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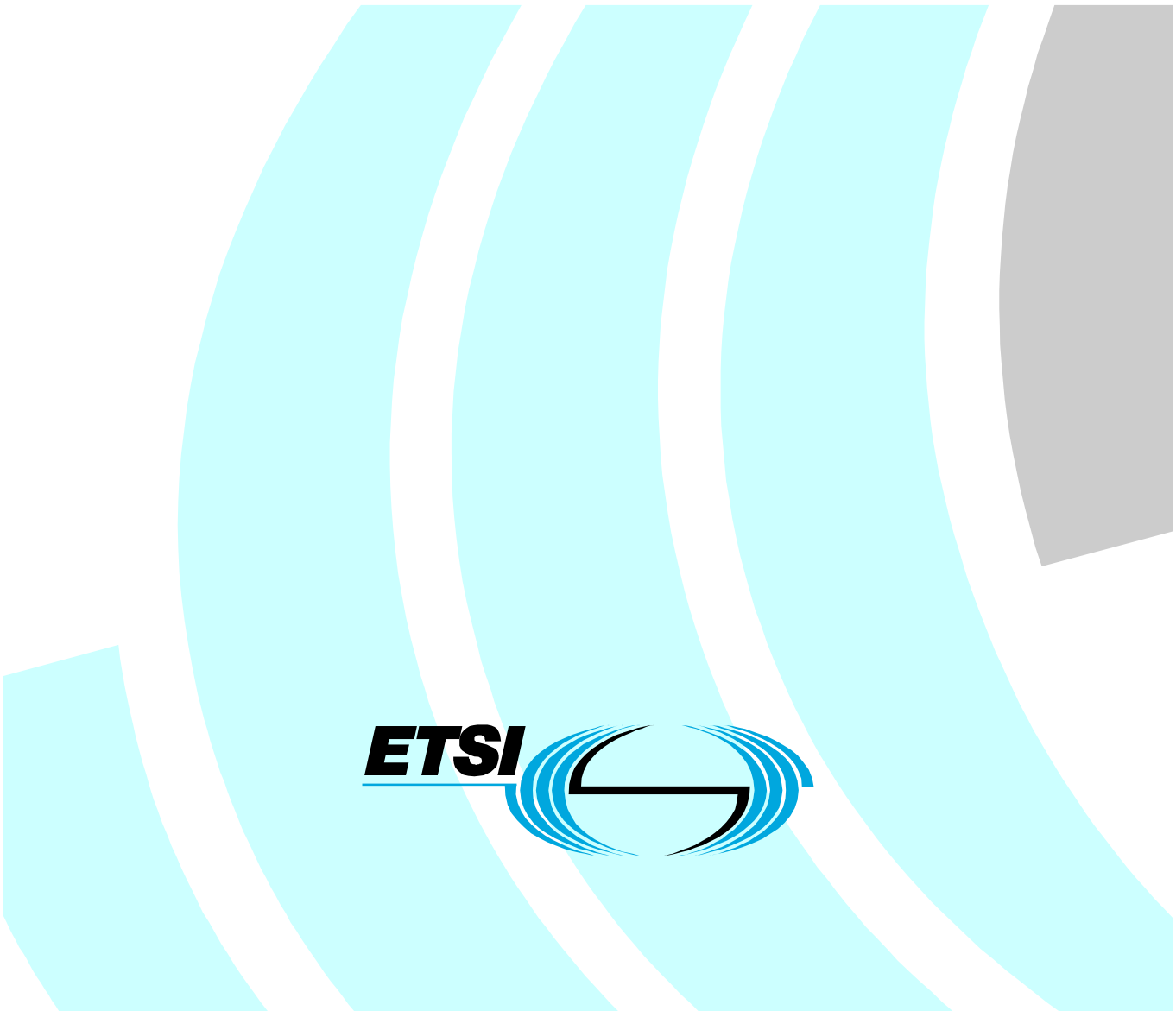
Technical Specification

Broadband Radio Access Networks (BRAN);
HiperMAN;
Conformance testing for the Data Link Control Layer (DLC);
Part 1: Protocol Implementation
Conformance Statement (PICS) proforma



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Contents

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Foreword

This Technical Specification (TS) has been produced by ETSI Technical Comittee Broadband Radio Access Networks (BRAN) with assistance of ETSI Protocol & Testing Competence Centre (PTCC).

The present document describes the Protocol Implementation Conformance Statement (PICS) for the Data Link Control Layer - DLC of High PERformance Radio Metropolitan Area Network (HiperMAN), which operate on frequencies below 11 GHz.

The present document is part 1 of a multi-part deliverable covering Conformance testing for the Data Link Control Layer (DLC), as identified below:

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

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

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

1 Scope

The present document specifies the Protocol Implementation Conformance Statement (PICS) for the Data Link Control Layer - DLC of HiperMAN per ISO/IEC Standard 9646-7 [5], ITU-T Recommendation X.296 [6] and ETR 212 [7] for conformance of HiperMAN compliant systems.

2 References

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

- References are either specific (identified by date of publication and/or edition number or version number) or non-specific.
- For a specific reference, subsequent revisions do not apply.
- For a non-specific reference, the latest version applies.

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

[1] ETSI TS 102 177 (V1.2.1): "Broadband Radio Access Networks (BRAN); HiperMAN; Physical (PHY) Layer".

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

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

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

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

[6] ITU-T Recommendation X.296: "OSI conformance testing methodology and framework for protocol Recommendations for ITU-T applications - Implementation conformance statements".

[7] ETSI ETR 212: "Methods for Testing and Specification (MTS); Implementation Conformance Statement (ICS) proforma style guide".

[8] ETSI TS 102 210: "Broadband Radio Access Networks (BRAN); HIPERMAN; System profiles".

[9] IETF RFC 2131: "Dynamic Host Configuration Protocol".

[10] IETF RFC 868: "Time Protocol".

3 Definitions, symbols and abbreviations

3.1 Definitions

For the purposes of the present document, the terms and definitions given in [1] to [5] apply.

3.2 Symbols

For the purposes of the present document, the following symbols apply:

BW	Nominal channel bandwidth (MHz)
m	CID range divider
$P_{TX,max}$	Maximum mean transmit power at the antenna port (dBm)
T_b	Useful OFDM symbol time (s)
T_F	Frame duration (ms)
T_g	OFDM symbol guard time or CP time (s)
T_s	OFDM symbol time (s)

3.3 Abbreviations

For the purposes of the present document, the abbreviations given in [1] to [3] and the following apply:

ATM	Asynchronous Transfer Mode
BS	Base Station
DL	DownLink
IUT	Implementation under test
PICS	Protocol Implementation Conformance Statement
SS	Subscriber Station
SUT	System Under Test
UL	UpLink

4 Conformance to this PICS Proforma Specification

If it claims to conform to the present document, 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 which conforms to the present document shall be a conforming PICS proforma completed in accordance with the guidance for completion given in clause A.1.

Annex A (normative): Protocol ICS (PICS) for HiperMAN

A.1 Guidance for completing PICS Proforma

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 defined in [1] and [2] (which mandates requirements defined in [3]) may provide information about the implementation in a standardized manner. The PICS proforma does not cover every possible compliant HiperMAN implementation, but only those implementations that are compliant with the system profiles as defined in TS 102 210 [8].

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

- guidance for completing the PICS proforma;
- identification and implementation;
- identification of the standard;
- global statement of conformance;
- roles;
- Subscriber Station (SS);
- Base Station (BS).

A.1.2 Abbreviations and Conventions

Item column

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

Capability column

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

Reference column

- The reference column indicates the clause of [1], [2], [3] from which the requirement for the capability is derived.

Status column

- The following notations, defined in [5], 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 which 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 which 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 [5], 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).

If this PICS proforma is completed in order to describe a multiple profile implementation, it may be necessary to answer that a capability is supported for one profile and not supported for another. In that case, the supplier shall enter a unique reference to a conditional expression, preceded by "?" (e.g. ?3). This expression shall be given in the space provided for comments at the bottom of the table. It uses the predicates defined in [5], each of which refers to a single profile or a family of profiles and which takes the value TRUE if and only if that profile is to be used.

EXAMPLE: ?3: If profM1 then Y else N

NOTE: As stated in [5], support for a received PDU requires the ability to parse all valid parameters of that PDU. Supporting a PDU while having no ability to parse a valid parameter is non-conformant. Support for a parameter on a PDU means that the semantics of that parameter are supported.

Values allowed column

- The values allowed column is only used when necessary in a table. It contains the type, the list, the range, or the length of values allowed. 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 allowed 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 which 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:	Table A.5/4 is the reference to the answer of item 4 in table A.5.
Example:	Table 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 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 clause A.1.2.

However, tables related to Subscriber Station shall only be completed for Subscriber Station (SS) implementations, and tables related to Base Station shall only be filled in for Base Station implementations.

If necessary, the supplier may provide additional comments in 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 so as 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 (MM/DD/YYYY):	

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 Nr.:	
Fax Nr:	
E-mail address:	
Additional information:	

A.2.5 Client (if different from product supplier)

Name:	
Address:	
Telephone Nr.:	
Fax Nr:	
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:	
Address:	
Telephone Nr.:	
Fax Nr:	
E-mail address:	
Additional information:	

A.3 Identification of the standard

This PICS proforma applies to the ETSI HiperMAN standard consisting of the following normative references:

- HiperMAN Physical Layer: [1].
- HiperMAN Data Logical Control Layer: [2] which normatively references [3].

A.4 Global statement of conformance

Are all mandatory capabilities implemented? (Yes/No)	

NOTE: Answering "No" to this question indicates non-conformance to the HiperMAN standard. 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 Roles

Table A.1: Roles

Item	Role	Reference	Status	Support
1	**Subscriber Station (SS)**	[3]	Oa.1	
2	**Base Station (BS)**	[3]	Oa.1	
Oa.1: It is mandatory to support at least one of these items.				
Comments:				

A.6 PICS for SS - Subscriber station

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

A.6.1 Network topology

Table A.2: Network topology

Prerequisite: A.1/1 -- Subscriber Station.				
Item	**Role**	**Reference**	**Status**	**Support**
1	**PMP topology (SS to BS traffic)**	[3]	Oa.2	
2	**MESH topology (SS to SS traffic)**	[3]	Oa.2	
Oa.2: It is mandatory to support at least one of these items.				
Comments:				

A.6.2 SS capabilities of the PHYsical layer in PMP topology

Table A.3: Channelization for SS in PMP topology

Prerequisite: A.2/1 -- PMP topology.				
Item	**Name**	**Reference**	**Status**	**Support**
1	1,75 MHz channel PHY	[3] 12.3	Oa.3	
2	3,5 MHz channel PHY	[3] 12.3	Oa.3	
3	7,0 MHz channel PHY	[3] 12.3	Oa.3	
4	3 MHz channel PHY	[3] 12.3	Oa.3	
5	5,5 MHz channel PHY	[3] 12.3	Oa.3	
6	10 MHz channel PHY	[3] 12.3	Oa.3	
Oa.3: It is mandatory to support at least one of these items.				
Comments:				

Table A.4: Power classes for SS in PMP topology

Prerequisite: A.2/1 -- PMP topology.				
Item	**Name**	**Reference**	**Status**	**Support**
1	$P_{TX,max}$ < 14 dBm	[3] 12.3	Oa.4	
2	14 dBm < $P_{TX,max}$ < 17 dBm	[3] 12.3	Oa.4	
3	17 dBm < $P_{TX,max}$ < 20 dBm	[3] 12.3	Oa.4	
4	20 dBm < $P_{TX,max}$ < 23 dBm	[3] 12.3	Oa.4	
5	$P_{TX,max}$ > 23 dBm	[3] 12.3	Oa.4	
Oa.4: It is mandatory to support at least one of these items.				
Comments:				

Table A.5: Duplexing modes - PMP

Prerequisite: A.2/1 -- PMP topology.				
Item	**Name**	**Reference**	**Status**	**Support**
1	TDD Time Division Duplexing	[3] 6.3.7.2	Oa.5	
2	Framed FDD Frequency Division Duplexing Full duplex	[3] 6.3.7.1	Oa.5	
3	Framed FDD Half Duplex	[3] 6.3.7.1	Oa.5	
Oa.5: It is mandatory to support at least one of these items.				
Comments:				

Table A.6: Major PHY functions for SS in PMP

This table lists the optional functions that have a direct impact on the protocol or on the associated profiles.

Prerequisite: A.2/1 -- PMP topology.				
Item	**Name**	**Reference**	**Status**	**Support**
1	AAS (Adaptive Antenna) supported	[3] 6.3.7.6	o	
2	Channelization	[3] 8.3.1.1	o	
3	Dynamic Frequency Support DFS	[3] 6.3.15	o	
4	FEC	[3] 8.3.3.2	o	
Comments:				

A.6.3 SS capabilities of the MAC in PMP topology

A.6.3.1 SS Convergence sublayer - SS in PMP

Table A.7: Convergence Sublayer protocol support

Prerequisite: A.2/1 -- PMP topology.				
Item	**Name**	**Reference**	**Status**	**Support**
1	Packet convergence sublayer	[3] 5.2	m	
2	ATM convergence sublayer	[3] 5.1	o	
Comments:				

Table A.8: Packet Sublayer protocol support

Prerequisite: A.2/1 -- PMP topology.				
Item	**Name**	**Reference**	**Status**	**Support**
1	Internet Protocol (IPv4)	[3] 5.2	m	
2	Internet Protocol (IPv6)	[3] 5.2	o	
3	Point-to-point protocol (PPP)	[3] 5.2	o	
4	IEEE 802.3 (Ethernet)	[3] 5.2	o	
5	IEEE 802.1 Q VLAN	[3] 5.2	o	
Comments:				

Table A.9: ATM Convergence Sublayer protocol support

Prerequisite: A.2/1and A.10/2 -- PMP topology.and SS supports ATM				
Item	**Name**	**Reference**	**Status**	**Support**
1	ATM in VP switched mode	[3] 5.1	0a.9	
2	ATM in VC switched mode	[3] 5.1	0a.9	
Oa.9: It is mandatory to support at least one of these items.				
Comments:				

Table A.10: CS functions in SS

Prerequisite: A.2/1 -- PMP topology.				
Item	**Name**	**Reference**	**Status**	**Support**
1	Packet header suppression (PHS)	[3] 5.2.4	o	
2	Packet classification	[3] 5.2	o	
Comments:				

Table A.11: Major sending CS functions (SS in PMP)

Prerequisite: A.2/1 -- PMP topology.				
Item	**Name**	**Reference**	**Status**	**Support**
1	Classification of PDUs into appropriate connection	[3] 5.2	m	
2	Suppression of payload header information (PHS function)	[3] 5.1.2.3 [3] 5.2.4	Ca.11.1	
3	Delivery of resulting CS PDU to the MAC SAP associated with the service flow	[3] 5.2	m	
Ca.11.1: IF A.10/1 THEN m ELSE n/a				
Comments:				

Table A.12: Major receiving CS functions (SS in PMP)

Prerequisite: A.2/1 -- PMP topology.				
Item	**Name**	**Reference**	**Status**	**Support**
1	Receipt of the CS PDU	[3] 5.2	m	
2	Rebuilding of suppressed payload header information (PHS function)	[3] 5.1.2.3 [3] 5.2.4	Ca.12.1	
Ca.12.1: IF A.10/1 THEN m ELSE n/a				
Comments:				

