WiMAX Forum® Conformance Statements

WiMAX Forum® Mobile Protocol Implementation Conformance Statement (PICS) Proforma

WMF-T24-001-R010v09

WMFApproved

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List of Tables

1. Introduction

The purpose of this PICS proforma is to specify the list of protocol elements required as realization of WiMAX Forum® Mobile System Profile [4] and Trait Packages [6] based on the WiMAX Forum Standard Reference [1]. PICS proforma is also a mechanism whereby a supplier of an implementation of the requirements may provide information about the implementation in a standardized manner.

1.1 Scope

The present document specifies the Protocol Implementation Conformance Statement (PICS) for Mobile WiMAX per Mobile WiMAX System Profile for conformance of Mobile WiMAX compliant systems.

1.2 References

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

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

[1] WiMAX Forum® Mobile System Profile WMF-T23-004-R010, WiMAX Forum® Technical Working Group.

[2] ISO/IEC 9646-1: “Information technology – Open Systems Interconnection – Conformance testing methodology and framework – Part 1: General concepts”.

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

[4] WiMAX Forum® Mobile System Profile WMF-T23-001-R010, WiMAX Forum® Technical Working Group

[5] WiMAX Forum® Mobile Radio Specification, WMF-T23-005-R015, WiMAX Forum® Technical Working Group

[6] IEEE Std 802.16-2009, IEEE Standard for Local and metropolitan area networks - Part 16: Air Interface for Broadband Wireless Access Systems.

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1.3 Definitions and Abbreviations

1.3.1 Abbreviations

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

1.4 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 2.1.

2. Annex A (normative): Protocol ICS (PICS) for Mobile WiMAX

2.1 Guidance for completing PICS Proforma

2.1.1 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 reference [1] may provide information about the implementation in a standardized manner. The PICS proforma does not cover every possible compliant Mobile WiMAX implementation, but only those implementations that are compliant with the system profiles as defined in [4].

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

- guidance for completing the PICS proforma;
- identification and implementation;
- identification of the standard;
- global statement of conformance
- roles
- Mobile Station (MS)
- Base Station (BS)
- List of MAC PDUs
- PDU Fields

2.1.2 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 section of [1], from which the requirement for the capability is derived.

Status column

- The following notations, defined in [6], are used in the status column. For those items listed in “WiMAX Forum Mobile PICS Release 1.0 Timeline Annex”, the Y or IO status of the required column is valid only after the

validation of its corresponding package starts. The timeline of the validation start is provided in the Timeline Annex.

m	Explicitly shown as mandatory in the standard or in WiMAX Forum. The TLV marked as 'm' is required to be implemented (receiving or transmission) for interoperability or satisfying the features mandated by the system profile. MS or BS shall be capable of interpreting the TLV at reception and sending the TLV when necessary. Not all TLVs mandated by PICS must necessarily be included in all instances of a message bearing those TLVs. If a mandatory TLV does not appear in a message the receiver of the message shall use the default value of the TLV if one exists. Status assigned to a TLV shall not be interpreted as the status of the whole associated functionality.
o	Not shown explicitly as mandatory both in the standard and in WiMAX Forum, explicitly mentioned as optional in the standard or is not explicitly mentioned but has capability negotiations. It may or may not be implemented. . The TLV marked as 'o' is not required to be implemented for interoperability at the features mandated by the system profile. All TLVs specified in the standard but missing in PICS shall be interpreted as 'o'. The default value of an optional TLV has no meaning.
oi	Qualified option – for mutually exclusive or selectable options from a set. One or more of the options from the set shall be supported.
IO-NNNN	Inter-operable Options: Item belongs to NNNN group of features for which it is requested to provide testing procedure and distinct labeling of BS equipment. More specifically The item is not required to get general "WiMAX certified" label and Is required to get distinct "WiMAX certified with NNNN capability" label.
IOMS-NNNN	Inter-operable Options: Item belongs to NNNN group of features for which it is requested to provide testing procedure and distinct labeling of MS equipment. More specifically The item is not required to get general "WiMAX certified" label and Is required to get distinct "WiMAX certified with NNNN capability" label.

The following Inter-operable Options are defined and used in this document.

1. IO-MIMO: Group of Inter-operable Option features related to Multiple Input Multiple Output (MIMO) operation.
2. IO-BF: Group of Inter-operable Option features related to Beam Forming (BF) operation.
3. IO/IOMS-MBS: Group of Inter-operable Option features related to Multicast and Broadcast Services (MBS) operation.
4. IO/IOMS-MBS2: Group 2 of Inter-operable Option features related to Multicast and Broadcast Services (MBS) operation.
5. IO/IOMS-MBS3: Group 3 of Inter-operable Option features related to Multicast and Broadcast Services (MBS) operation.
6. IO/IOMS-MBS4: Group 4 of Inter-operable Option features related to Multicast and Broadcast Services (MBS) operation.
7. IO-ETHx (x = 1, 2, 3): Groups of features on three Inter-operable options related to Ethernet CS IO-ETH1, IO-ETH2, IO-ETH3.

8. IO-QoS: Group of Inter-operable Option features related to MS initiated dynamic SF creation and change.
9. IO-RNG_SPLIT: Groups of inter-operable features related to the splitting ("fragmentation") of the RNG-REQ in case of HO
10. IOMS-RNG_SPLIT: Groups of inter-operable features related to the splitting ("fragmentation") of the RNG-REQ in case of HO
11. IO-SND: Group of Inter-operable Option features related to sounding.

