T27	10.1	m		>= 10 ms	

c185-01: IF A.62/3 - if BS supports ARQ procedure
THEN m - then mandatory
ELSE n/a - else not applicable

A.6 Protocol ICS for WirelessMAN OFDM

The PICS for Part 4: Protocol Implementation Conformance Statement (PICS) Proforma for Frequencies below 11 GHz shall be according to ETSI TS 102 385-1.