Table A.13: Major Packet Payload Header Suppression capabilities

Prerequisite: A.2/1 -- PMP topology.				
Item	**Name**	**Reference**	**Status**	**Support**
1	PHSV: Test validity of Header (before suppression)	[3] 5.2.4	Ca.13.1	
2	PHSM: mask to allow selective suppression of header	[3] 5.2.4	Ca.13.1	
Ca.13.1: IF A.10/1 THEN m ELSE n/a				
Comments:				

Table A.14: Major packet classification

Prerequisite: A.2/1 -- PMP topology.				
Item	**Name**	**Reference**	**Status**	**Support**
1	IP Classification of PDUs into appropriate connection	[3] 11.13.19.3.4	Ca.14.1	
2	Ethernet classification of PDUs into appropriate connection	[3] 11.13.19.3.4	Ca.14.2	
3	IEEE 802.1Q VLAN classification of PDUs into appropriate connection	[3] 11.13.19.3.4	Ca.14.3	
Ca.14.1: IF A.8/1 or A.8/2 THEN m ELSE n/a Ca.14.2: IF A.8/4 THEN m ELSE n/a Ca.14.3: IF A.8/5 THEN m ELSE n/a				
Comments:				

Table A.15: IP packet classification in the UL

Prerequisite: A.2/1and (A.8/1 or A.8/2) -- PMP topology and IP support.				
Item	**Name**	**Reference**	**Status**	**Support**
1	Classification based on DSCP /IP TOS field	[3] 11.13.19.3.4.2	m	
2	Classification based on IP Protocol/Next Header field	[3] 11.13.19.3.4.3	m	
3	Classification based on IP masked Source Address	[3] 11.13.19.3.4.4	m	
4	Classification based on IP Destination Address	[3] 11.13.19.3.4.5	m	
5	Classification based on protocol source port range	[3] 11.13.19.3.4.6	m	
6	Classification based on protocol destination port range	[3] 11.13.19.3.4.7	m	
Comments:				

Table A.16: Ethernet packet classification in the UL

Prerequisite: A.2/1and A.8/4 -- PMP topology and Ethernet support.				
Item	**Name**	**Reference**	**Status**	**Support**
1	Classification based on Destination MAC Address	[3] 11.13.19.3.4.8	m	
2	Classification based on Source MAC Address	[3] 11.13.19.3.4.9	m	
3	Classification based on Ethertype/SAP	[3] 11.13.19.3.4.10	m	
Comments:				

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

Prerequisite: A.2/1 and A.8/5 -- PMP topology and 802.1Q support.				
Item	**Name**	**Reference**	**Status**	**Support**
1	Classification based on 802.1D user priority	[3] 11.13.19.3.4.11	m	
2	Classification based on 802.1Q VLAN ID	[3] 11.13.19.3.4.12	m	
Comments:				

A.6.3.2 SS MAC common part sublayer - PMP

Table A.18: Major MAC Common part functionalities for SS in PMP

Prerequisite: A.2/1 -- PMP topology.				
Item	**Name**	**Reference**	**Status**	**Support**
1	Addressing and connections	[3] 6.3.1	m	
2	Construction of PDUs	[3] 6.3.3	m	
3	ARQ	[3] 6.3.4	o	
4	Uplink scheduling service	[3] 6.3.5	m	
5	Bandwidth allocation and request	[3] 6.3.6	m	
6	Duplexing modes	[3] 6.3.7	m	
7	Contention resolution	[3] 6.3.8	m	
8	Network entry and initialization	[3] 6.3.9	m	
9	Ranging	[3] 6.3.10	m	
10	Update of UL and DL channel descriptors	[3] 6.3.11	m	
11	Quality of service	[3] 6.3.14	m	
Comments:				

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

Prerequisite: A.2/1 -- PMP topology.				
Item	**Name**	**Reference**	**Status**	**Support**
1	Assignment of SSs to multicast groups (MCA_REQ messages from BS)	[3] 6.3.12	m	
2	Downlink Burst profile management initiated by SS (DBPC messages)	[3] 6.3.2.3.20 [3] 6.3.2.3.21	m	
3	SS reset initiated by BS (RES-CMD)	[3] 6.3.2.3.22	m	
4	SS network clock comparison initiated by BS (CLK-CMP)	[3] 6.3.2.3.25	m	
5	SS notifies BS of de-registration (DREG-REQ)	[3] 6.3.2.3.43	m	
6	SS forced by BS to change its channel access (DREG-CMD)	[3] 6.3.2.3.26	m	
7	SS receives quick answer from BS to its DSx-REQ (DSX-RVD)	[3] 6.3.2.3.27	m	
8	SS informs BS of reception of Config file (TFTP messages)	[3] 6.3.2.3.28 [3] 6.3.2.3.29	m	
9	SS answers to BS channel management report request (REP-REQ and REP-RSP)	[3] 6.3.2.3.33	Ca.19.1	
10	SS applies the power change requested by the BS (FPC)	[3] 6.3.2.3.34	m	
11	SS answers the AAS feedback message request from the BS (AAS-FBCK messages)	[3] 6.3.2.3.40	Ca.19.2	
12	SS inform the BS of preferred beam direction (AAS-BEAM select message)	[3] 6.3.2.3.41	Ca.19.2	
13	SS answers the AAS beam message request from the BS (AAS-Beam messages)	[3] 6.3.2.3.42	Ca.19.2	
Ca.19.1: IF band below 11 Ghz THEN m ELSE n/a Ca.19.1: IF A.6/1 THEN m ELSE n/a				
Comments:				

A.6.3.2.1 Addressing and connections

Table A.20: Addressing and Connections - PMP

Prerequisite: A.2/1 -- PMP topology.				
Item	**Capability**	**Reference**	**Status**	**Support**
1	Globally Unique SS MAC Address	[3] 6.3.1	m	
2	Time urgent MAC Management messages on basic connection	[3] 6.3.1	m	
3	Delay tolerant MAC Management messages on primary management connection	[3] 6.3.1	m	
4	IP packets on the secondary management connection	[3] 6.3.1	m	
Comments:				

A.6.3.2.2 Construction and Transmission of MAC PDUs

A.6.3.2.2.1 Conventions

Table A.21: Transmission conventions

Prerequisite: A.2/1 -- PMP topology.				
Item	**Capability**	**Reference**	**Status**	**Support**
1	Transmit messages most significant byte first	[3] 6.3.3.1	m	
2	Transmit bytes most significant bit first	[3] 6.3.3.1	m	
Comments:				

A.6.3.2.2.2 PDU Concatenation

Table A.22: PDU concatenation

Prerequisite: A.2/1 -- PMP topology.				
Item	**Capability**	**Reference**	**Status**	**Support**
1	Concatenate Multiple MAC PDUs into a single burst of the allocated length	[3] 6.3.3.2	m	
2	Receive concatenated MAC PDUs and determine disposition via CID	[3] 6.3.3.2	m	
Comments:				

A.6.3.2.2.3 SDU Fragmentation

Table A.23: SDU Fragmentation

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

A.6.3.2.2.4 SDU reassembly

Table A.24: SDU reassembly

Prerequisite: A.2/1 -- PMP topology.				
Item	**Capability**	**Reference**	**Status**	**Support**
1	Receive and reassemble fragmented SDUs	[3] 6.3.3.3	m	
2	Discard SDUs corrupted due to loss of fragment	[3] 6.3.3.3	m	
Comments:				

A.6.3.2.2.5 Packing

Table A.25: Packing

Prerequisite: A.2/1 -- PMP topology.				
Item	**Capability**	**Reference**	**Status**	**Support**
1	Pack Fixed length non-ARQ SDUs in a MAC PDU	[3] 6.3.3.4.1.1	m	
2	Pack variable length non-ARQ SDUs in a MAC PDU	[3] 6.3.3.4.1.2	m	
3	Pack variable length ARQ-enabled SDUs or SDUs fragments in a MAC PDU	[3] 6.3.3.4.2 [2] 5.1.2	Ca.25.1	
4	Do not pack fixed length ARQ-enabled SDUs	[3] 6.3.3.4.2 [2] 5.1	Ca.25.1	
5	Do not perform packing of SDUs on Basic, Broadcast and Initial Ranging connections	[3] 6.3.2.3	m	
6	Do not perform packing of ARQ Feedback Payload	[3] 6.3.3.4.3	Ca.25.1	
7	Compute and add CRC	[3] 6.3.3.5	m	
Ca.25.1: IF A18/3THEN m ELSE n/a				
Comments:				

A.6.3.2.2.6 Unpacking

Table A.26: Unpacking

Prerequisite: A.2/1 -- PMP topology.				
Item	**Capability**	**Reference**	**Status**	**Support**
1	Receive (unpack) fixed length SDUs	[3] 6.3.3.4.1.1	m	
2	Receive (unpack) variable length SDUs	[3] 6.3.3.4.1	m	
3	Check CRC	[3] 6.3.3.5	m	
Comments:				

A.6.3.2.3 ARQ

Table A.27: ARQ

Prerequisite: A.2/1 -- PMP topology.				
Item	**Capability**	**Reference**	**Status**	**Support**
1	SS supports ARQ applicable to a single unidirectional connection	[2] 5	Ca.27.1	
2	Pack several ARQ feedback information elements in a single ARQ feedback payload	[2] 5.1.3	Ca.27.1	
3	Insert a single ARQ feedback payload as first packet in a MAC PDU	[2] 5.1.3	Ca.27.1	
Ca.27.1: IF A.18/3 THEN m ELSE n/a				
Comments:				

A.6.3.2.4 Uplink scheduling services

Table A.28: Uplink scheduling services

Prerequisite: A.2/1 -- PMP topology.				
Item	**Name**	**Reference**	**Status**	**Support**
1	Unsolicited grant service (UGS)	[3] 6.3.5.2.1	m	
2	Real time polling service (rtPS)	[3] 6.3.5.2.2	m	
3	Non-Real time polling service (nrtPS)	[3] 6.3.5.2.3	m	
4	Best effort service (BE)	[3] 6.3.5.2.4	m	
Comments:				

A.6.3.2.5 Bandwidth allocation and request

Table A.29: Bandwidth allocation and request

Prerequisite: A.2/1 -- PMP topology.				
Item	**Name**	**Reference**	**Status**	**Support**
1	SS requests aggregate bandwidth via Bandwidth Request Header	[3] 6.3.6.1	m	
2	SS requests incremental bandwidth via Bandwidth Request Header	[3] 6.3.6.1	m	
3	SS requests incremental bandwidth via piggyback request	[3] 6.3.6.1	m	
4	SS transmits Bandwidth request during Request IE grant	[3] 6.3.6.1	m	
5	SS transmits Bandwidth request during Data Grant IE grant	[3] 6.3.6.1	m	
6	SS responds to Unicast, Multicast or Broadcast polls	[3] 6.3.6.3.2 [3] 6.3.6.3.1	m	
7	SS uses Poll-me (PM) bit	[3] 6.3.6.3.3	m	
Comments:				

A.6.3.2.6 Duplexing modes or Support of PHY layers

Refer to table A.5, part of physical characteristics, for a description of the duplexing modes.

A.6.3.2.7 Contention resolution

Table A.30: Contention resolution

Prerequisite: A.2/1 -- PMP topology.				
Item	**Name**	**Reference**	**Status**	**Support**
1	The SS supports truncated exponential backoff for initial ranging	[3] 6.3.8	m	
2	The SS supports truncated exponential backoff for bandwidth request contention	[3] 6.3.8	m	
Comments:				

A.6.3.2.8 Network entry and initialization

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

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

A.6.3.2.8.1 Obtain Downlink Parameters

Table A.32: Obtain DL Parameters

Prerequisite: A.2/1 -- PMP topology.				
Item	**Capability**	**Reference**	**Status**	**Support**
1	SS receives DL-MAP correctly	[3] 6.3.9.2	m	
2	SS receives DCD correctly	[3] 6.3.9.2	m	
Comments:				

A.6.3.2.8.2 Obtain Uplink Parameters

Table A.33: Obtain UL Parameters

Prerequisite: A.2/1 -- PMP topology.				
Item	**Capability**	**Reference**	**Status**	**Support**
1	SS receives UCD correctly	[3] 6.3.9.3, 6.3.9.4	m	
Comments:				

A.6.3.2.8.3 Initial Ranging

Table A.34: Initial ranging

Prerequisite: A.2/1 -- PMP topology.				
Item	**Capability**	**Reference**	**Status**	**Support**
1	SS receives UL-MAP	[3] 6.3.9.5	m	
2	SS calculates the maximum transmit signal strength	[1] 7.2	m	
3	SS sends RNG-REQ	[1] 7.2	m	
4	SS sends subchannelized initial ranging burst	[1] 7.2	Ca.A.34.1	
5	SS sends again RNG-REQ if no response, with increased power	[1] 7.2	m	
6	SS receives RNG-RSP, declared successful when it includes its MAC address	[3] 6.3.9.5	m	
7	SS establishes Basic and Primary Management connections	[3] 6.3.9.5	m	
8	SS performs timing and power adjustment	[3] 6.3.9.5	m	
9	SS performs final tuning using RNG-REQ and RNG-RSP mechanism	[3] 6.3.9.5	m	
Ca.A.34.1: IF A.6/2 THEN m ELSE n/a				
Comments:				

A.6.3.2.8.4 Negotiate Basic Capabilities

Table A.35: Negotiate basic capabilities

Prerequisite: A.2/1 -- PMP topology.				
Item	**Capability**	**Reference**	**Status**	**Support**
1	SS sends SBC-REQ	[3] 6.3.9.7	m	
2	SS receives SBC-RSP	[3] 6.3.9.7	m	
3	SS resends SBC-REQ on timeout	[3] 6.3.9.7	m	
Comments:				

A.6.3.2.8.5 SS Authorization

See clause A.6.3.3 for SS Privacy Functions when authorizing against BS (PMP Topology).