Support column

- The support column shall be filled in by the supplier of the implementation. The following common notations, defined in [1], are used for the support column:

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

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

Support of specific MAC PDUs or fields does not automatically mean support of the corresponding functionality. It means only that BS(MS) is capable of transmitting or receiving / parsing the message of specific format.

2.1.3 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 Section 2.1.2.
However, tables related to Mobile Station shall only be completed for Mobile Station 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.

2.2 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.

2.2.1 Date of Statement

Date of statement (MM/DD/YYYY):	

2.2.2 Implementation Under Test (IUT) identification

IUT name:	
IUT version:	

2.2.3 System Under Test (SUT) identification

SUT name:	
Hardware configuration:	
Operating system:	

2.2.4 Product supplier

Name:	

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

2.2.5 Client (if different from product supplier)

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

2.2.6 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:	

2.3 Identification of the standard

This PICS proforma applies to the IEEE802.16-2004 as corrected by Corrigendum and amended by 802.16e consisting of the following normative references:

- Mobile WiMAX Physical Layer: [1]
- Mobile WiMAX Data Logical Control Layer: [1]

2.4 Global statement of conformance

Are all mandatory capabilities implemented? (Yes/No)	

Note: Answering "No" to this question indicates non-conformance to the Mobile WiMAX specification. 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.

2.5 System profiles

Table 1 - System profiles

Item	Role	Reference	Status	Support
1	WiMAX Forum® Mobile System Profile	[4]	m	
Comments:				

Table 2 - Roles

Item	Role	Reference	Status	Support
1	Mobile Station (MS)		oi.3	
2	Base Station (BS)		oi.3	
Comments:				

2.5.1 WirelessMAN-OFDMA 802.16e

Table 3 - Band Class Group

WirelessMAN-OFDMA 802.16e				
Item	**Capability**	**Reference**	**Status**	**Support**
1.	Prof1.A_2.3 – 8.75 MHz channel PHY (2.3-2.4 GHz)	[4]	oi.4	
2.	Prof1.B_2.3 – 5 AND 10 MHz channel PHY (2.3-2.4 GHz)	[4]	oi.4	
3.	Prof2.A_2.305 – 3.5 MHz channel PHY (2.305-2.320, 2.345-2.360 GHz)	[4]	oi.4	
4.	Prof2.B_2.305 – 5 MHz channel PHY (2.305-2.320, 2.345-2.360 GHz)	[4]	oi.4	
5.	Prof2.C_2.305 – 10 MHz channel PHY (2.305-2.320, 2.345-2.360 GHz)	[4]	oi.4	
6.	Prof3.A_2.496 – 5 AND 10 MHz channel PHY (2.496-2.69GHz)	[4]	oi.4	
7.	Prof4.A_3.3 – 5 MHz channel PHY (3.3-3.4 GHz)	[4]	oi.4	
8.	Prof4.B_3.3 – 7 MHz channel PHY (3.3-3.4 GHz)	[4]	oi.4	
9.	Prof4.C_3.3 – 10 MHz channel PHY (3.3-3.4 GHz)	[4]	oi.4	
10.	Prof5.A_3.4 – 5 MHz channel PHY (3.4-3.8 GHz)	[4]	oi.4	
	Prof5L.A_3.4 – 5 MHz channel PHY (3.4-3.6 GHz)		oi.4	
	Prof5H.A_3.4 – 5 MHz channel PHY (3.6-3.8 GHz)		oi.4	
11.	Prof5.B_3.4 – 7 MHz channel PHY (3.4-3.8 GHz)	[4]	oi.4	
	Prof5L.B_3.4 –7MHz channel PHY (3.4-3.6 GHz)		oi.4	
	Prof5H.B_3.4 – 7 MHz channel PHY (3.6-3.8 GHz)		oi.4	
12.	Prof5.C_3.4 – 10 MHz channel PHY (3.4-3.8 GHz)	[4]	oi.4	
	Prof5L.C_3.4 –10 MHz channel PHY (3.4-3.6 GHz)		oi.4	

WirelessMAN-OFDMA 802.16e				
Item	**Capability**	**Reference**	**Status**	**Support**
	Prof5H.C_3.4 – 10 MHz channel PHY (3.6-3.8 GHz)		oi.4	
Comments: With regards to Items 2 and 6, the BS shall support 5 MHz or 10 MHz or both bandwidth sizes.				

Table 4 - Power classes

WirelessMAN-OFDMA 802.16e					
Item	**Capability**		**Reference**	**Status**	**Support**
	Transmit Power (dBm) for 16-QAM	**Transmit Power (dBm) for QPSK**			
1	18 <= PTx,max < 21	20 <= PTx,max < 23	[4]	oi.5	
2	21 <= PTx,max < 25	23 <= PTx,max < 27	[4]	oi.5	
3	25 <= PTx,max < 30	27 <= PTx,max < 30	[4]	oi.5	
4	30 <= PTx,max	30 <= PTx,max	[4]	oi.5	
Comments: The Power Classes listed in this table is developed to cover the complete target range of power levels while different interpretation of applicable modulation levels is addressed through a dual range requirement for QPSK and 16QAM per Power Class.					

NOTE: The maximum MS output power may be limited by the value included in a MS Maximum Transmission Power Limitation Control TLV that may be included in the UCD.