A.6.3.2.8.6 Registration

Table A.36: Registration

Prerequisite: A.2/1 -- PMP topology.				
Item	**Capability**	**Reference**	**Status**	**Support**
1	SS sends REG-REQ to register with a BS	[3] 6.3.9.9	m	
2	SS receives REG-RSP which includes the Secondary management CID	[3] 6.3.9.9	m	
3	SS re-sends REG-REQ upon time out, until REG-RSP is received	[3] 6.3.9.9	m	
4	SS establishes Secondary Management Connection	[3] 6.3.9.9	m	
Comments:				

A.6.3.2.8.7 Establish IP connectivity

Table A.37: Establish IP connectivity

Prerequisite: A.2/1 -- PMP topology.				
Item	**Capability**	**Reference**	**Status**	**Support**
1	Are the DHCP mechanisms following the RFC 2131 [9] rules?	[3] 6.3.9.10	m	
2	SS sends DHCP discover on Secondary Management Connection	[3] 6.3.9.10	m	
3	SS receives DHCP offer on Secondary Management Connection	[3] 6.3.9.10	m	
4	SS sends DHCP request on Secondary Management Connection	[3] 6.3.9.10	m	
5	SS receives DHCP response on Secondary Management Connection	[3] 6.3.9.10	m	
6	SS sets up IP parameters from DHCP response	[3] 6.3.9.10	m	
Comments:				

A.6.3.2.8.8 Establish Time of day

Table A.38: Establish time of day

Prerequisite: A.2/1 -- PMP topology.				
Item	**Capability**	**Reference**	**Status**	**Support**
1	Are the protocols for time of day following the RFC 868 [10] rules?	[3] 6.3.9.11	m	
2	SS sends Time of Day request	[3] 6.3.9.11	m	
3	SS receives Time of Day response	[3] 6.3.9.11	m	
4	SS establishes Time of Day	[3] 6.3.9.11	m	
Comments:				

A.6.3.2.8.9 Transfer operational parameters

Table A.39: Transfer operational parameters

Prerequisite: A.2/1 -- PMP topology.				
Item	**Capability**	**Reference**	**Status**	**Support**
1	SS sends TFTP-CPLT on Secondary management connection, after successful configuration using DHCP protocol	[3] 6.3.9.12	m	
2	SS sends TFTP-CPLT on Primary management connection, for notification	[3] 6.3.9.12	m	
3	SS receives TFTP-RSP as response to TFTP-CPLT	[3] 6.3.9.12	m	
4	SS keeps sending TFTP-CPLT on timeout while waiting for TFTP-RSP	[3] 6.3.9.12	m	
Comments:				

A.6.3.2.9 Periodic Ranging

Table A.40: Periodic ranging

Prerequisite: A.2/1 -- PMP topology.				
Item	**Capability**	**Reference**	**Status**	**Support**
1	SS manages the downlink burst profile and initiates the change to more appropriate DL bursts	[3] 6.3.10.1	m	
2	SS performs uplink periodic ranging and adjusts transmission parameters	[3] 6.3.10.2	m	
3	SS controls periodicity for ranging, using timers	[3] 6.3.10.3	m	
Comments:				

A.6.3.2.10 Update of channel descriptors

Table A.41: Update of channel descriptors by SS

Prerequisite: A.2/1 -- PMP topology.				
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)	[3] 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)	[3] 6.3.11	m	
3	SS stores new downlink burst descriptors upon receiving DCD message with incremented Configuration Change Count (I+1 mod 256)	[3] 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)	[3] 6.3.11	m	
Comments:				

A.6.3.2.11 Assigning SSs to multicast groups

Table A.42: Assignment of SSs to multicast groups

Prerequisite: A.2/1 -- PMP topology.				
Item	**Capability**	**Reference**	**Status**	**Support**
1	SS receives a request for joining or leaving a multicast polling group, using MCA-REQ	[3] 6.3.12	m	
2	SS supports participation in multicast polling group and adds multicast CID to transmission opportunities to join the group	[3] 6.3.12	m	
3	SS supports participation in multicast polling group and delete multicast CID to transmission opportunities to leave the group	[3] 6.3.12	m	
4	SS transmits MCA-RSP to acknowledge the action and indicate status (ok, reject, etc.)	[3] 6.3.12	m	
Comments:				

A.6.3.2.12 Quality of service - service flows

Table A.43: Service flow operations

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

A.6.3.3 SS Privacy Functions - PMP

Table A.44: Major Privacy functions for SS in PMP

Prerequisite: A.2/1 -- PMP topology.				
Item	**Name**	**Reference**	**Status**	**Support**
1	Does the SS perform Authorization and key exchange as per [3], clause 7.2	[3] 7.2	m	
2	Does the SS provide a manufacturers" X.509 certificate to the BS during Authorization Information message?	[3] 7.2	Oa.44	
3	Does the SS provide a third party X.509 certificate to the BS during Authorization Information message?	[3] 7.2	Oa.44	
4	Does SS send Auth Request (PKM-REQ with *Code = 4)*	[3] 7.2	m	
5	Does the SS provide a manufacturers" X.509 certificate to the BS during Authorization Request?	[3] 7.2	m	
6	Does the SS include details of the supported cryptographic suite identifiers as part of the Authorization Request?	[3] 7.2	m	
7	Does the SS provide its" Basic CID as part of the Authorization Request?	[3] 7.2	m	
8	Does SS support receipt of Auth Reply (PKM-RSP with *Code = 5)*?	[3] 7.2	m	
9	Does the SS store the AK and derive KEK, HMAC_KEY_U and HMAC_KEY_D?	[3] 7.2	m	
10	Does SS support establishment of Sas listed in Auth Reply?	[3] 7.2	m	
11	Does SS support resend of Auth Request on timeout (Auth Wait Timeout)?	[3] 7.2	m	
12	Does the SS support two simultaneously active Aks?	[3] 7.2	m	
Oa.44: It is mandatory to support at least one of these items.				
Comments:				

Table A.45: PKM message encodings support

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

Table A.46: Cryptographic suites

Prerequisite: A.2/1 -- PMP topology.						
Item	**Capability**	**Reference**	**Status**	**Support**	**Value Allowed**	**Value Supported**
1	No data encrypt, no data authent & 3-DES 128	[3] 11.9.14	m		0x000001	
2	CBC-mode 56bit DES, no data authent & 3-DES 128	[3] 11.9.14	m		0x010001	
3	No data encrypt, no data authent & RSA, 1024	[3] 11.9.14	m		0x000002	
4	CBC-mode 56bit DES, no data authent & RSA, 1024	[3] 11.9.14	m		0x010002	
5	CCM-mode AES, no data authentication & AES, 128	[3] 11.9.14	m		0x020003	
Comments:						

A.6.4 SS capabilities of the PHYsical layer in MESH topology

Table A.47: Channelization for SS in MESH topology

Prerequisite: A.2/2 -- MESH topology.				
Item	**Name**	**Reference**	**Status**	**Support**
1	3,5 MHz channel PHY	[3] 12.3	Oa.47	
2	7,0 MHz channel PHY	[3] 12.3	Oa.47	
Oa.47: It is mandatory to support at least one of these items.				
Comments: 1,75 MHz channel PHY not allowed in MESH topology.				

Table A.48: Power classes for SS in MESH topology

Prerequisite: A.2/2 -- MESH topology.				
Item	**Name**	**Reference**	**Status**	**Support**
1	17 dBm < $P_{TX,max}$ < 20 dBm	[3] 12.3	Oa.48	
2	20 dBm < $P_{TX,max}$ < 23 dBm	[3] 12.3	Oa.48	
3	$P_{TX,max}$ > 23 dBm	[3] 12.3	Oa.48	
Oa.48: It is mandatory to support at least one of these items.				
Comments:				

Table A.49: Duplexing modes - MESH

Prerequisite: A.2/2 -- MESH topology.				
Item	**Name**	**Reference**	**Status**	**Support**
1	TDD Time Division Duplexing	[3] 6.3.7.2	m	
2	Framed FDD Frequency Division Duplexing Full duplex	[3] 6.3.7.1	x	
3	Framed FDD Half Duplex	[3] 6.3.7.1	x	
Comments: Only TDD is supported. FDD not allowed in MESH topology.				

A.6.5 SS capabilities of the MAC in MESH topology

Prerequisite: A.2/2 -- MESH topology. This prerequisite applies throughout clause A.6.5.

A.6.5.1 SS Convergence sublayer - MESH

To be defined.

A.6.5.2 SS MAC common part sublayer - MESH

To be defined.

A.6.5.3 SS Privacy Functionalities - MESH

To be defined.

A.7 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.

A.7.1 Network topology

Base Station is involved in PMP (Point to Multipoint) topology only, no MESH network.

A.7.2 BS capabilities of the PHYsical layer (PMP topology)

Table A.50: Channelization for BS

Prerequisite: A.1/2 -- Base Station.				
Item	**Name**	**Reference**	**Status**	**Support**
1	1,75 MHz channel PHY	[3] 12.3	Oa.50	
2	3,5 MHz channel PHY	[3] 12.3	Oa.50	
3	7,0 MHz channel PHY	[3] 12.3	Oa.50	
4	3 MHz channel PHY	[3] 12.3	Oa.50	
5	5,5 MHz channel PHY	[3] 12.3	Oa.50	
6	10 MHz channel PHY	[3] 12.3	Oa.50	
Oa.50: It is mandatory to support at least one of these items.				
Comments:				

Table A.51: Power classes for BS

Prerequisite: A.1/2 -- Base Station.				
Item	**Name**	**Reference**	**Status**	**Support**
1	$P_{TX,max}$ < 14 dBm	[3] 12.3	Oa.51	
2	14 dBm < $P_{TX,max}$ < 17 dBm	[3] 12.3	Oa.51	
3	17 dBm < $P_{TX,max}$ < 20 dBm	[3] 12.3	Oa.51	
4	20 dBm < $P_{TX,max}$ < 23 dBm	[3] 12.3	Oa.51	
5	$P_{TX,max}$ > 23 dBm	[3] 12.3	Oa.51	
Oa.51: It is mandatory to support at least one of these items.				
Comments:				

Table A.52: Duplexing modes

Prerequisite: A.1/2 -- Base Station.				
Item	**Name**	**Reference**	**Status**	**Support**
1	TDD Time Division Duplexing	[3] 6.3.7.2	Oa.52	
2	Framed FDD Frequency Division Duplexing Full duplex	[3] 6.3.7.1	Oa.52	
3	Framed FDD Half Duplex	[3] 6.3.7.1	X	
Oa.52: It is mandatory to support at least one of these items.				
Comments:				

Table A.53: Major PHY functions for BS

Prerequisite: A.1/2 -- Base Station.				
Item	**Name**	**Reference**	**Status**	**Support**
1	AAS (Adaptive Antenna) supported	[3] 6.3.7.7.1	o	
2	Channelization	[3] 8.3.1.1	o	
3	Dynamic Frequency Support (DFS)	[3] 6.3.15	o	
4	FEC	[3] 8.3.3.2	o	
Comments:				

A.7.3 BS capabilities of the MAC (PMP topology)

A.7.3.1 BS Convergence sublayer - PMP

Table A.54: Convergence Sublayer protocol support

Prerequisite: A.1/2 -- Base Station.				
Item	**Name**	**Reference**	**Status**	**Support**
1	Packet convergence sublayer	[3] 5.2	m	
2	ATM convergence sublayer	[3] 5.1	o	
Comments:				

Table A.55: Packet Sublayer protocol support

Prerequisite: A.1/2 -- Base Station.				
Item	**Name**	**Reference**	**Status**	**Support**
1	Internet Protocol (IPv4)	[3] 5.2	m	
2	Internet Protocol (IPv6)	[3] 5.2	o	
3	Point-to-point protocol (PPP)	[3] 5.2	o	
4	IEEE 802.3 (Ethernet)	[3] 5.2	o	
5	IEEE 802.1 Q VLAN	[3] 5.2	o	
Comments:				

Table A.56: ATM Convergence Sublayer protocol support

Prerequisite: A.1/2 and A.54/2 -- Base Station and BS supports ATM.				
Item	**Name**	**Reference**	**Status**	**Support**
1	ATM in VP switched mode	[3] 5.1	Oa.56	
2	ATM in VC switched mode	[3] 5.1	Oa.56	
Oa.56: It is mandatory to support at least one of these items.				
Comments:				

Table A.57: CS functions in BS

Prerequisite: A.1/2 -- Base Station.				
Item	**Name**	**Reference**	**Status**	**Support**
1	Packet header suppression (PHS)	[3] 5.2.4	o	
2	Packet classification	[3] 5.2	o	
Comments:				

Table A.58: Major sending CS functions of BS

Prerequisite: A.1/2 -- Base Station.				
Item	**Name**	**Reference**	**Status**	**Support**
1	Classification of PDUs into appropriate connection	[3] 5.2	m	
2	Suppression of payload header information (PHS function)	[3] 5.1.2.3 [3] 5.2.4	Ca.58.1	
3	Delivery of resulting CS PDU to the MAC SAP associated with the service flow	[3] 5.2	m	
Ca.58.1: IF A.57/2 THEN m ELSE n/a				
Comments:				

Table A.59: Major receiving CS functions of BS

Prerequisite: A.1/2 -- Base Station.				
Item	**Name**	**Reference**	**Status**	**Support**
1	Receipt of the CS PDU	[3] 5.2	m	
2	Rebuilding of suppressed payload header information (PHS function)	[3] 5.1.2.3 [3] 5.2.4	Ca.59.1	
Ca.59.1: IF A.57/2 THEN m ELSE n/a				
Comments:				

Table A.60: Major Packet Payload Header Suppression capabilities

Prerequisite: A.1/2 -- Base Station.				
Item	**Name**	**Reference**	**Status**	**Support**
1	PHSV: Test validity of Header (before suppression)	[3] 5.2.4	Ca.60.1	
2	PHSM: mask to allow selective suppression of header	[3] 5.2.4	Ca.60.1	
Ca.60.1: IF A.57/2 THEN m ELSE n/a				
Comments:				

Table A.61: Major packet classification

Prerequisite: A.1/2 -- Base Station.				
Item	**Name**	**Reference**	**Status**	**Support**
1	IP Classification of PDUs into appropriate connection	[3] 11.13.19.3.4	Ca.61.1	
2	Ethernet classification of PDUs into appropriate connection	[3] 11.13.19.3.4	Ca.61.2	
3	IEEE 802.1Q VLAN classification of PDUs into appropriate connection	[3] 11.13.19.3.4	Ca.61.3	
Ca.61.1: IF A.55/1 or A.55/2 THEN m ELSE n/a Ca.61.2: IF A.55/4 THEN m ELSE n/a Ca.61.3: IF A.55/5 THEN m ELSE n/a				
Comments:				

Table A.62: IP packet classification in the UL

Prerequisite: A.1/2 and (A.55/1 or A.55/2) -- Base Station and IP support.				
Item	**Name**	**Reference**	**Status**	**Support**
1	Classification based on DSCP /IP TOS field	[3] 11.13.19.3.4.2	m	
2	Classification based on IP Protocol/Next Header field	[3] 11.13.19.3.4.3	m	
3	Classification based on IP masked Source Address	[3] 11.13.19.3.4.4	m	
4	Classification based on IP Destination Address	[3] 11.13.19.3.4.5	m	
5	Classification based on protocol source port range	[3] 11.13.19.3.4.6	m	
6	Classification based on protocol destination port range	[3] 11.13.19.3.4.7	m	
Comments:				

Table A.63: Ethernet packet classification in the UL

Prerequisite: A.1/2 and A.55/4 -- Base Station and Ethernet support.				
Item	**Name**	**Reference**	**Status**	**Support**
1	Classification based on Destination MAC Address	[3] 11.13.19.3.4.8	m	
2	Classification based on Source MAC Address	[3] 11.13.19.3.4.9	m	
3	Classification based on Ethertype/SAP	[3] 11.13.19.3.4.10	m	
Comments:				

Table A.64: 802.1Q packet classification in the UL

Prerequisite: A.1/2 and A.55/5 -- Base Station and 802.1Q support.				
Item	**Name**	**Reference**	**Status**	**Support**
1	Classification based on 802.1D user priority	[3] 11.13.19.3.4.11	m	
2	Classification based on 802.1Q VLAN ID	[3] 11.13.19.3.4.12	m	
Comments:				

A.7.3.2 BS MAC common part sublayer - PMP

Table A.65: Major MAC Common part functionalities for BS

Prerequisite: A.1/2 -- Base Station.				
Item	**Name**	**Reference**	**Status**	**Support**
1	Addressing and connections	[3] 6.3.1	m	
2	Construction of PDUs	[3] 6.3.3	m	
3	ARQ	[3] 6.3.4	o	
4	Uplink scheduling service	[3] 6.3.5	m	
5	Bandwidth allocation and request	[3] 6.3.6	m	
6	Duplexing modes	[3] 6.3.7	m	
7	Contention resolution	[3] 6.3.8	m	
8	Network entry and initialization	[3] 6.3.9	m	
9	Ranging	[3] 6.3.10	m	
10	Update of UL and DL channel descriptors	[3] 6.3.11	m	
11	Quality of service	[3] 6.3.14	m	
Comments:				