Table 5 - Duplexing modes

WirelessMAN-OFDMA 802.16e				
Item	**Capability**	**Reference**	**Status**	**Support**
1	TDD Time Division Duplexing	6.3.7.2 [4]	m	
Comments:				

In Table 6, RF channels are calculated using the following formula:

$$RFChannel_n = F_{start} + n \cdot \Delta F_c, \forall n \in N_{range}$$

Where:

F_{start} is the start frequency for the specific band,

ΔF_c is the center frequency step,

N_{range} is the range values for the n parameter

Table 6 - RF Profiles

Mobile Station (MS)							
Item	**RF Profile Name**	**Channel BW (MHz)**	**Center Frequency Step (KHz)**	**Fstart (MHz)**	**Nrange**	**Status**	**Support**
1	Prof1.A_2.3	8.75	250	2304.5	{0, …, 364)	oi.7	
2	Prof1.B_2.3-5	5	250	2302.5	{0, …, 380)	oi.7	
	Prof1.B_2.3-10	10		2305	{0, …, 360)		
3	Prof2.A_2.305	3.5	250	2306.75 and 2346.75	{0, …, 46}	oi.7	
4	Prof2.B_2.305	5	250	2307.5 and 2347.5	{0, …, 40}	oi.7	
5	Prof2.C_2.305	10	250	2310 and 2350	{0, …, 20}	oi.7	
6	Prof3.A_2.496 – 5	5	250	2498.5	{0, …, 756}	oi.7	
	Prof3.A_2.496 – 10	10		2501	{0, …, 736}		
7	Prof4.A_3.3	5	250	3302.5	{0, …, 380)	oi.7	
8	Prof4.B_3.3	7	250	3303.5	{0, …, 372)	oi.7	
9	Prof4.C_3.3	10	250	3305	{0, …, 360)	oi.7	
10	Prof5.A_3.4	5	250	3402.5	{0, …, 1580)	oi.7	
	Prof5L.A_3.4				{0, …, 780)	oi.7	
	Prof5H.A_3.4				{800, …, 1580)	oi.7	
11	Prof5.B_3.4	7	250	3403.5	{0, …, 1572)	oi.7	
	Prof5L.B_3.4				{0, …, 772)	oi.7	
	Prof5H.B_3.4				{800, …, 1572)	oi.7	
12	Prof5.C_3.4	10	250	3405	{0, …, 1560)	oi.7	
	Prof5L.C_3.4				{0, …, 760)	oi.7	
	Prof5H.C_3.4				{800, …, 1560)	oi.7	
Comments: Comprehensive RF raster of this table is only for interoperability purposes and not a basis for any performance testing on RF channel scanning and synchronization to network. RF preferred sets are needed to be developed to be considered as basis for scanning time performance requirements.							

2.5.1.1 Mobile Station

2.5.1.1.1 PHY functions

2.5.1.1.1.1 m Factor

Table 7 - Sampling Factor for MS

Mobile Station (MS)				
Item	**Capability**	**Reference**	**Status**	**Support**
1	8/7	[1] 8.4.2.3	m	
2	28/25	[1] 8.4.2.3	m	
Comments: Item 1 is used for Table 3-1, 3, 8 and 11 and Item 2 is used for Table 3-2, 4, 5, 6, 7, 9, 10 and 12.				

2.5.1.1.1.2 Cyclic Prefix

Table 8 - Cyclic Prefix for MS

Mobile Station (MS)				
Item	**Capability**	**Reference**	**Status**	**Support**
1	1/8	[1]8.4.2.3, [4]	m	
Comments:				

2.5.1.1.1.3 Frame Duration

Table 9 - Frame duration codes for MS

Mobile Station (MS)				
Item	**Capability**	**Reference**	**Status**	**Support**
1	5 msec	[1] 8.4.5.2, [4]	m	
Comments:				

2.5.1.1.1.4 UL and DL Subframe Size

Table 10 - Number of OFDM Symbols in DL and UL

Mobile Station (MS)					
Item	**Capability**	**Value**	**Reference**	**Status**	**Support**
1.	Number of OFDM Symbols in DL and UL for 5 MHz BW	(35, 12)	8.4.4.2, [4]	oi.11	
		(34, 13)			
		(33, 14)			
		(32, 15)			
		(31, 16)			
		(30, 17)			
		(29, 18)			
		(28, 19)			
		(27, 20)			
		(26, 21)			
2.	Number of OFDM Symbols in DL and UL for 10 MHz BW	(35, 12)	8.4.4.2, [4]	oi.11	
		(34, 13)			
		(33, 14)			
		(32, 15)			
		(31, 16)			
		(30, 17)			
		(29, 18)			
		(28, 19)			
		(27, 20)			
		(26, 21)			
3.	Number of OFDM Symbols in DL and UL for 8.75 MHz BW	(30, 12)	8.4.4.2, [4]	oi.11	
		(29, 13)			
		(28, 14)			
		(27, 15)			
		(26, 16)			
		(25, 17)			
		(24,18)			
4.	Number of OFDM Symbols in DL and UL for 3.5 MHz BW	(24, 09)	8.4.4.2, [4]	oi.11	
		(23, 10)			
		(22, 11)			
		(21, 12)			
		(20, 13)			

Mobile Station (MS)					
Item	**Capability**	**Value**	**Reference**	**Status**	**Support**
		(19, 14)			
		(18, 15)			
5.	Number of OFDM Symbols in DL and UL for 7 MHz BW	(24, 09)	8.4.4.2, [4]	oi.11	
		(23, 10)			
		(22, 11)			
		(21, 12)			
		(20, 13)			
		(19, 14)			
		(18, 15)			
6.	Number of OFDM Symbols in DL and UL for 8 MHz BW	(28, 9)	8.4.4.2, [4]	oi.11	
		(27, 10)			
		(26, 11)			
		(25, 12)			
		(24, 13)			
		(23, 14)			
		(22, 15)			
		(21, 16)			
		(20, 17)			
Comments: First value in the pairs is number of symbols in DL subframe and the second value is the number of symbols in UL subframe. If the MS supports one or more oi.11 item, then it shall support all DL/UL number of symbols combinations listed associated with each channel bandwidth.					