Table A.66: Miscellaneous management functions for BS

Prerequisite: A.1/2 -- Base Station.				
Item	**Name**	**Reference**	**Status**	**Support**
1	Assignment of SSs to multicast groups (MCA_REQ messages from BS)	[3] 6.3.12	m	
2	Change of Downlink Burst profile management (DBPC messages initiated by SS)	[3] 6.3.2.3.20 [3] 6.3.2.3.21	m	
3	BS initiates SS reset (RES-CMD)	[3] 6.3.2.3.22	m	
4	BS initiates SS network clock comparison (CLK-CMP)	[3] 6.3.2.3.25	m	
5	BS notified by SS of SS de-registration (DREG-REQ)	[3] 6.3.2.3.43	m	
6	BS forces SS to change its channel access (DREG-CMD)	[3] 6.3.2.3.26	m	
7	BS sends quick answer to DSx-REQ sent by SS (DSX-RVD)	[3] 6.3.2.3.27	m	
8	BS receives confirmation of reception of Config file (TFTP messages)	[3] 6.3.2.3.28 [3] 6.3.2.3.29	m	
9	BS sends channel management report request (REP-REQ)	[3] 6.3.2.3.33	Ca.66.1	
10	BS requests the power change (FPC)	[3] 6.3.2.3.34	m	
11	BS sends AAS feedback message request (AAS-FBCK messages)	[3] 6.3.2.3.40	Ca.66.2	
12	BS is informed of preferred beam direction (AAS-BEAM select message)	[3] 6.3.2.3.41	Ca.66.2	
13	BS sends AAS beam message request (AAS-Beam messages)	[3] 6.3.2.3.42	Ca.66.2	
Ca.66.1: IF band below 11 Ghz THEn m ELSE n/a Ca.66.2: IF A.53/1 THEN m ELSE n/a				
Comments:				

A.7.3.2.1 Addressing and connections

Table A.67: Addressing and Connections - PMP

Prerequisite: A.1/2 -- Base Station.				
Item	**Capability**	**Reference**	**Status**	**Support**
1	Globally Unique 48 bits MAC Address, making up three 16 bits CID	[3] 6.3.1	m	
2	Time urgent MAC Management messages on basic connection	[3] 6.3.1	m	
3	Delay tolerant MAC Management messages on primary management connection	[3] 6.3.1	m	
4	IP packets on the secondary management connection	[3] 6.3.1	m	
Comments:				

A.7.3.2.2 Construction and Transmission of MAC PDUs

A.7.3.2.2.1 Conventions

Table A.68: Transmission conventions

Prerequisite: A.1/2 -- Base Station.				
Item	**Capability**	**Reference**	**Status**	**Support**
1	Transmit messages most significant byte first	[3] 6.3.3.1	m	
2	Transmit bytes most significant bit first	[3] 6.3.3.1	m	
Comments:				

A.7.3.2.2.2 PDU Concatenation

Table A.69: PDU concatenation

Prerequisite: A.1/2 -- Base Station.				
Item	**Capability**	**Reference**	**Status**	**Support**
1	Concatenate Multiple MAC PDUs into a single burst of the allocated length	[3] 6.3.3.2	m	
2	Receive concatenated MAC PDUs and determine disposition via CID	[3] 6.3.3.2	m	
Comments:				

A.7.3.2.2.3 SDU Fragmentation

Table A.70: SDU Fragmentation

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

A.7.3.2.2.4 SDU reassembly

Table A.71: SDU reassembly

Prerequisite: A.1/2 -- Base Station.				
Item	**Capability**	**Reference**	**Status**	**Support**
1	Receive and reassemble fragmented SDUs.	[3] 6.3.3.3	m	
2	Discard SDUs corrupted due to loss of fragment	[3] 6.3.3.3	m	
Comments:				

A.7.3.2.2.5 Packing

Table A.72: Packing

Prerequisite: A.1/2 -- Base Station.				
Item	**Capability**	**Reference**	**Status**	**Support**
1	Pack Fixed length non-ARQ SDUs in a MAC PDU	[3] 6.3.3.4.1.1	m	
2	Pack variable length non-ARQ SDUs in a MAC PDU	[3] 6.3.3.4.1.2	m	
3	Pack variable length ARQ-enabled SDUs or SDUs fragments in a MAC PDU	[3] 6.3.3.4.2 [2] 5.1.2	Ca.72.1	
4	Do not pack fixed length ARQ-enabled SDUs	[3] 6.3.3.4.2 [2] 5.1	Ca.72.1	
5	Do not perform packing of SDUs on Basic, Broadcast and Initial Ranging connections	[3] 6.3.2.3	m	
6	Do not perform packing of ARQ Feedback Payload	[3] 6.3.3.4.3	Ca.72.1	
7	Compute and add CRC	[3] 6.3.3.5	m	
Ca.72.1: IF A.65/3 THEN m ELSE n/a				
Comments:				

A.7.3.2.2.6 Unpacking

Table A.73: Unpacking

Prerequisite: A.1/2 -- Base Station.				
Item	**Capability**	**Reference**	**Status**	**Support**
1	Receive (unpack) fixed length SDUs	[3] 6.3.3.4.1.1	m	
2	Receive (unpack) variable length SDUs	[3] 6.3.3.4.1	m	
3	Check CRC	[3] 6.3.3.5	m	
Comments:				

A.7.3.2.3 ARQ

Table A.74: ARQ

Prerequisite: A.1/2 -- Base Station.				
Item	**Capability**	**Reference**	**Status**	**Support**
1	BS supports ARQ applicable to a single unidirectional connection	[2] 5	Ca.74.1	
2	Pack several ARQ feedback information elements in a single ARQ feedback payload	[2] 5.1.3	Ca.74.1	
3	Insert a single ARQ feedback payload as first packet in a MAC PDU	[2] 5.1.3	Ca.74.1	
Ca.74.1: IF A.65/3 THEN m ELSE n/a				
Comments:				

A.7.3.2.4 Uplink scheduling services

Table A.75: Uplink scheduling services

Prerequisite: A.1/2 -- Base Station.				
Item	**Name**	**Reference**	**Status**	**Support**
1	Unsolicited grant service (UGS)	[3] 6.3.5.2.1	m	
2	Real time polling service (rtPS)	[3] 6.3.5.2.2	m	
3	Non-Real time polling service (nrtPS)	[3] 6.3.5.2.3	m	
4	Best effort service (BE)	[3] 6.3.5.2.4	m	
Comments:				

A.7.3.2.5 Bandwidth allocation and request

Table A.76: Bandwidth allocation and request

Prerequisite: A.1/2 -- Base Station.				
Item	**Name**	**Reference**	**Status**	**Support**
1	BS receives request for aggregate bandwidth via Bandwidth Request Header	[3] 6.3.6.1	m	
2	BS receives request for incremental bandwidth via Bandwidth Request Header	[3] 6.3.6.1	m	
3	BS receives request for incremental bandwidth via piggyback request	[3] 6.3.6.1	m	
4	BS receives Bandwidth request during Request IE grant	[3] 6.3.6.1	m	
5	BS receives Bandwidth request during Data Grant IE grant	[3] 6.3.6.1	m	
6	BS sends Unicast, Multicast or Broadcast polls	[3] 6.3.6.3.2 [3] 6.3.6.3.1	m	
7	BS detects polling requested by Poll-me (PM) bit	[3] 6.3.6.3.3	m	
Comments:				

A.7.3.2.6 Duplexing modes or Support of PHY layers

Refer to table A.52, part of physical characteristics, for a description of the duplexing modes.

A.7.3.2.7 Contention resolution

Table A.77: Contention resolution

Prerequisite: A.1/2 -- Base Station.				
Item	**Name**	**Reference**	**Status**	**Support**
1	The BS sets truncated exponential backoff for initial ranging	[3] 6.3.8	m	
2	The BS sets truncated exponential backoff for bandwidth request contention	[3] 6.3.8	m	
Comments:				

A.7.3.2.8 Network entry and initialization

Table A.78: Network entry and initialization for BS

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

A.7.3.2.8.1 Obtain Downlink Parameters

Table A.79: Obtain DL Parameters

Prerequisite: A.1/2 -- Base Station.				
Item	**Capability**	**Reference**	**Status**	**Support**
1	BS sends DL-MAP	[3] 6.3.9.2	m	
2	BS sends DCD	[3] 6.3.9.2	m	
Comments:				

A.7.3.2.8.2 Obtain Uplink Parameters

Table A.80: Obtain UL Parameters

Prerequisite: A.1/2 -- Base Station.				
Item	**Capability**	**Reference**	**Status**	**Support**
1	BS sends UCD	[3] 6.3.9.3, 6.3.9.4	m	
Comments:				

A.7.3.2.8.3 Initial Ranging

Table A.81: Initial ranging

Prerequisite: A.1/2 -- Base Station.				
Item	**Capability**	**Reference**	**Status**	**Support**
1	BS sends UL-MAP	[3] 6.3.9.5	m	
2	SS calculates the maximum transmit signal strength	[1] 7.2	m	
3	BS receives RNG-REQ	[1] 7.2	m	
4	SS sends subchannelized initial ranging burst	[1] 7.2	Ca.A.81.1	
5	SS sends again RNG-REQ if no response, with increased power	[1] 7.2	m	
6	BS sends RNG-RSP, declared successful when it includes its MAC address	[3] 6.3.9.5	m	
7	BS allocates Basic and Primary Management connections IDs	[3] 6.3.9.5	m	
8	SS performs timing and power adjustment	[3] 6.3.9.5	m	
9	BS performs final tuning using RNG-REQ and RNG-RSP mechanism	[3] 6.3.9.6	m	
Ca.A.81.1: IF A.53/2 THEN m ELSE n/a				
Comments:				

A.7.3.2.8.4 Negotiate Basic Capabilities

Table A.82: Negotiate basic capabilities

Prerequisite: A.1/2 -- Base Station.				
Item	**Capability**	**Reference**	**Status**	**Support**
1	BS receives SBC-REQ	[3] 6.3.9.7	m	
2	BS sends SBC-RSP	[3] 6.3.9.7	m	
Comments:				

A.7.3.2.8.5 SS Authorization

See clause A.7.3.3.

A.7.3.2.8.6 Registration

Table A.83: Registration

Prerequisite: A.1/2 -- Base Station.				
Item	**Capability**	**Reference**	**Status**	**Support**
1	BS receives REG-REQ to register	[3] 6.3.9.9	m	
2	BS sends REG-RSP which includes: the Secondary management CID, the IP version	[3] 6.3.9.9	m	
Comments:				

A.7.3.2.8.7 Establish IP connectivity

Table A.84: Establish IP connectivity

Prerequisite: A.1/2 -- Base Station.				
Item	**Capability**	**Reference**	**Status**	**Support**
1	Are the DHCP mechanisms following the RFC 2131 [9] rules?	[3] 6.3.9.10	m	
2	BS receives DHCP discover on Secondary Management Connection	[3] 6.3.9.10	m	
3	BS sends DHCP offer on Secondary Management Connection	[3] 6.3.9.10	m	
4	BS receives DHCP request on Secondary Management Connection	[3] 6.3.9.10	m	
5	BS sends DHCP response on Secondary Management Connection	[3] 6.3.9.10	m	
Comments:				

A.7.3.2.8.8 Establish Time of day

Table A.85: Establish time of day

Prerequisite: A.1/2 -- Base Station.				
Item	**Capability**	**Reference**	**Status**	**Support**
1	Are the protocols for time of day following the RFC 868 [10] rules?	[3] 6.3.9.11	m	
2	BS receives Time of Day request	[3] 6.3.9.11	m	
3	BS processes the request and sends Time of Day response	[3] 6.3.9.11	m	
Comments:				

A.7.3.2.8.9 Transfer operational parameters

Table A.86: Transfer operational parameters

Prerequisite: A.1/2 -- Base Station.				
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	[3] 6.3.9.12	m	
2	BS sends TFTP-RSP as response to TFTP-CPLT	[3] 6.3.9.12	m	
Comments:				

A.7.3.2.9 Periodic Ranging

Table A.87: Periodic ranging

Prerequisite: A.1/2 -- Base Station.				
Item	**Capability**	**Reference**	**Status**	**Support**
1	BS responds to the change to more appropriate DL bursts	[3] 6.3.10.1	m	
2	BS performs uplink periodic ranging and adjusts transmission parameters using RNG-RSP	[3] 6.3.10.2	m	
Comments:				

A.7.3.2.10 Update of UL and DL channel descriptors

Table A.88: Update of channel descriptors

Prerequisite: A.1/2 -- Base Station.				
Item	**Capability**	**Reference**	**Status**	**Support**
1	BS sends UL channel descriptors at regular intervals using UCD message with identical Configuration change count	[3] 6.3.11	m	
2	BS sends new UL burst descriptors using UCD message with incremented Configuration change count (I+1 mod 256)	[3] 6.3.11	m	
3	BS sends DL channel descriptors at regular intervals using DCD message with identical Configuration change count	[3] 6.3.11	m	
4	BS sends new DL burst descriptors using DCD message with incremented Configuration change count (I+1 mod 256)	[3] 6.3.11	m	
Comments:				

A.7.3.2.11 BS assigns SSs to multicast groups

Table A.89: Assignment of SSs to multicast groups

Prerequisite: A.1/2 -- Base Station.				
Item	**Capability**	**Reference**	**Status**	**Support**
1	BS adds or removes an SS to a multicast polling group, using MCA-REQ	[3] 6.3.12	m	
2	BS waits for MCA-RSP that acknowledge the action and indicate status (ok, reject, etc.)	[3] 6.3.12	m	
Comments:				

A.7.3.2.12 Quality of service - service flows

Table A.90: Service flow operations

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

A.7.3.3 BS Privacy Functionalities - PMP

Table A.91: Major Privacy functionalities for BS

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

Table A.92: PKM message encodings support

Prerequisite: A.1/2 -- Base Station.						
Item	**Capability**	**Reference**	**Status**	**Support**	**Values Allowed**	**Values Supported**
1	Display-string	[3] 11.9.1	o			
2	AUTH-Key	[3] 11.9.2	m			
3	TEK	[3] 11.9.3	m			
4	Key-Lifetime	[3] 11.9.4	m			
5	Key-Sequence-Number	[3] 11.9.5	m		AK: 0 - 15 TEK: 0 - 3	
6	HMAC-Digest	[3] 11.9.6	m			
7	SAID	[3] 11.9.7	m			
8	TEK-Parameters	[3] 11.9.8	m			
9	CBC-IV	[3] 11.9.9	m			
10	Error-Code	[3] 11.9.10	m		0 to 6	
11	CA-Certificate	[3] 11.9.11	m			
12	SS-Certificate	[3] 11.9.12	m			
13	Security-Capabilities	[3] 11.9.13	m			
14	Cryptographic-Suite	[3] 11.9.14	m		See table A.93	
15	Cryptographic-Suite-List	[3] 11.9.15	m			
16	Version	[3] 11.9.16	m		1	
17	SA-Descriptor	[3] 11.9.17	m			
18	SA-Type	[3] 11.9.18	m		0, 1, 2	
19	PKM Configuration Setting	[3] 11.9.19	m			
Comments:						

Table A.93: Cryptographic suites

Prerequisite: A.1/2 -- Base Station.						
Item	**Capability**	**Reference**	**Status**	**Support**	**Value Allowed**	**Value Supported**
1	No data encrypt, no data authent & 3-DES 128	[3] 11.9.14	m		0x000001	
2	CBC-mode 56bit DES, no data authent & 3-DES 128	[3] 11.9.14	m		0x010001	
3	No data encrypt, no data authent & RSA, 1024	[3] 11.9.14	m		0x000002	
4	CBC-mode 56bit DES, no data authent & RSA, 1024	[3] 11.9.14	m		0x010002	
5	CCM-mode AES, no data authentication & AES, 128	[3] 11.9.14	m		0x020003	
Comments:						

A.8 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.8.1 PDUs for PHY layer

A.8.1.1 PDUs for PHY layer in PMP topology

Prerequisite: A.2/1 -- PMP topology.