2.5.1.1.1.5 Subcarrier Allocation Mode

Table 11 - DL subcarrier allocation for MS

Mobile Station (MS)				
Item	**Capability**	**Reference**	**Status**	**Support**
1	PUSC	8.4.6.1.2.1, [4]	m	
2	PUSC with all subchannels	8.4.6.1.2.1, [4]	m	
3	PUSC with dedicated pilots	8.4.6.1.2.1, 8.4.5.3.4, [4]	m	
4	Not used			
5	AMC 2x3	8.4.6.3, [4]	m	
6	AMC 2x3 with dedicated pilots	8.4.6.3, 8.4.5.3.4, [4]	m	
Comments:				

Table 12 - UL subcarrier allocation for MS

Mobile Station (MS)				
Item	**Capability**	**Reference**	**Status**	**Support**
1	PUSC	8.4.6.2.1, [4]	m	
2	PUSC without subchannel rotation	11.3.1, [4]	m	
3	AMC 2x3	8.4.6.3, [4]	m	
Comments:				

2.5.1.1.1.6 UL Channel Sounding

Table 13 - UL Sounding 1 for MS

Mobile Station (MS)				
Item	**Capability**	**Reference**	**Status**	**Support**
1	Type A with Cyclic shift- support for P values other than 9 and 18	8.4.6.2.7.1	m	
2	Type A with Cyclic shift – Support P values of 9 and 18	8.4.6.2.7.1	m	
3	Type A with Decimation	8.4.6.2.7.1	m	
4	Power Assignment Method: Equal Power (0b00)	8.4.6.2.7.1 8.4.6.2.7.2	m	
Comments:				

Table 14 - UL Sounding 2 for MS

Mobile Station (MS)				
Item	Capability	Reference	Status	Support
1	Sounding response time capability	8.4.6.2.7.1, 11.8.3.7.14, [4]	m	
2	Max number of simultaneous sounding instructions	8.4.6.2.7.1, 11.8.3.7.14, [4]	m	
Comments:				

2.5.1.1.1.7 Ranging and Band Width Request

Table 15 - Initial ranging for MS

Mobile Station (MS)				
Item	**Capability**	**Reference**	**Status**	**Support**
1	Initial Ranging in PUSC zone with 2 symbols	8.4.7.1	m	
2	Initial Ranging using Initial Ranging Code set 1 in PUSC zone with 2 symbols		m	
Comments:				

Table 16 - HO ranging for MS

Mobile Station (MS)				
Item	**Capability**	**Reference**	**Status**	**Support**
1	HO Ranging in PUSC zone with 2 symbols	8.4.7.1	m	
2	HO Ranging using HO Ranging Code set 1 in PUSC zone with 2 symbols		IOMS-RNG_SPLIT for MS	
3	HO Ranging using HO Ranging Code set 2 in PUSC zone with 2 symbols		m	
Comments:				

Table 17 - Periodic Ranging for MS

Mobile Station (MS)				
Item	**Capability**	**Reference**	**Status**	**Support**
1	Periodic Ranging in PUSC zone with 1 symbols	8.4.7.2	m	
Comments:				

Table 18 - BW Request for MS

Mobile Station (MS)				
Item	**Capability**	**Reference**	**Status**	**Support**
1	BW Request in PUSC zone with 1 symbol	8.4.7.2	m	
2	BW Request using BR Ranging Code set 1 in PUSC zone with 1 symbol		m	

Mobile Station (MS)				
Item	**Capability**	**Reference**	**Status**	**Support**
Comments: This table is only related to BW request based on Ranging.				

2.5.1.1.1.8 Fast Feedback

Table 19 - Fast-Feedback/CQI Channel Encoding for MS

Mobile Station (MS)				
Item	**Capability**	**Reference**	**Status**	**Support**
1	6 bits	[3] 8.4.5.4.10.5	m	
Comments:				

Table 20 - Fast-Feedback/CQI Channel Allocation Method for MS

Mobile Station (MS)				
Item	**Capability**	**Reference**	**Status**	**Support**
1	Fast feedback channel allocation using CQICH Allocation IE	[1] 8.4.5.4.12	m	
Comments:				

2.5.1.1.1.9 Channel Coding

Table 21 - Repetition for MS

Mobile Station (MS)				
Item	**Capability**	**Reference**	**Status**	**Support**
1	Repetition	8.4.9.5	m	
Comments: Item 1 is only applicable to Table 34-1, Table 35-1, Table 36-1, (i.e. QPSK ½ for SISO) and Table 41-1 (i.e., QPSK ½ for Matrix-A MIMO).				

Table 22 - Randomization for MS

Mobile Station (MS)				
Item	**Capability**	**Reference**	**Status**	**Support**
1	Randomization	8.4.9.1	m	
Comments:				

Table 23 - Convolutional Code for MS

Mobile Station (MS)				
Item	**Capability**	**Reference**	**Status**	**Support**
1	Tail Biting	8.4.9.2.1	m	
Comments: Convolutional Code shall be only applicable for FCH.				