To be defined.

A.8.1.2 PDUs for PHY layer in MESH topology

Prerequisite: A.2/2 -- MESH topology.

To be defined.

A.8.2 PDUs for MAC layer

A.8.2.1 PDUs for MAC layer in PMP topology

A.8.2.1.1 PDUs for network entry and initialization in PMP

Table A.94: BS sending MAC PDUs for network entry and initialization in PMP

Prerequisite: A.2/1 -- PMP topology.				
Item	**PDU**	**Reference**	**Status**	**Support**
1	DL-MAP	[3] 6.3.9.2	m	
2	DCD	[3] 6.3.9.2	m	
3	UL-MAP	[3] 6.3.9.3	m	
4	UCD	[3] 6.3.9.3	m	
5	RNG-REQ	-	n/a	
6	RNG-RSP	[3] 6.3.9.5	m	
7	SBC-REQ	-	n/a	
8	SBC-RSP	[3] 6.3.9.7	m	
9	PKM-REQ	-	n/a	
10	PKM-RSP	[3] 6.3.9.8	m	
11	REG-REQ	-	n/a	
12	REG-RSP	[3] 6.3.9.9	m	
13	DHCP discover	-	n/a	
14	DHCP offer	[3] 6.3.9.10	m	
15	DHCP request	-	n/a	
16	DHCP response	[3] 6.3.9.10	m	
17	Time of day request	-	n/a	
18	Time of day response	[3] 6.3.9.11	m	
Comments:				

Table A.95: SS sending MAC PDUs for network entry and initialization in PMP

Prerequisite: A.2/1 -- PMP topology.				
Item	**PDU**	**Reference**	**Status**	**Support**
1	DL-MAP	-	n/a	
2	DCD	-	n/a	
3	UL-MAP	-	n/a	
4	UCD	-	n/a	
5	RNG-REQ	[3] 6.3.9.5	m	
6	RNG-RSP	-	n/a	
7	SBC-REQ	[3] 6.3.9.7	m	
8	SBC-RSP	-	n/a	
9	PKM-REQ	[3] 6.3.9.8	m	
10	PKM-RSP	-	n/a	
11	REG-REQ	[3] 6.3.9.9	m	
12	REG-RSP	-	n/a	
13	DHCP discover	[3] 6.3.9.10	m	
14	DHCP offer	-	n/a	
15	DHCP request	[3] 6.3.9.10	m	
16	DHCP response	-	n/a	
17	Time of day request	[3] 6.3.9.11	m	
18	Time of day response	-	n/a	
Comments:				

A.8.2.1.2 PDUs for service flows in PMP

Table A.96: BS sending PDUs for service flows in PMP

Prerequisite: A.2/1 -- PMP topology.				
Item	**PDU**	**Reference**	**Status**	**Support**
1	DSA-REQ (create)	[3] 6.3.2.3.10	m	
2	DSA-RSP	[3] 6.3.2.3.11	m	
3	DSA-ACK	[3] 6.3.2.3.12	m	
4	DSC-REQ (change)	[3] 6.3.2.3.13	m	
5	DSC-RSP	[3] 6.3.2.3.14	m	
6	DSC-ACK	[3] 6.3.2.3.15	m	
7	DSD-REQ (delete)	[3] 6.3.2.3.16	m	
8	DSD-RSP	[3] 6.3.2.3.17	m	
Comments:				

Table A.97: SS sending PDUs for service flows in PMP

Prerequisite: A.2/1 -- PMP topology.				
Item	**PDU**	**Reference**	**Status**	**Support**
1	DSA-REQ (create)	[3] 6.3.2.3.10	m	
2	DSA-RSP	[3] 6.3.2.3.11	m	
3	DSA-ACK	[3] 6.3.2.3.12	m	
4	DSC-REQ (change)	[3] 6.3.2.3.13	m	
5	DSC-RSP	[3] 6.3.2.3.14	m	
6	DSC-ACK	[3] 6.3.2.3.15	m	
7	DSD-REQ (delete)	[3] 6.3.2.3.16	m	
8	DSD-RSP	[3] 6.3.2.3.17	m	
Comments:				

A.8.2.1.3 PDUs for ARQ in PMP

Table A.98: BS sending PDUs for ARQ in PMP

Prerequisite: A.2/1 and A.65/3 -- PMP topology and BS supports ARQ procedure.				
Item	**PDU**	**Reference**	**Status**	**Support**
1	ARQ-feedback	[3] 6.3.4	m	
2	ARQ-discard	[3] 6.3.4	m	
3	ARQ-reset	[3] 6.3.4	m	
4	ARQ-ACK	-	n/a	
Comments:				

Table A.99: SS sending PDUs for ARQ in PMP

Prerequisite: A.2/1 and A.18/3 -- PMP topology and SS supports ARQ procedure.				
Item	**PDU**	**Reference**	**Status**	**Support**
1	ARQ-feedback	[3] 6.3.4	m	
2	ARQ-discard	[3] 6.3.4	m	
3	ARQ-reset	[3] 6.3.4	m	
4	ARQ-ACK	[3] 6.3.4	m	
Comments:				

A.8.2.1.4 PDUs for miscellaneous capabilities in PMP

Table A.100: BS sending MAC PDUs for miscellaneous capabilities in PMP

Prerequisite: A.2/1 -- PMP topology.				
Item	**PDU**	**Reference**	**Status**	**Support**
1	MCA-REQ	[3] 6.3.2.3.18	m	
2	MCA-RSP	[3] 6.3.2.3.19	n/a	
3	DBPC-REQ	[3] 6.3.2.3.20	n/a	
4	DBPC-RSP	[3] 6.3.2.3.21	m	
5	RES-CMD	[3] 6.3.2.3.22	m	
6	CLK-CMP	[3] 6.3.2.3.25	o	
7	DREG-REQ	[3] 6.3.2.3.42	n/a	
8	DREG-CMD	[3] 6.3.2.3.26	m	
9	DSX-RVD	[3] 6.3.2.3.27	m	
10	TFTP-CPLT	[3] 6.3.2.3.28	n/a	
11	TFTP-RSP	[3] 6.3.2.3.29	m	
12	REP-REQ	[3] 6.3.2.3.33	m	
13	REP-RSP	[3] 6.3.2.3.33	n/a	
14	FPC	[3] 6.3.2.3.34	m	
15	AAS-FBCK-REQ	[3] 6.3.2.3.40	Ca.100.1	
16	AAS-FBCK-RSP	[3] 6.3.2.3.40	Ca.100.1	
17	AAS-BEAM-select	[3] 6.3.2.3.41	n/a	
18	AAS-BEAM-REQ	[3] 8.3.6.5	Ca.100.1	
19	AAS-BEAM-RSP	[3] 8.3.6.5	Ca.100.1	
Ca.100.1: IF A.53/1 THEN (IF A.52/2 or A.52/3 THEN m ELSE o) ELSE n/a				
Comments:				

Table A.101: SS sending MAC PDUs for miscellaneous capabilities in PMP

Prerequisite: A.2/1 -- PMP topology.				
Item	**PDU**	**Reference**	**Status**	**Support**
1	MCA-REQ	-	n/a	
2	MCA-RSP	[3] 6.3.12	m	
3	DBPC-REQ	[3] 6.3.2.3.20	m	
4	DBPC-RSP	-	n/a	
5	RES-CMD	-	n/a	
6	CLK-CMP	-	n/a	
7	DREG-REQ	[3] 6.3.2.3.43	m	
8	DREG-CMD	-	n/a	
9	DSX-RVD	-	n/a	
10	TFTP-CPLT	[3] 6.3.2.3.28	m	
11	TFTP-RSP	-	n/a	
12	REP-REQ	-	n/a	
13	REP-RSP	[3] 6.3.2.3.33	m	
14	FPC	-	n/a	
15	AAS-FBCK-REQ	-	n/a	
16	AAS-FBCK-RSP	-	n/a	
17	AAS-BEAM-select	[3] 6.3.2.3.41	Ca.101.1	
18	AAS-BEAM-REQ	-	n/a	
19	AAS-BEAM-RSP	-	n/a	
Ca.101.1: IF A.6/1 THEN (IF A.5/2 or A.5/3 THEN m ELSE o) ELSE n/a				
Comments:				

A.8.2.1.5 PDUs for privacy in PMP

Table A.102: BS sending MAC Privacy PDUs in PMP

Prerequisite: A.2/1 -- PMP topology.				
Item	**PDU**	**Reference**	**Status**	**Support**
1	PKM-RSP SA Add (Code 3)	[3] 6.2.2.3.9; [3] 6.3.2.3.9	m	
2	PKM-REQ Auth Request (Code 4)	-	n/a	
3	PKM-RSP Auth Reply (Code 5)	[3] 6.2.2.3.9; [3] 6.3.2.3.9	m	
4	PKM-RSP Auth Reject (Code 6)	[3] 6.2.2.3.9; [3] 6.3.2.3.9	m	
5	PKM-REQ Key Request (Code 7)	-	n/a	
6	PKM-RSP Key Reply (Code 8)	[3] 6.2.2.3.9; [3] 6.3.2.3.9	m	
7	PKM-RSP Key Reject (Code 9)	[3] 6.2.2.3.9; [3] 6.3.2.3.9	m	
8	PKM-RSP Auth Invalid (Code 10)	[3] 6.2.2.3.9; [3] 6.3.2.3.9	m	
9	PKM-RSP TEK Invalid (Code 11)	[3] 6.2.2.3.9; [3] 6.3.2.3.9	m	
10	PKM-REQ Authent Info (Code 12)	-	n/a	
Comments:				

Table A.103: SS sending MAC Privacy PDUs in PMP

Prerequisite: A.2/1 -- PMP topology.				
Item	**PDU**	**Reference**	**Status**	**Support**
1	PKM-RSP SA Add (Code 3)	-	n/a	
2	PKM-REQ Auth Request (Code 4)	[3] 6.2.2.3.9; [3] 6.3.2.3.9	m	
3	PKM-RSP Auth Reply (Code 5)	-	n/a	
4	PKM-RSP Auth Reject (Code 6)	-	n/a	
5	PKM-REQ Key Request (Code 7)	[3] 6.2.2.3.9; [3] 6.3.2.3.9	m	
6	PKM-RSP Key Reply (Code 8)	-	n/a	
7	PKM-RSP Key Reject (Code 9)	-	n/a	
8	PKM-RSP Auth Invalid (Code 10)	-	n/a	
9	PKM-RSP TEK Invalid (Code 11)	-	n/a	
10	PKM-REQ Authent Info (Code 12)	[3] 6.2.2.3.9; [3] 6.3.2.3.9	m	
Comments:				

A.8.2.2 PDUs for MAC layer in MESH topology

A.8.2.2.1 PDUs for network entry and initialization in MESH

Table A.104: BS sending MAC PDUs for network entry and initialization in PMP

Prerequisite: A.2/2 -- MESH topology.				
Item	**PDU**	**Reference**	**Status**	**Support**
1	DL-MAP	-	n/a	
2	DCD	-	n/a	
3	UL-MAP	-	n/a	
4	UCD	-	n/a	
5	RNG-REQ	-	n/a	
6	RNG-RSP	-	n/a	
7	SBC-REQ	-	n/a	
8	SBC-RSP	[3] 6.3.9.7	m	
9	PKM-REQ	-	n/a	
10	PKM-RSP	[3] 6.3.9.8	m	
11	REG-REQ	-	n/a	
12	REG-RSP	[3] 6.3.9.9	m	
13	DHCP discover	-	n/a	
14	DHCP offer	[3] 6.3.9.10	m	
15	DHCP request	-	n/a	
16	DHCP response	[3] 6.3.9.10	m	
17	Time of day request	-	n/a	
18	Time of day response	[3] 6.3.9.11	m	
Comments:				

Table A.105: SS sending MAC PDUs for network entry and initialization in PMP

Prerequisite: A.2/2 -- MESH topology.				
Item	**PDU**	**Reference**	**Status**	**Support**
1	DL-MAP	-	n/a	
2	DCD	-	n/a	
3	UL-MAP	-	n/a	
4	UCD	-	n/a	
5	RNG-REQ	-	n/a	
6	RNG-RSP	-	n/a	
7	SBC-REQ	[3] 6.3.9.7	m	
8	SBC-RSP	-	n/a	
9	PKM-REQ	[3] 6.3.9.8	m	
10	PKM-RSP	-	n/a	
11	REG-REQ	[3] 6.3.9.9	m	
12	REG-RSP	-	n/a	
13	DHCP discover	[3] 6.3.9.10	m	
14	DHCP offer	-	n/a	
15	DHCP request	[3] 6.3.9.10	m	
16	DHCP response	-	n/a	
17	Time of day request	[3] 6.3.9.11	m	
18	Time of day response	-	n/a	
Comments:				

A.8.2.2.2 PDUs for service flows in Mesh

No service flow procedure in Mesh topology.

A.8.2.2.3 PDUs for ARQ in Mesh

ARQ procedure is mandatory in mesh topology.

Table A.106: BS sending PDUs for ARQ in MESH

Prerequisite: A.2/2 -- MESH topology.				
Item	**PDU**	**Reference**	**Status**	**Support**
1	ARQ-feedback	[3] 6.3.4	m	
2	ARQ-discard	[3] 6.3.4	m	
3	ARQ-reset	[3] 6.3.4	m	
4	ARQ-ACK	-	n/a	
Comments:				

Table A.107: SS sending PDUs for ARQ in MESH

Prerequisite: A.2/2 -- MESH topology.				
Item	**PDU**	**Reference**	**Status**	**Support**
1	ARQ-feedback	[3] 6.3.4	m	
2	ARQ-discard	[3] 6.3.4	m	
3	ARQ-reset	[3] 6.3.4	m	
4	ARQ-ACK	[3] 6.3.4	m	
Comments:				

A.8.2.2.4 PDUs for miscellaneous capabilities in MESH

Non relevant PDUs are defined as n/a in both directions.

Table A.108: BS sending MAC PDUs for miscellaneous capabilities in MESH

Prerequisite: A.2/2 -- MESH topology.				
Item	**PDU**	**Reference**	**Status**	**Support**
1	MCA-REQ	-	n/a	
2	MCA-RSP	-	n/a	
3	DBPC-REQ	-	n/a	
4	DBPC-RSP	-	n/a	
5	RES-CMD	[3] 6.3.2.3.22	m	
6	CLK-CMP	-	n/a	
7	DREG-REQ	-	n/a	
8	DREG-CMD	-	n/a	
9	DSX-RVD	-	n/a	
10	TFTP-CPLT	-	n/a	
11	TFTP-RSP	[3] 6.3.2.3.29	m	
12	REP-REQ	[3] 6.3.2.3.33	m	
13	REP-RSP	-	n/a	
14	FPC	[3] 6.3.2.3.34	m	
15	AAS-FBCK-REQ	[3] 6.3.2.3.40	Ca.108.1	
16	AAS-FBCK-RSP	[3] 6.3.2.3.40	Ca.108.1	
17	AAS-BEAM-select	-	n/a	
18	AAS-BEAM-REQ	[3] 6.3.2.3.42	Ca.108.1	
19	AAS-BEAM-RSP	[3] 6.3.2.3.42	Ca.108.1	
Ca.108.1: IF A.53/1 THEN (IF A.52/2 or A.52/3 THEN m ELSE o) ELSE n/a				
Comments:				

Table A.109: SS sending MAC PDUs for miscellaneous capabilities in MESH

Prerequisite: A.2/2 -- MESH topology.				
Item	**PDU**	**Reference**	**Status**	**Support**
1	MCA-REQ	-	n/a	
2	MCA-RSP	-	n/a	
3	DBPC-REQ	-	n/a	
4	DBPC-RSP	-	n/a	
5	RES-CMD	-	n/a	
6	CLK-CMP	-	n/a	
7	DREG-REQ	-	n/a	
8	DREG-CMD	-	n/a	
9	DSX-RVD	-	n/a	
10	TFTP-CPLT	[3] 6.3.2.3.28	m	
11	TFTP-RSP	-	n/a	
12	REP-REQ	-	n/a	
13	REP-RSP	[3] 6.3.2.3.33	m	
14	FPC	-	n/a	
15	AAS-FBCK-REQ	-	n/a	
16	AAS-FBCK-RSP	-	n/a	
17	AAS-BEAM-select	[3] 6.3.2.3.41	Ca.109.1	
18	AAS-BEAM-REQ	-	n/a	
19	AAS-BEAM-RSP	-	n/a	
Ca.109.1: IF A.6/1 THEN (IF A.5/2 or A.5/3 THEN m ELSE o) ELSE n/a				
Comments:				

A.8.2.2.5 PDUs for privacy in mesh

Table A.110: BS sending MAC Privacy PDUs in mesh

Prerequisite: A.2/2 -- MESH topology.				
Item	**PDU**	**Reference**	**Status**	**Support**
1	PKM-RSP SA Add (Code 3)	[3] 6.2.2.3.9; [3] 6.3.2.3.9	m	
2	PKM-REQ Auth Request (Code 4)	-	n/a	
3	PKM-RSP Auth Reply (Code 5)	[3] 6.2.2.3.9; [3] 6.3.2.3.9	m	
4	PKM-RSP Auth Reject (Code 6)	[3] 6.2.2.3.9; [3] 6.3.2.3.9	m	
5	PKM-REQ Key Request (Code 7)	-	n/a	
6	PKM-RSP Key Reply (Code 8)	[3] 6.2.2.3.9; [3] 6.3.2.3.9	m	
7	PKM-RSP Key Reject (Code 9)	[3] 6.2.2.3.9; [3] 6.3.2.3.9	m	
8	PKM-RSP Auth Invalid (Code 10)	[3] 6.2.2.3.9; [3] 6.3.2.3.9	m	
9	PKM-RSP TEK Invalid (Code 11)	[3] 6.2.2.3.9; [3] 6.3.2.3.9	m	
10	PKM-REQ Authent Info (Code 12)	-	n/a	
Comments:				

Table A.111: SS sending MAC Privacy PDUs in mesh

Prerequisite: A.2/2 -- MESH topology.				
Item	**PDU**	**Reference**	**Status**	**Support**
1	PKM-RSP SA Add (Code 3)	-	n/a	
2	PKM-REQ Auth Request (Code 4)	[3] 6.2.2.3.9; [3] 6.3.2.3.9	m	
3	PKM-RSP Auth Reply (Code 5)	-	n/a	
4	PKM-RSP Auth Reject (Code 6)	-	n/a	
5	PKM-REQ Key Request (Code 7)	[3] 6.2.2.3.9; [3] 6.3.2.3.9	m	
6	PKM-RSP Key Reply (Code 8)	-	n/a	
7	PKM-RSP Key Reject (Code 9)	-	n/a	
8	PKM-RSP Auth Invalid (Code 10)	-	n/a	
9	PKM-RSP TEK Invalid (Code 11)	-	n/a	
10	PKM-REQ Authent Info (Code 12)	[3] 6.2.2.3.9; [3] 6.3.2.3.9	m	
Comments:				

A.8.2.2.6 Additional PDUs in MESH topology

Table A.112: BS sending Additional PDUs in MESH topology

Prerequisite: A.2/2 -- MESH topology.				
Item	**PDU**	**Reference**	**Status**	**Support**
1	MSH-NCFG	[3] 6.3.2.3.35	m	
2	MSH-NENT	[3] 6.3.2.3.36	m	
3	MSH-DSCH	[3] 6.3.2.3.37	m	
4	MSH-CSCH	[3] 6.3.2.3.38	m	
5	MSH-CSCF	[3] 6.3.2.3.39	m	
Comments:				

Table A.113: SS sending Additional PDUs in MESH topology

Prerequisite: A.2/2 -- MESH topology.				
Item	**PDU**	**Reference**	**Status**	**Support**
1	MSH-NCFG	[3] 6.3.2.3.35	m	
2	MSH-NENT	[3] 6.3.2.3.36	m	
3	MSH-DSCH	[3] 6.3.2.3.37	m	
4	MSH-CSCH	[3] 6.3.2.3.38	m	
5	MSH-CSCF	[3] 6.3.2.3.39	m	
Comments:				

A.9 PDU fields

A.9.1 Fields of PDUs for PHY layer

To be defined.

A.9.2 Fields of PDUs for MAC layer

A.9.2.1 PDUs fields for MAC in PMP topology

A.9.2.1.1 DL-MAP

Table A.114: PDU: DL-MAP

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

A.9.2.1.2 DCD

Table A.115: PDU: DCD

Item	Parameter	Reference	Status	Support
1	Management Message type = 1	[3] 6.3.2.3.1	m	
2	Downlink channel ID	[3] 6.3.2.3.1	m	
3	Configuration Change count	[3] 6.3.2.3.1	m	
4	TLV Encoded information see table A.116	[3] 6.3.2.3.1	m	
5	Downlink burst profile(s) see table A.117	[3] 6.3.2.3.1	m	
Comments:				

Table A.116: DCD TLV

Item	Parameter	Reference	Status	Support
1	Downlink Burst profile	[2] 4.3.2	m	
2	BS EIRP	[2] 4.3.2	m	
3	TTG	[2] 4.3.2	m	
4	RTG	[2] 4.3.2	m	
5	$EIRxP_{IR,max}$	[2] 4.3.2	m	
Comments:				

Table A.117: DCD DL Burst Profile

Item	Capability	Reference	Status	Support
1	FEC Code Type	[2] 4.3.2	m	
2	DIUC Mandatory exit Threshold	[2] 4.3.2	m	
3	DIUC Mandatory entry Threshold	[2] 4.3.2	m	
Comments:				

A.9.2.1.3 UCD

Table A.118: PDU: UCD

Item	Parameter	Reference	Status	Support
1	Management Message type = 0	[3] 6.3.2.3.3	m	
2	Uplink channel ID	[3] 6.3.2.3.3	m	
3	Configuration Change count	[3] 6.3.2.3.3	m	
4	Minislot size	[3] 6.3.2.3.3	m	
5	Ranging backoff start	[3] 6.3.2.3.3	m	
6	Ranging backoff End	[3] 6.3.2.3.3	m	
7	Request backoff start	[3] 6.3.2.3.3	m	
8	Request backoff End	[3] 6.3.2.3.3	m	
9	TLV Encoded information see table A.119	[3] 6.3.2.3.3	m	
10	Uplink burst profile(s) see table A.120	[3] 6.3.2.3.3	m	
Comments:				

Table A.119: UCD TLV

Item	Parameter	Reference	Status	Support
1	Frequency	[2] 4.3.2	m	
2	Contention-based Reservation Timeout	[2] 4.3.2	m	
3	Channel Width	[2] 4.3.2	m	
4	Subchannelized initial ranging	[2] 4.3.2	Ca.119.1	
5	Subchannelized focused contention code	[2] 4.3.2	Ca.119.1	
Ca.119.1: IF (A.6/2 or A.53/2) THEN m ELSE n/a				
Comments:				

Table A.120: UCD UL Burst Profile

Item	Capability	Reference	Status	Support
1	FEC Code Type	[2] 4.3.2	m	
2	Focused contention power boost	[2] 4.3.2	m	
Comments:				

A.9.2.1.4 UL-MAP

Table A.121: PDU: UL-MAP

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

A.9.2.1.5 RNG-REQ and RNG-RSP

Table A.122: PDU: RNG-REQ

Item	Parameter	Reference	Status	Support
1	Management Message type = 4	[3] 6.3.2.3.5	m	
2	Downlink channel ID	[3] 6.3.2.3.5	m	
3	TLV Encoded information see table A.123	[3] 6.3.2.3.5	m	
Comments:				

Table A.123: RNG-REQ TLV

Item	Parameter	Reference	Status	Support
1	Requested Downlink Burst profile	[3] 6.3.2.3.5	m	
2	SS MAC address	[3] 6.3.2.3.5	m	
3	Ranging anomalies	[3] 6.3.2.3.5	m	
4	MAC version	[3] 6.3.2.3.5	m	
5	AAS broadcast capability	[3] 6.3.2.3.5	Ca.123.1	
Ca.123.1: IF (A6/1 or A.53/1) THEN o ELSE n/a				
Comments:				

Table A.124: PDU: RNG-RSP

Item	Parameter	Reference	Status	Support
1	Management Message type = 5	[3] 6.3.2.3.6	m	
2	Uplink channel ID	[3] 6.3.2.3.6	m	
3	TLV Encoded information see table A.125	[3] 6.3.2.3.6	m	
Comments:				

Table A.125: RNG-RSP TLV

Item	Parameter	Reference	Status	Support
1	Timing Adjust Information	[3] 6.3.2.3.6	m	
2	Power Adjust Information	[3] 6.3.2.3.6	m	
3	Ranging Status	[3] 6.3.2.3.6	m	
4	DL Frequency Override	[3] 6.3.2.3.6	m	
5	UL Channel ID Override	[3] 6.3.2.3.6	m	
6	DL Operational Burst Profile	[3] 6.3.2.3.6	m	
7	Basic CID	[3] 6.3.2.3.6	m	
8	Primary Management CID	[3] 6.3.2.3.6	m	
9	SS MAC Address	[3] 6.3.2.3.6	m	
10	Frequency Adjust Information	[3] 6.3.2.3.6	m	
11	AAS broadcast permission	[3] 6.3.2.3.6	Ca.125.1	
12	Frame Number	[3] 6.3.2.3.6	m	
13	Initial ranging opportunity Number	[3] 6.3.2.3.6	m	
14	ranging subchannel	[3] 6.3.2.3.6	m	
Ca.125.1: IF (A6/1 or A.53/1) THEN m ELSE n/a				
Comments:				

A.9.2.1.6 SBC-REQ and SBC-RSP

Table A.126: PDU: SBC-REQ

Item	Parameter	Reference	Status	Support
1	Management Message type = 26	[3] 6.3.2.3.23	m	
2	TLV Encoded information see table A.127	[3] 6.3.2.3.23	m	
Comments:				

Table A.127: SBC-REQ TLV

Item	Parameter	Reference	Status	Support
1	Basic CID	[3] 6.3.2.3.23	m	
2	Physical Parameters supported	[3] 6.3.2.3.23	m	
3	Bandwidth Allocation Support	[3] 6.3.2.3.23	m	
Comments:				

Table A.128: PDU: SBC-RSP

Item	Parameter	Reference	Status	Support
1	Management Message type = 27	[3] 6.3.2.3.24	m	
2	TLV Encoded information see table A.129	[3] 6.3.2.3.24	m	
Comments:				

Table A.129: SBC-RSP TLV

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

A.9.2.1.7 DHCP messages

Comments on Establish IP connectivity PDUs: **DHCP discover, DHCP offer, DHCP request** and **DHCP response** are defined by RFC 2131 [9].

A.9.2.1.8 Time of day messages

Comments on Establish Time of day PDUs: **Time of day request** and **Time of day response** are defined by RFC 868 [10].

A.9.2.1.9 ARQ messages

Table A.130: PDU: ARQ feedback message

Prerequisite: A.18/3 or A.65/3 - Equipment supports ARQ procedure				
Item	**Parameter**	**Reference**	**Status**	**Support**
1	Management Message type = 33	[3] 6.3.2.3.30	m	
2	ARQ feedback payload: one or several ARQ feedback IE(s) see table A.131	[3] 6.3.2.3.30	m	
Comments:				

Table A.131: ARQ Feedback Information Elements

Prerequisite: A.18/3 or A.65/3 - Equipment supports ARQ procedure				
Item	**Parameter**	**Reference**	**Status**	**Support**
1	CID	[3] 6.3.4.2	m	
2	last	[3] 6.3.4.2	m	
3	ACK type	[3] 6.3.4.2	m	
4	BSN	[3] 6.3.4.2	m	
5	Number of ACK maps	[3] 6.3.4.2	m	
6	ACK MAP(s)	[3] 6.3.4.2	m	
Comments:				

Table A.132: PDU: ARQ Discard message

Prerequisite: A.18/3 or A.65/3 - Equipment supports ARQ procedure				
Item	**Parameter**	**Reference**	**Status**	**Support**
1	Management Message type = 34	[3] 6.3.2.3.31	m	
2	Connection ID	[3] 6.3.2.3.31	m	
3	Fragmentation Sequence Number	[3] 6.3.2.3.31	m	
Comments:				

Table A.133: PDU: ARQ Reset message

Prerequisite: A.18/3 or A.65/3 - Equipment supports ARQ procedure				
Item	**Parameter**	**Reference**	**Status**	**Support**
1	Management Message type = 35	[3] 6.3.2.3.32	m	
2	Connection ID	[3] 6.3.2.3.32	m	
3	Type	[3] 6.3.2.3.32	m	
Comments:				

Table A.134: PDU: ARQ ACK message

Prerequisite: A.18/3 or A.65/3 - Equipment supports ARQ procedure				
Item	**Parameter**	**Reference**	**Status**	**Support**
1	ACK type	[3] 6.3.2.3.41	m	
2	BSN	[3] 6.3.2.3.41	m	
3	Number of ACK maps	[3] 6.3.2.3.41	m	
4	ACK maps	[3] 6.3.2.3.41	m	
Comments:				

A.9.2.1.10 MCA-REQ and MCA-RSP

Table A.135: PDU: MCA-REQ

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

Table A.136: MCA-REQ TLV

Item	**Parameter**	**Reference**	**Status**	**Support**
1	CID	[3] 6.3.2.3.18	m	
2	Transaction ID	[3] 6.3.2.3.18	m	
3	Multicast CID	[3] 6.3.2.3.18	m	
4	Assignment	[3] 6.3.2.3.18	m	
Comments:				

Table A.137: PDU: MCA-RSP

Item	**Parameter**	**Reference**	**Status**	**Support**
1	Management Message type = 22	[3] 6.3.2.3.19	m	
2	Transaction ID	[3] 6.3.2.3.19	m	
3	Confirmation Code	[3] 6.3.2.3.19	m	
Comments:				

A.9.2.1.11 DBPC-REQ and DBPC-RSP

Table A.138: PDU: DBPC-REQ

Item	Parameter	Reference	Status	Support
1	Management Message type = 23	[3] 6.3.2.3.20	m	
2	DL configuration change count	[3] 6.3.2.3.20	m	
3	DIUC	[3] 6.3.2.3.20	m	
Comments:				

Table A.139: PDU: DBPC-RSP

Item	Parameter	Reference	Status	Support
1	Management Message type = 24	[3] 6.3.2.3.21	m	
2	DL configuration change count	[3] 6.3.2.3.21	m	
3	DIUC	[3] 6.3.2.3.21	m	
Comments:				

A.9.2.1.12 RES-CMD

Table A.140: PDU: RES-CMD

Item	Parameter	Reference	Status	Support
1	Management Message type = 25	[3] 6.3.2.3.22	m	
2	TLV encoded information	[3] 6.3.2.3.22	m	
Comments:				