Table 24 - Convolutional Turbo Code for MS

Mobile Station (MS)				
Item	**Capability**	**Reference**	**Status**	**Support**
1	CTC	8.4.9.2.3 excluding 8.4.9.2.3.5	m	
Comments:				

Table 25 - Interleaving for MS

Mobile Station (MS)				
Item	**Capability**	**Reference**	**Status**	**Support**
1	Interleaving	8.4.9.3	m	
Comments:				

2.5.1.1.1.10 HARQ

Table 26 - HARQ Chase Combining for MS

Mobile Station (MS)				
Item	**Capability**	**Reference**	**Status**	**Support**
1	Chase with CTC	8.4.15.1	m	
2	H-ARQ Category 1 – NO DL aggregation (Wave 1 only) - Minimum HARQ buffer size for DL= 4096 (K=12) - Minimum HARQ buffer size for UL = 16384 (K=20) - Aggregation flag for DL = OFF - Aggregation flag for UL = OFF - Number of DL HARQ channels = 4 - Number of UL HARQ channels = 4 - Max Burst in DL Subframe with HARQ =2 - Max Burst in UL Subframe with HARQ =2	11.8.3.7.19, 11.8.3.7.19.2, 8.4.4.2, 8.4.15.1.3, 11.8.3.7.12	oi.27	
3	H-ARQ Category 1 – NO DL aggregation - Minimum HARQ buffer size for DL = 16384 (K=20) - Minimum HARQ buffer size for UL = 16384 (K=20) - Aggregation flag for DL = OFF - Aggregation flag for UL = OFF - Number of DL HARQ channels = 4 - Number of UL HARQ channels = 4 - Max Burst in DL Subframe with HARQ =2 - Max Burst in UL Subframe with HARQ =2	11.8.3.7.19 & 11.8.3.7.19.2	oi.27	
4	H-ARQ Category 1 – DL aggregation ON - Minimum HARQ buffer size for DL = 16384 (K=20) - Minimum HARQ buffer size for UL = 16384 (K=20) - Aggregation flag for DL = ON - Aggregation flag for UL = OFF - Number of DL HARQ channels = 4 - Number of UL HARQ channels = 4 - Max Burst in DL Subframe with HARQ =2 - Max Burst in UL Subframe with HARQ =2	11.8.3.7.19 & 11.8.3.7.19.2	oi.27	

Mobile Station (MS)				
Item	**Capability**	**Reference**	**Status**	**Support**
5	H-ARQ Category 2 - Minimum HARQ buffer size for DL = 8192 (K=16) - Minimum HARQ buffer size for UL = 16384 (K=20) - Aggregation flag for DL = ON - Aggregation flag for UL = ON - Number of DL HARQ channels = 16 - Number of UL HARQ channels = 8 - Max Burst in DL Subframe with HARQ =5 - Max Burst in UL Subframe with HARQ =2	11.8.3.7.19 & 11.8.3.7.19.2	oi.27	
6	H-ARQ Category 3 - Minimum HARQ buffer size for DL = 16384 (K=20) - Minimum HARQ buffer size for UL = 16384 (K=20) - Aggregation flag for DL = ON - Aggregation flag for UL = ON - Number of DL HARQ channels = 16 - Number of UL HARQ channels = 8 - Max Burst in DL Subframe with HARQ =5 - Max Burst in UL Subframe with HARQ =2	11.8.3.7.19 & 11.8.3.7.19.2	oi.27	
7	H-ARQ Category 4 - Minimum HARQ buffer size for DL = 23170 (K=22) - Minimum HARQ buffer size for UL = 16384 (K=20) - Aggregation flag for DL = ON - Aggregation flag for UL = ON - Number of DL HARQ channels = 16 - Number of UL HARQ channels = 8 - Max Burst in DL Subframe with HARQ =5 - Max Burst in UL Subframe with HARQ =2	11.8.3.7.19 & 11.8.3.7.19.2	oi.27	
8	H-ARQ Category 5 - Minimum HARQ buffer size for DL = 32768 (K=24) - Minimum HARQ buffer size for UL = 16384 (K=20) - Aggregation flag for DL = ON - Aggregation flag for UL = ON - Number of DL HARQ channels = 16 - Number of UL HARQ channels = 10 - Max Burst in DL Subframe with HARQ =5 - Max Burst in UL Subframe with HARQ =2	11.8.3.7.19 & 11.8.3.7.19.2	oi.27	

Mobile Station (MS)				
Item	**Capability**	**Reference**	**Status**	**Support**
9	H-ARQ Category 6 - Minimum HARQ buffer size for DL = 32768 (K=24) - Minimum HARQ buffer size for UL = 23170 (K=22) - Aggregation flag for DL = ON - Aggregation flag for UL = ON - Number of DL HARQ channels = 16 - Number of UL HARQ channels = 10 - Max Burst in DL Subframe with HARQ =5 - Max Burst in UL Subframe with HARQ =2	11.8.3.7.19 & 11.8.3.7.19.2	oi.27	

Mobile Station (MS)				
Item	**Capability**	**Reference**	**Status**	**Support**
10	H-ARQ Category 7 - Minimum HARQ buffer size for DL = 46340 (K=26) - Minimum HARQ buffer size for UL = 23170 (K=22) - Aggregation flag for DL = ON - Aggregation flag for UL = ON - Number of DL HARQ channels = 16 - Number of UL HARQ channels = 10 - Max Burst in DL Subframe with HARQ =5 - Max Burst in UL Subframe with HARQ =2	11.8.3.7.19 & 11.8.3.7.19.2	oi.27	
11	SN for HARQ reordering	11.13.36	m	

Comments:

Note that the HARQ buffer size shall be interpreted as softbits buffer size, i.e. relating to coded data bits and not un-coded. This means the buffer size refers to both the systematic and parity bits transmitted over the air. It is left to vendor's implementation to determine the amount of memory space for each bit of transmitted information. The buffer size is related to buffer size parameter K according to the following Equation.

$$\text{Buffersize} = floor\left[512 * 2^{(K/4)}\right]$$

On Items 2 and 3, a waiver is applicable to total DL buffer size of 16384 for all 4 channels, equivalent to DL buffer size of 4096 (K=12) per channel, for CAT 1 in Wave 1.