Table A.141: RES-CMD TLV

Item	Parameter	Reference	Status	Support
1	HMAC tuple	[3] 6.3.2.3.22	m	
Comments:				

A.9.2.1.13 CLK-CMP

Table A.142: PDU: CLK-CMP

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

A.9.2.1.14 DREG-REQ and DREG-CMD

Table A.143: PDU: DREG-REQ

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

Table A.144: DREG-REQ TLV

Item	Parameter	Reference	Status	Support
1	HMAC tuple	[3] 6.3.2.3.43	m	
Comments:				

Table A.145: PDU: DREG-CMD

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

Table A.146: DREG-CMD TLV

Item	Parameter	Reference	Status	Support
1	HMAC tuple	[3] 6.3.2.3.26	m	
Comments:				

A.9.2.1.15 DSX-RVD

Table A.147: PDU: DSX-RVD

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

A.9.2.1.16 TFTP-CPLT and TFTP-RSP

Table A.148: PDU: TFTP-CPLT

Item	Parameter	Reference	Status	Support
1	Management Message type = 31	[3] 6.3.2.3.28	m	
2	TLV encoded information	[3] 6.3.2.3.28	m	
Comments:				

Table A.149: TFTP-CPLT TLV

Item	Parameter	Reference	Status	Support
1	HMAC tuple	[3] 6.3.2.3.28	m	
Comments:				

Table A.150: PDU: TFTP-RSP

Item	Parameter	Reference	Status	Support
1	Management Message type = 32	[3] 6.3.2.3.29	m	
Comments:				

A.9.2.1.17 REP-REQ and REP-RSP

Table A.151: PDU: REP-REQ

Item	Parameter	Reference	Status	Support
1	Management Message type = 36	[3] 6.3.2.3.33	m	
2	Report request TLVs	[3] 6.3.2.3.33	m	
Comments:				

Table A.152: REP-REQ TLV for report request

Item	Parameter	Reference	Status	Support
1	Report type	[3] 11.11	m	
2	Channel number	[3] 11.11	m	
Comments:				

Table A.153: PDU: REP-RSP

Item	Parameter	Reference	Status	Support
1	Management Message type = 37	[3] 6.3.2.3.33	m	
2	Report response TLVs	[3] 6.3.2.3.33	m	
Comments:				

Table A.154: REP-RSP TLV for report

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

A.9.2.1.18 AAS-FBCK-REQ and AAS-FBCK-RSP

Table A.155: PDU: AAS-FBCK-REQ

Prerequisite: (A.6/1 or A.53/1) - Equipment supports AAS mode.				
Item	**Parameter**	**Reference**	**Status**	**Support**
1	Management Message type = 44	[3] 6.3.2.3.40	m	
2	Frame number	[3] 6.3.2.3.40	m	
3	Number of frames	[3] 6.3.2.3.40	m	
4	Measurement data type	[3] 6.3.2.3.40	m	
5	Feedback request counter	[3] 6.3.2.3.40	m	
6	Frequency measurement resolution	[3] 6.3.2.3.40	m	
Comments:				

Table A.156: PDU: AAS-FBCK-RSP

Prerequisite: (A.6/1 or A.53/1) - Equipment supports AAS mode.				
Item	**Parameter**	**Reference**	**Status**	**Support**
1	Management Message type = 45	[3] 6.3.2.3.40	m	
2	Feedback request number	[3] 6.3.2.3.40	m	
3	Real (Frequency value)	[3] 6.3.2.3.40	m	
4	Imaginary (Frequency value)	[3] 6.3.2.3.40	m	
Comments: set of Real and Imaginary Frequency values for each frequency defined.				

A.9.2.1.19 AAS-BEAM messages

Table A.157: PDU: AAS-Beam-Select

Prerequisite: (A.6/1 or A.53/1) - Equipment supports AAS mode.				
Item	**Parameter**	**Reference**	**Status**	**Support**
1	Management Message type = 46	[3] 6.3.2.3.41	m	
2	AAS beam direction index	[3] 6.3.2.3.41	m	
Comments:				

Table A.158: PDU: AAS-BEAM-REQ

Prerequisite: (A.6/1 or A.53/1) - Equipment supports AAS mode.				
Item	**Parameter**	**Reference**	**Status**	**Support**
1	Management Message type = 47	[3] 6.3.2.3.42	m	
2	Frame number	[3] 6.3.2.3.42	m	
3	Feedback request number	[3] 6.3.2.3.42	m	
4	Measurement report type	[3] 6.3.2.3.42	m	
5	Resolution parameter	[3] 6.3.2.3.42	m	
6	Beam bit mask	[3] 6.3.2.3.42	m	
Comments:				

Table A.159: PDU: AAS-BEAM-RSP

Prerequisite: (A.6/1 or A.53/1) - Equipment supports AAS mode.				
Item	**Parameter**	**Reference**	**Status**	**Support**
1	Management Message type = 48	[3] 6.3.2.3.43	m	
2	Frame number	[3] 6.3.2.3.43	m	
3	Feedback request number	[3] 6.3.2.3.43	m	
4	Measurement report type	[3] 6.3.2.3.43	m	
5	Resolution parameter	[3] 6.3.2.3.43	m	
6	Beam bit mask	[3] 6.3.2.3.43	m	
7	AAS_BEAM_REP_IE	[3] 6.3.2.3.43	m	
8	RSSI mean value	[3] 6.3.2.3.43	m	
9	CINR mean value	[3] 6.3.2.3.43	m	
Comments:				

A.9.2.1.20 FPC

Table A.160: PDU: FPC

Item	**Parameter**	**Reference**	**Status**	**Support**
1	Management Message type = 38	[3] 6.3.2.3.34	m	
2	Number of stations	[3] 6.3.2.3.34	m	
3	Basic CID	[3] 6.3.2.3.34	m	
4	Power adjust	[3] 6.3.2.3.34	m	
Comments: set of Basic CID and Power adjust values for each station defined.				

A.9.2.1.21 REG-REQ and REG-RSP

Table A.161: PDU: Registration Request (REG-REQ)

Item	**Parameter**	**Reference**	**Status**	**Support**
1	Management Message type = 6	[3] 6.2.2.3.8; [3] 6.3.2.3.8	m	
2	TLV Encoded Information	[3] 6.2.2.3.8; [3] 6.3.2.3.8	m	
Comments:				

Table A.162: PDU: REG-REQ TLV (PMP)

Prerequisite: (A.2/1 and A.161/2) -- PMP topology and REG-REQ TLV				
Item	**Parameter**	**Reference**	**Status**	**Support**
1	IP version	[3] 11.7.4	m	
2	Vendor ID Encoding	[3] 11.1.5	o	
3	Vendor specific information	[3] 11.1.6	o	
4	SS Capabilities Encodings	[3] 11.7.8	o	
5	Convergence Sublayer Capabilities	[3] 11.7.7	o	
6	ARQ parameters	[3] 11.7.1	o	
Comments:				

Table A.163: SS Capabilities encoding and values

Item	**SS Capability**	**Reference**	**Status**	**Support**	**Value**	
					Allowed range	**Supported**
1	ARQ support	[3] 11.7.8.1	m		0 to 1	
2	DSx flow control	[3] 11.7.8.2	m		0 to 255	
3	MAC CRC support	[3] 11.7.8.3	m		0 to 1	
4	MCA flow control	[3] 11.7.8.4	m		0 to 255	
5	Multicast polling group	[3] 11.7.8.5	m		0 to 255	
6	PKM flow control	[3] 11.7.8.6	m		0 to 255	
7	Authorization policy support	[3] 11.7.8.7	m		Bit 0	
8	Supported security associations	[3] 11.7.8.8	m		0 to 1	
Comments:						

Table A.164: PDU: Registration Response (REG-RSP)

Prerequisite: A.94/11-- REG-RSP				
Item	**Parameter**	**Reference**	**Status**	**Support**
1	Management Message type = 7	[3] 6.3.2.3.8	m	
2	Response	[3] 6.3.2.3.8	m	
3	TLV Encoded Information see table A.165	[3] 6.3.2.3.8	m	
Comments:				

Table A.165: PDU: REG-RSP TLV (PMP)

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

A.9.2.1.22 PKM-REQ and PKM-RSP Messages

Table A.166: PDU: PKM Request (PKM-REQ)

Prerequisite: (A.2/1 and A.94/8) -- PMP topology and PKM-REQ.				
Item	**Parameter**	**Reference**	**Status**	**Support**
1	Management Message type = 9	[3] 6.3.2.3.9	m	
2	Code	[3] 6.3.2.3.9	m	
3	PKM Identifier	[3] 6.3.2.3.9	m	
4	TLV Encoded Attributes	[3] 6.3.2.3.9	m	
Comments:				

Table A.167: PDU: PKM Reply (PKM-RSP)

Prerequisite: A.94/9 -- PKM-RSP,				
Item	**Parameter**	**Reference**	**Status**	**Support**
1	Management Message type = 10	[3] 6.3.2.3.9	m	
2	Code	[3] 6.3.2.3.9	m	
3	PKM Identifier	[3] 6.3.2.3.9	m	
4	TLV Encoded Attributes	[3] 6.3.2.3.9	m	
Comments:				

Table A.168: PDU: TLV Attributes (SA Add)

Prerequisite: A.102/1 -- SA Add (Code 3)				
Item	**Parameter**	**Reference**	**Status**	**Support**
1	Key Sequence Number	[3] 6.3.2.3.9.1	m	
2	SA Descriptors	[3] 6.3.2.3.9.1	m	
3	HMAC digest	[3] 6.3.2.3.9.1	m	
Comments:				

Table A.169: PDU: TLV Attributes (Auth Request)

Prerequisite: (A.166/4 and A.102/2) -- PKM-REQ TLV and Auth Request (Code 4).				
Item	**Parameter**	**Reference**	**Status**	**Support**
1	SS-Certificate	[3] 6.3.2.3.9.2	m	
2	Security Capabilities	[3] 6.3.2.3.9.2	m	
3	SAID	[3] 6.3.2.3.9.2	m	
Comments:				

Table A.170: PDU: TLV Attributes (Auth Reply)

Prerequisite: (A.167/4 and A.102/3)-- PKM-RSP TLV and Auth Reply (Code 5).				
Item	**Parameter**	**Reference**	**Status**	**Support**
1	AUTH-Key	[3] 6.3.2.3.9.3	m	
2	Key-Lifetime	[3] 6.3.2.3.9.3	m	
3	Key-Sequence-Number	[3] 6.3.2.3.9.3	m	
4	SA Descriptor	[3] 6.3.2.3.9.3	m	
5	PKM configuration	[3] 6.3.2.3.9.3	m	
6	Operator shared secret (MESH only)	[3] 6.3.2.3.9.3	m	
7	Key sequence number (MESH only)	[3] 6.3.2.3.9.3	m	
8	Key lifetime (MESH only)	[3] 6.3.2.3.9.3	m	
Comments:				

Table A.171: PDU: TLV Attributes (Auth Reject)

Prerequisite: (A.167/4 and A.102/4)-- PKM-RSP TLV and Auth Reject (Code 6).				
Item	**Parameter**	**Reference**	**Status**	**Support**
1	Error code	[3] 6.3.2.3.9.4	m	
2	Display-String	[3] 6.3.2.3.9.4	o	
Comments:				

Table A.172: PDU: TLV Attributes (Key Request)

Prerequisite: (A.166/4 and A.102/5)-- PKM-REQ TLV and Key Request (Code 7).				
Item	**Parameter**	**Reference**	**Status**	**Support**
1	Key-Sequence-Number	[3] 6.3.2.3.9.5	m	
2	HMAC-Digest	[3] 6.3.2.3.9.5	m	
3	SAID	[3] 6.3.2.3.9.5	m	
Comments:				

Table A.173: PDU: TLV Attributes (Key Reply)

Prerequisite: (A.167/4 and A.102/6)-- PKM-RSP TLV and Key Reply (Code 8).				
Item	**Parameter**	**Reference**	**Status**	**Support**
1	Key-Sequence-number	[3] 6.3.2.3.9.6	m	
2	HMAC-Digest	[3] 6.3.2.3.9.6	m	
3	SAID	[3] 6.3.2.3.9.6	m	
4	TEK-Parameters	[3] 6.3.2.3.9.6	m	
Comments:				

Table A.174: PDU: TLV Attributes (Key Reject)

Prerequisite: (A.167/4 and A.102/7)-- PKM-RSP TLV and Key Reject (Code 9).				
Item	**Parameter**	**Reference**	**Status**	**Support**
1	Key-Sequence-number	[3] 6.3.2.3.9.7	m	
2	HMAC-Digest	[3] 6.3.2.3.9.7	m	
3	SAID	[3] 6.3.2.3.9.7	m	
4	Error-code	[3] 6.3.2.3.9.7	m	
Comments:				

Table A.175: PDU: TLV Attributes (Auth Invalid)

Prerequisite: (A.167/4 and A.102/8)-- PKM-RSP TLV and Auth Invalid (Code 10).				
Item	**Parameter**	**Reference**	**Status**	**Support**
1	Error-code	[3] 6.3.2.3.9.8	m	
2	Display-String	[3] 6.3.2.3.9.8	m	
Comments:				

Table A.176: PDU: TLV Attributes (TEK Invalid)

Prerequisite: (A.167/4 and A.102/9)-- PKM-RSP TLV and TEK Invalid (Code 11).				
Item	**Parameter**	**Reference**	**Status**	**Support**
1	Key-Sequence-number	[3] 6.3.2.3.9.9	m	
2	HMAC-Digest	[3] 6.3.2.3.9.9	m	
3	SAID	[3] 6.3.2.3.9.9	m	
4	Error-code	[3] 6.3.2.3.9.9	m	
5	Display-String	[3] 6.3.2.3.9.9	o	
Comments:				

Table A.177: PDU: TLV Attributes (Authentication Information)

Prerequisite: (A.166/4 and A.102/10) -- PKM-REQ TLV and Authent Info.				
Item	**Parameter**	**Reference**	**Status**	**Support**
1	CA-Certificate	[3] 6.3.2.3.9.10	m	
Comments:				

A.9.2.1.23 DSA-REQ, DSA-RSP and DSA-ACK messages

Table A.178: PDU: DSA-REQ

Item	**Parameter**	**Reference**	**Status**	**Support**
1	Management Message type = 11	[3] 6.3.2.3.10	m	
2	Transaction ID	[3] 6.3.2.3.10	m	
3	TLV Encoded Information see table A.180	[3] 6.3.2.3.10	m	
Comments:				

Table A.179: DSA-REQ parameter families

Item	Parameter	Reference	Status	Support
1	Service flow parameters see table A.180	[3] 6.3.2.3.10 [3] 11.13	m	
2	Convergence sublayer parameter encodings	[3] 6.3.2.3.10 [3] 11.13.21	m	
3	HMAC tuple	[3] 6.3.2.3.10	m	
Comments:				

Table A.180: DSA-REQ TLV for Service flow parameters

Item	Parameter	Reference	Status	Support
1	Service flow identifier - SFID	[3] 11.13.1	m	
2	CID	[3] 11.13.2	m	
3	Service class name	[3] 11.13.3	m	
4	Service flow error parameter set	[3] 11.13.4	n/a	
5	QOS parameter set type	[3] 11.13.5	m	
6	Traffic priority	[3] 11.13.6	m	
7	Maximum sustained traffic rate	[3] 11.13.7	m	
8	Maximum traffic burst	[3] 11.13.8	m	
9	Minimum reserved traffic rate	[3] 11.13.9	m	
10	Minimum tolerable traffic rate	[3] 11.13.10	m	
11	Vendor specific QOS parameters	[3] 11.13.11	m	
12	Service flow scheduling type	[3] 11.13.12	m	
13	Request/transmission policy	[3] 11.13.13	m	
14	Tolerated jitter	[3] 11.13.14	m	
15	Maximum latency	[3] 11.13.15	m	
16	Fixed length versus variable length SDU indicator	[3] 11.13.16	m	
17	SDU size	[3] 11.13.17	m	
18	Target SAID	[3] 11.13.18	m	
19	ARQ enable	[3] 11.13.19	Ca.180.1	
20	ARQ_WINDOW_SIZE	[3] 11.13.19	Ca.180.1	
21	ARQ_TX_delay	[3] 11.13.19	Ca.180.1	
22	ARQ_RX_delay	[3] 11.13.19	Ca.180.1	
23	ARQ_BLOCK_LIFETIME	[3] 11.13.19	Ca.180.1	
24	ARQ_SYNC_LOSS	[3] 11.13.19	Ca.180.1	
25	ARQ_DELIVER_IN_ORDER	[3] 11.13.19	Ca.180.1	
26	ARQ_PURGE_TIMEOUT	[3] 11.13.19	Ca.180.1	
27	ARQ_BLOCK_SIZE	[3] 11.13.19	Ca.180.1	
28	Maximum fragment length	[3] 11.13.20	m	
29	CS specification	[3] 11.13.21	m	
Ca.180,1: IF (A.18/3 or A.65/3) THEN m ELSE n/a				
Comments: **n/a** status means here: not used in DSA-REQ.				