With respect to Items 8 and 9, the DL HARQ buffer size for HARQ Category 5 and 6 may be supported with actual memory size of the amount to support full buffer size of DL HARQ Category 4 (that is, the total DL HARQ buffer size corresponding to HARQ Category 4 but with the HARQ buffer management scheme to handle the buffer overflow situation, where the HARQ buffer management scheme is up to vendor implementation).
Allocation with Cat 7 shall not exceed, per frame, 46,340 x 4= 185,360 coded bits.

Relative to items 2-9, the term "burst" refers to "sub-burst".

Item 2 is a waiver applicable to Wave 1 only.

1. BS shall not allocate more than one UL non-HARQ unicast allocation and two UL HARQ unicast allocations for any UL sub-frame for a given MS. If more than one UL non-HARQ bursts (including the non-HARQ unicast allocation and allocation through the CDMA_Allocation_IE) are allocated to an MS in a frame, then the MS may choose to transmit only one of the non-HARQ bursts and ignore the remaining non-HARQ allocation(s).

Table 27 - ACK Channel for MS

Mobile Station (MS)				
Item	**Capability**	**Reference**	**Status**	**Support**
1	ACK channel	8.4.5.4.13	m	
2	HARQ ACK delay for DL burst = 1	11.3.1	m	
Comments:				

2.5.1.1.1.11 Control Mechanism

Table 28 - MS Synchronization

Mobile Station (MS)				
Item	**Capability**	**Reference**	**Status**	**Support**
1	MS UL symbol timing accuracy within ± (Tb/32)/4	8.4.10.1.2	m	
2	MS to BS frequency synchronization tolerance ≤ 2% of the subcarrier spacing	8.4.14.1	m	
Comments:				

2.5.1.1.1.12 Power Control

Table 29 - Closed-loop Power Control for MS

Mobile Station (MS)				
Item	**Capability**	**Reference**	**Status**	**Support**
1	Closed loop power control	8.4.10.3 & 8.4.10.3.1	m	
Comments:				

Table 30 - Open-loop Power Control for MS

Mobile Station (MS)				
Item	**Capability**	**Reference**	**Status**	**Support**
1	Open loop power control	8.4.10.3.2	m	
Comments:				

Table 31 - MS Maximum Transmission Power Limitation Control

Mobile Station (MS)				
Item	**Capability**	**Reference**	**Status**	**Support**
1	MS Maximum Transmission Power Limitation Control	11.3.1	m	
Comments:				

2.5.1.1.1.13 Channel Quality Measurements

Table 32 - CINR Measurement for MS

Mobile Station (MS)				
Item	**Capability**	**Reference**	**Status**	**Support**
1	Physical CINR measurement from the preamble for frequency reuse==1 (feedback type=0b00 and report type=0 and CINR preamble report type=0)	6.3.18, 8.4.5.4.12, 8.4.11.3 and 11.8.3.7.9	m	
2	Physical CINR measurement from the preamble for frequency reuse==3 (feedback type=0b00 and report type=0 and CINR preamble report type=1)	6.3.18, 8.4.5.4.12, 8.4.11.3 and 11.8.3.7.9	m	
3	Physical CINR measurement for a permutation zone from pilot subcarriers (feedback type=0b00 and report type=1 and CINR zone measurement type=0)	6.3.18, 8.4.5.4.12, 8.4.11.3 and 11.8.3.7.9	m	
4	Effective CINR measurement for a permutation zone from pilot subcarriers (feedback type=0b01 and report type=1 and CINR zone measurement type=0)	6.3.18, 8.4.5.4.12, 8.4.11.3 and 11.8.3.7.9	m	
5	Major group indication (applicable to PUSC zone only)	8.4.5.4.12	m	
6	MIMO permutation feedback cycle (applicable to MIMO only)	8.4.5.4.12	m	
Comments: For Enhanced Fast Feedback channel, the coding is defined in 8.4.5.4.10.8.				

Table 33 - RSSI Measurement for MS

Mobile Station (MS)				
Item	**Capability**	**Reference**	**Status**	**Support**
1	RSSI Measurement	8.4.11.2 and 6.3.2.3.50	m	
Comments:				

2.5.1.1.1.14 Modulation

Table 34 - PRBS for MS

Mobile Station (MS)				
Item	**Capability**	**Reference**	**Status**	**Support**
1	PRBS	8.4.9.4.1	m	
Comments:				

Table 35 - Downlink MCS for MS, Convolutional Coding

Mobile Station (MS)				
Item		**Reference**	**Status**	**Support**
1	QPSK (CC) 1/2	11.4.2	m	
Comments:				

Table 36 - Downlink MCS for MS, Convolutional Turbo Code

Mobile Station (MS)				
Item		**Reference**	**Status**	**Support**
1	QPSK (CTC) 1/2	11.4.2	m	
2	QPSK (CTC) 3/4	11.4.2	m	
3	16-QAM (CTC) 1/2	11.4.2	m	
4	16-QAM (CTC) 3/4	11.4.2	m	
5	64-QAM (CTC) 1/2	11.4.2	m	
6	64-QAM (CTC) 2/3	11.4.2	m	
7	64-QAM (CTC) 3/4	11.4.2	m	
8	64-QAM (CTC) 5/6	11.4.2	m	
Comments:				

Table 37 - Uplink MCS for MS, Convolutional Turbo Code

Mobile Station (MS)				
Item		**Reference**	**Status**	**Support**
1	QPSK (CTC) 1/2	11.3.1.1	m	
2	QPSK (CTC) 3/4	11.3.1.1	m	
3	16-QAM (CTC) 1/2	11.3.1.1	m	
4	16-QAM (CTC) 3/4	11.3.1.1	m	
Comments:				

Table 38 - Pilot Modulation for MS

Mobile Station (MS)				
Item	**Capability**	**Reference**	**Status**	**Support**
1	Modulation of pilots in uplink data burst for PUSC permutations	8.4.9.4.3	m	
2	Modulation of pilots in uplink data burst for AMC permutation	8.4.9.4.3	m	
3	Modulation of pilot in uplink Collaborative SM for PUSC permutation		m	
Comments:				

Table 39 - Ranging Modulation for MS

Mobile Station (MS)				
Item	**Capability**	**Reference**	**Status**	**Support**
1	Modulation of the ranging code	8.4.9.4.3.2, 8.4.7.3	m	
Comments:				

2.5.1.1.1.15 MAP Support

Table 40 - MAP for MS

Mobile Station (MS)				
Item	**Capability**	**Reference**	**Status**	**Support**
1	Normal DL-MAP.	6.3.2.3.2	m	
2	Normal UL-MAP	6.3.2.3.4	m	
3	Compressed DL-MAP	8.4.5.6.1	m	
4	Compressed UL-MAP	8.4.5.6.2	m	
5	Sub-DL-UL-MAP in first zone	6.3.2.3.60	m	
6	MBS MAP message	6.3.2.3.57	IOMS-MBS	
Comments:				

Table 41 - MAP Features for MS

Mobile Station (MS)				
Item	**Capability**	**Reference**	**Status**	**Support**
1	CID in DL-MAP IE in DL-MAP or Compressed DL-MAP	8.4.5.3.7	m	
2	RCID IE in DL-MAP IE in SUB-DL-UL-MAP	8.4.5.3	m	
3	UL allocation start IE	8.4.5.4.15	m	
4	Space-Time Coding (STC)/Zone switch IE	8.4.5.3.4,	m	
5	HARQ and Sub-MAP pointer IE in compressed DL map	8.4.5.3.10	m	
6	UL Zone Switch IE	8.4.5.4.7	m	
Comments:				

2.5.1.1.1.16 Multiple Input Multiple Output (MIMO)

Table 42 - Supported Features for DL PUSC MIMO for MS

Mobile Station (MS)				
Item	**Capability**	**Reference**	**Status**	**Support**
1	2-antenna, matrix A	8.4.8.1.2.1.1 8.4.8.1.4	m	
2	2-antenna, matrix B, vertical encoding	84.8.1.4, 8.4.8.1. .2.1.3	m	
Comments:				

Table 43 - Supported Features for UL PUSC MIMO for MS

Mobile Station (MS)				
Item	**Capability**	**Reference**	**Status**	**Support**
1	Collaborative SM for two MS with single transmit antenna	8.4.8.1.5	m	
2	Capable of generating pilot pattern A or B	8.4.8.1.5	m	
Comments:				

Table 44 - MIMO Feedback for MS

Mobile Station (MS)				
Item	**Capability**	**Reference**	**Status**	**Support**
1	Fast DL measurement feedback with more than one Rx antennas	8.4.5.4.10.6 8.4.5.4.10.1 8.4.5.4.10.5	m	
2	Mode selection feedback with 6 bits	8.4.5.4.10.8	m	
Comments:				

Table 45 - HARQ DL support for MIMO for MS

Mobile Station (MS)				
Item	**Capability**	**Reference**	**Status**	**Support**
1	MIMO DL Chase Combining	8.4.5.3.21	m	
Comments:				

Table 46 - HARQ UL support for MIMO for MS

Mobile Station (MS)				
Item	**Capability**	**Reference**	**Status**	**Support**
1	MIMO UL Chase Combining	8.4.5.4.24	m	
Comments:				

2.5.1.1.1.17 MS Minimum Performance Requirements

Table 47 - MS Minimum Performance

Mobile Station (MS)				
Item	**Capability**	**Reference**	**Status**	**Support**
1	SSTTG <= 50 usec	8.4.4.2	m	
2	SSRTG <= 50 usec	8.4.4.2	m	
3	Maximum concurrent bursts in a downlink sub-frame = 10	8.4.4.2, 11.7.8.13	m	
4	Maximum bursts in a downlink sub-frame = 16	8.4.4.2	m	
Comments:				

Table 48 - Max Number of Zones in DL and UL Subframes

Mobile Station (MS)				
Item	**Capability**	**Reference**	**Status**	**Support**
1	Maximum numbers of zones UL = 3		m	
2	Maximum numbers of zones DL = 5	8.4.4.2	m	
Comments: The numbers are the same as the number of UL/DL Zone Switch IEs plus 1. In the cases that Uplink subframe starts with Zone Switch IE, the number of uplink zones is the same as the number of Zone Switch IEs.				