Table A.181: DSA-REQ TLV for Packet Convergence sublayer: packet classification rule parameter

Item	Parameter	Reference	Status	Support
1	HMAC tuple	[3] 6.3.2.3.10	m	
Comments:				

Table A.182: PDU: DSA-RSP

Item	Parameter	Reference	Status	Support
1	Management Message type = 12	[3] 6.3.2.3.11	m	
2	Transaction ID	[3] 6.3.2.3.11	m	
3	Confirmation code	[3] 6.3.2.3.11	m	
4	TLV Encoded Information see table A.184	[3] 6.3.2.3.11	m	
Comments:				

Table A.183: DSA-RSP parameter families

Item	Parameter	Reference	Status	Support
1	Service flow parameters see table A.180	[3] 6.3.2.3.11 [3] 11.13	m	
2	Convergence sublayer parameter encodings	[3] 6.3.2.3.11 [3] 11.13.21	m	
Comments:				

Table A.184: DSA-RSP TLV for Service flow parameters

Item	Parameter	Reference	Status	Support
1	HMAC tuple	[3] 6.3.2.3.11	m	
Comments:				

Table A.185: PDU: DSA-ACK

Item	Parameter	Reference	Status	Support
1	Management Message type = 13	[3] 6.3.2.3.12	m	
2	Transaction ID	[3] 6.3.2.3.12	m	
3	Confirmation code	[3] 6.3.2.3.12	m	
4	TLV Encoded Information see table A.187	[3] 6.3.2.3.12	m	
Comments:				

Table A.186: DSA-ACK parameter families

Item	Parameter	Reference	Status	Support
1	Service flow error set	[3] 6.3.2.3.12 [3] 11.13.4	m	
Comments:				

Table A.187: DSA-ACK TLV

Item	Parameter	Reference	Status	Support
1	HMAC tuple	[3] 6.3.2.3.12		
Comments:				

A.9.2.1.24 DSC-REQ, DSC-RSP and DSC-ACK messages

Table A.188: PDU: DSC-REQ

Item	Parameter	Reference	Status	Support
1	Management Message type = 14	[3] 6.3.2.3.13	m	
2	Transaction ID	[3] 6.3.2.3.13	m	
3	TLV Encoded Information see table A.190	[3] 6.3.2.3.13	m	
Comments:				

Table A.189: DSC-REQ parameter families

Item	Parameter	Reference	Status	Support
1	Service flow parameters	[3] 6.3.2.3.13 [3] 11.13	m	
Comments:				

Table A.190: DSC-REQ TLV

Item	Parameter	Reference	Status	Support
1	HMAC tuple	[3] 6.3.2.3.13	m	
Comments:				

Table A.191: PDU: DSC-RSP

Item	Parameter	Reference	Status	Support
1	Management Message type = 15	[3] 6.3.2.3.14	m	
2	Transaction ID	[3] 6.3.2.3.14	m	
3	Confirmation code	[3] 6.3.2.3.14	m	
4	TLV Encoded Information see table A.193	[3] 6.3.2.3.14	m	
Comments:				

Table A.192: DSC-RSP parameter families

Item	Parameter	Reference	Status	Support
1	Service flow parameters	[3] 6.3.2.3.14 [3] 11.13	m	
2	Convergence sublayer parameter encodings	[3] 6.3.2.3.14 [3] 11.13.21	m	
Comments:				

Table A.193: DSC-RSP TLV

Item	Parameter	Reference	Status	Support
1	HMAC tuple	[3] 6.3.2.3.14	m	
Comments:				

Table A.194: PDU: DSC-ACK

Item	Parameter	Reference	Status	Support
1	Management Message type = 16	[3] 6.3.2.3.15	m	
2	Transaction ID	[3] 6.3.2.3.15	m	
3	Confirmation code	[3] 6.3.2.3.15	m	
4	TLV Encoded Information see table A.196	[3] 6.3.2.3.15	m	
Comments:				

Table A.195: DSC-ACK parameter families

Item	Parameter	Reference	Status	Support
1	Service flow error set	[3] 6.3.2.3.15 [3] 11.13.4	m	
Comments:				

Table A.196: DSC-ACK TLV

Item	Parameter	Reference	Status	Support
1	HMAC tuple	[3] 6.3.2.3.15	m	
Comments:				

A.9.2.1.25 DSD-REQ and DSD-RSP messages

Table A.197: PDU: DSD-REQ

Item	Parameter	Reference	Status	Support
1	Management Message type = 17	[3] 6.3.2.3.16	m	
2	Transaction ID	[3] 6.3.2.3.16	m	
3	Service flow ID	[3] 6.3.2.3.16	m	
4	TLV Encoded Information see table A.198	[3] 6.3.2.3.16	m	
Comments:				

Table A.198: DSD-REQ TLV

Item	Parameter	Reference	Status	Support
1	HMAC tuple	[3] 6.3.2.3.16	m	
Comments:				

Table A.199: PDU: DSD-RSP

Item	Parameter	Reference	Status	Support
1	Management Message type = 18	[3] 6.3.2.3.17	m	
2	Transaction ID	[3] 6.3.2.3.17	m	
3	Confirmation code	[3] 6.3.2.3.17	m	
4	Service flow ID	[3] 6.3.2.3.17	m	
5	TLV Encoded Information see table A.200	[3] 6.3.2.3.17	m	
Comments:				

Table A.200: DSD-RSP TLV

Item	Parameter	Reference	Status	Support
1	HMAC tuple	[3] 6.3.2.3.17	m	
Comments:				

A.9.2.2 Additional fields of MAC PDUs in MESH topology

Table A.201: PDU: MSH-NCFG

Item	Parameter	Reference	Status	Support
1	Management Message type = 39	[3] 6.3.2.3.35	m	
2	NumNbEntries	[3] 6.3.2.3.35	m	
3	NumBSEntries	[3] 6.3.2.3.35	m	
4	Embedded Packet Flag	[3] 6.3.2.3.35	m	
5	Xmt Power	[3] 6.3.2.3.35	m	
6	Xmt Antenna	[3] 6.3.2.3.35	m	
7	NetEntry MAC Address Flag	[3] 6.3.2.3.35	m	
8	Network base channel	[3] 6.3.2.3.35	m	
9	NetConfig count	[3] 6.3.2.3.35	m	
10	Timestamp	[3] 6.3.2.3.35	m	
11	NetConfig schedule info	[3] 6.3.2.3.35	m	
12	Netentry MAC address	[3] 6.3.2.3.35	m	
13	BS Node ID	[3] 6.3.2.3.35	m	
14	Number of hops	[3] 6.3.2.3.35	m	
15	Xmt energy/bit	[3] 6.3.2.3.35	m	
16	Nbr Node ID	[3] 6.3.2.3.35	m	
17	MSH Nbr physical IE	[3] 6.3.2.3.35	m	
18	MSH Nbr logical IE	[3] 6.3.2.3.35	m	
19	MSH NCFG embedded data	[3] 6.3.2.3.35	m	
Comments:				

NOTE: This list does not show that some fields may be absent or may be duplicated in a given instance of this PDU, depending on the presence of flags and number of entries of a given type.

Table A.202: PDU: MSH-NENT

Item	Parameter	Reference	Status	Support
1	Management Message type = 40	[3] 6.3.2.3.36	m	
2	Type	[3] 6.3.2.3.36	m	
3	Xmt counter	[3] 6.3.2.3.36	m	
4	Xmt Power	[3] 6.3.2.3.36	m	
5	Xmt Antenna	[3] 6.3.2.3.36	m	
6	MSH NENT Request IE	[3] 6.3.2.3.36	m	
Comments:				

Table A.203: PDU: MSH-DSCH

Item	Parameter	Reference	Status	Support
1	Management Message type = 41	[3] 6.3.2.3.37	m	
2	Coordination flag	[3] 6.3.2.3.37	m	
3	Grant/Request Flag	[3] 6.3.2.3.37	m	
4	Sequence counter	[3] 6.3.2.3.37	m	
5	No Requests	[3] 6.3.2.3.37	m	
6	No Availabilities	[3] 6.3.2.3.37	m	
7	No Grants	[3] 6.3.2.3.37	m	
8	MSH DSCH scheduling IE	[3] 6.3.2.3.37	m	
9	MSH DSCH request IE	[3] 6.3.2.3.37	m	
10	MSH DSCH availability IE	[3] 6.3.2.3.37	m	
11	MSH DSCH grant IE	[3] 6.3.2.3.37	m	
Comments:				

Table A.204: PDU: MSH-CSCH

Item	Parameter	Reference	Status	Support
1	Management Message type = 42	[3] 6.3.2.3.38	m	
2	Configuration sequence number	[3] 6.3.2.3.38	m	
3	Grant/Request Flag	[3] 6.3.2.3.38	m	
4	Frame schedule flag	[3] 6.3.2.3.38	m	
5	Configuration flag	[3] 6.3.2.3.38	m	
6	NumFlowEntries	[3] 6.3.2.3.38	m	
7	UplinkFlow	[3] 6.3.2.3.38	m	
8	DownlinkFlow	[3] 6.3.2.3.38	m	
9	Padding Nibble	[3] 6.3.2.3.38	m	
10	No link updates	[3] 6.3.2.3.38	m	
11	Node Index self	[3] 6.3.2.3.38	m	
12	Node Index parent	[3] 6.3.2.3.38	m	
13	Uplink Burst Profile	[3] 6.3.2.3.38	m	
14	Downlink Burst Profile	[3] 6.3.2.3.38	m	
15	Sponsor node	[3] 6.3.2.3.38	m	
16	Downlink Burst Profile	[3] 6.3.2.3.38	m	
17	Uplink Burst Profile	[3] 6.3.2.3.38	m	
Comments:				

Table A.205: PDU: MSH-CSCF

Item	Parameter	Reference	Status	Support
1	Management Message type = 43	[3] 6.3.2.3.39	m	
2	Configuration sequence number	[3] 6.3.2.3.39	m	
3	NumberOfChannels	[3] 6.3.2.3.39	m	
4	Channel index	[3] 6.3.2.3.39	m	
5	Padding Nibble	[3] 6.3.2.3.39	m	
6	No of nodes	[3] 6.3.2.3.39	m	
7	Node ID	[3] 6.3.2.3.39	m	
8	NumOfChildren	[3] 6.3.2.3.39	m	
9	Child index	[3] 6.3.2.3.39	m	
10	Uplink Burst Profile	[3] 6.3.2.3.39	m	
11	Downlink Burst Profile	[3] 6.3.2.3.39	m	
Comments:				

A.10 Parameters and timers

Table A.206: SS Timers MAC layer - PMP

Item	Timer name MAC layer	Reference	Status	Support	Value	
					Allowed range	Supported
1	T1	[3] 10.1	m		< 5 DCD interval	
2	T2	[3] 10.1	m		< 5 ranging interval	
3	T3	[3] 10.1	m		< 200 ms	
4	T4	[3] 10.1	m		30 s to 35 s	
5	T6	[3] 10.1	m		< 3 s	
6	T7	[3] 10.1	m		< 1 s	
7	T8	[3] 10.1	m		< 300 ms	
8	T10	[3] 10.1	m		< 3 s	
9	T12	[3] 10.1	m		< 5 UCD interval	
10	T14	[3] 10.1	m		< 200 ms	
11	T16	[3] 10.1	m		> 10 ms	
12	T18	[3] 10.1	m		< 300 ms or T9	
13	T19	[3] 10.1	m		?	
14	T20	[3] 10.1	m		> 2 ms	
15	T21	[3] 10.1	m		< 10 s	
16	T22	[3] 10.1	Ca.206.1		< 500 ms	
17	T27	[3] 10.1	m		10 ms to 200 ms	
Ca.206.1: IF A18/3 THEN m ELSE n/a						
Comments:						

Table A.207: Privacy (PKM) Related Timers

Item	Timer name	Reference	Status	Support	Value	
					Allowed range	Supported
1	AK Lifetime (PKM)	[3] 10.2; [3] 10.2	m		Ca.207.1	
2	TEK Lifetime (PKM)	[3] 10.2; [3] 10.2	m		Ca.207.2	
3	Authorize Wait Timeout (PKM)	[3] 10.2	m		2 s to 30 s	
4	Reauthorize Wait Timeout (PKM)	[3] 10.2	m		2 s to 30 s	
5	Authorization Grace Time (PKM)	[3] 10.2	m		Ca.207.3	
6	Operational Wait Timeout (PKM)	[3] 10.2	m		1 s to 10 s	
7	Rekey Wait Timeout (PKM)	[3] 10.2	m		1 s to 10 s	
8	TEK Grace Time (PKM)	[3] 10.2	m		Ca.207.4	
9	Authorize Reject Wait Timeout (PKM)	[3] 10.2	m		10 s to 600 s	
c207.01: IF (test mode) THEN 5 min ELSE 1 day to 70 days c207.02: IF (test mode) THEN 3 min ELSE 30 min to 7 days c207.03: IF (test mode) THEN 60 s ELSE 5 min to 35 days c207.04: IF (test mode) THEN 60 s ELSE 5 min to 3,5 days						
Comments: The TEK Grace Time shall be less than half the TEK Lifetime.						

Table A.208: BS Timers MAC layer - PMP

Item	Timer name MAC layer	Reference	Status	Support	Value	
					Allowed range	Supported
1	T5	[3] 10.1	m		< 2 s	
2	T7	[3] 10.1	m		< 1 s	
3	T8	[3] 10.1	m		< 300 ms	
4	T9	[3] 10.1	m		> 300 ms	
5	T10	[3] 10.1	m		< 3 s	
6	T13	[3] 10.1	m		> 15 min	
7	T15	[3] 10.1	m		> 20 ms	
8	T17	[3] 10.1	m		> 5 min	
9	T22	[3] 10.1	Ca.208.1		< 500 ms	
Ca.208.1: IF A65/3 THEN m ELSE n/a						
Comments:						

Table A.209: SS Timers MAC layer - MESH

Item	Timer name Physical layer	Reference	Status	Support	Value	
					Allowed range	Supported
1	T23	[3] 10.1			> 1s	
2	T24	[3] 10.1			120 s	
3	T25	[3] 10.1			1s	
Comments:						

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