Table 49 - Measurement Processes and CQI Channels

Mobile Station (MS)				
Item	**Capability**	**Reference**	**Status**	**Support**
1	Maximum numbers of CQI Channels transmitted by an MS per frame = 2		m	
2	Maximum number of concurrent CINR measurement processes = 2	8.4.4.2	m	
Comments:				

Table 50 - Max MS Sensitivity Level for Convolutional Encoding 3.5 MHz Bandwidth, DL PUSC

BW (MHz)	Sensitivity (dBm)	Reference	Status	Support
QPSK 1/2	-90.8		m	
Note: This table is applicable to Table 3-3 only.				
Comments: Equation (149b) of Section 8.4.13.1.1 in [1] and Table 84 in [4] are used for calculation of the numbers. Sensitivity numbers are calculated based on assumption of repetition factor R = 1. Only applicable for FCH. FCH has repetition factor of 4, means sensitivity improves ~6dB. RCT test is recommended.				

Table 51 - Max MS Sensitivity Level for Convolutional Encoding 5 MHz Bandwidth, DL PUSC

BW (MHz)	Sensitivity (dBm)	Reference	Status	Support
QPSK 1/2	-89.4		m	
Note: This table is applicable to Table 3-2, Table 3-4, Table 3-6, Table 3-7 and Table 3-10 only.				
Comments: Equation (149b) of Section 8.4.13.1.1 in [1] and Table 84 in [4] are used for calculation of the numbers. Sensitivity numbers are calculated based on assumption of repetition factor R = 1. Only applicable for FCH. FCH has repetition factor of 4, means sensitivity improves ~6dB. RCT test is recommended.				

Table 52 - Max MS Sensitivity Level for Convolutional Encoding 7 MHz Bandwidth, DL PUSC

BW (MHz)	Sensitivity (dBm)	Reference	Status	Support
QPSK 1/2	-87.8		m	
Note: This table is applicable to Table 3-8 and Table 3-11 only.				
Comments: Equation (149b) of Section 8.4.13.1.1 in [1] and Table 84 in [4] are used for calculation of the numbers. Sensitivity numbers are calculated based on assumption of repetition factor R = 1. Only applicable for FCH. FCH has repetition factor of 4, means sensitivity improves ~6dB. RCT test is recommended.				

Table 53 - Max MS Sensitivity Level for Convolutional Encoding 8.75 MHz Bandwidth, DL PUSC

BW (MHz)	Sensitivity (dBm)	Reference	Status	Support
QPSK 1/2	-86.9		m	
Note: This table is applicable to Table 3-1 only.				
Comments: Equation (149b) of Section 8.4.13.1.1 in [1] and Table 84 in [4] are used for calculation of the numbers. Sensitivity numbers are calculated based on assumption of repetition factor R = 1. Only applicable for FCH. FCH has repetition factor of 4, means sensitivity improves ~6dB. RCT test is recommended.				

Table 54 - Max MS Sensitivity Level for Convolutional Encoding 10 MHz Bandwidth, DL PUSC

BW (MHz)	Sensitivity (dBm)	Reference	Status	Support
QPSK 1/2	-86.4		m	
Note: This table is applicable to Table 3-2, Table 3-5, Table 3-6, Table 3-9, Table 3-12 only.				
Comments: Equation (149b) of Section 8.4.13.1.1 in [1] and Table 84 in [4] are used for calculation of the numbers. Sensitivity numbers are calculated based on assumption of repetition factor R = 1. Only applicable for FCH. FCH has repetition factor of 4, means sensitivity improves ~6dB. RCT test is recommended.				

Table 55 - Max MS Sensitivity Level for Convolutional Turbo Code 3.5 MHz Bandwidth, DL PUSC

BW (MHz)	Sensitivity (dBm)	Reference	Status	Support
QPSK 1/2	-92.9		m	
QPSK 3/4	-89.5		m	
16-QAM 1/2	-87.2		m	
16-QAM 3/4	-83.1		m	
64-QAM 1/2	-82.0		m	
64-QAM 2/3	-78.9		m	
64-QAM 3/4	-77.8		m	
64-QAM 5/6	-75.9		m	
Comments: Equation (149b) of Section 8.4.13.1.1 in [1] and Table 84 in [4] are used for calculation of the numbers. Sensitivity numbers are calculated based on assumption of repetition factor R = 1.				

Table 56 - Not used

Table 57 - Max MS Sensitivity Level for Convolutional Turbo Code 3.5 MHz Bandwidth, DL AMC

BW (MHz)	Sensitivity (dBm)	Reference	Status	Support
QPSK 1/2	-92.8		m	
QPSK 3/4	-89.4		m	
16-QAM 1/2	-87.1		m	
16-QAM 3/4	-83.0		m	
64-QAM 1/2	-81.9		m	
64-QAM 2/3	-78.8		m	
64-QAM 3/4	-77.7		m	
64-QAM 5/6	-75.8		m	
Comments: Equation (149b) of Section 8.4.13.1.1 in [1] and Table 84 in [4] are used for calculation of the numbers. Sensitivity numbers are calculated based on assumption of repetition factor R = 1.				

Table 58 - Max MS Sensitivity Level for Convolutional Turbo Code 5 MHz Bandwidth, DL PUSC

BW (MHz)	Sensitivity (dBm)	Reference	Status	Support
QPSK 1/2	-91.5		m	
QPSK 3/4	-88.1		m	
16-QAM 1/2	-85.8		m	
16-QAM 3/4	-81.7		m	
64-QAM 1/2	-80.6		m	
64-QAM 2/3	-77.5		m	
64-QAM 3/4	-76.4		m	
64-QAM 5/6	-74.5		m	
Comments: Equation (149b) of Section 8.4.13.1.1 in [1] and Table 84 in [4] are used for calculation of the numbers. Sensitivity numbers are calculated based on assumption of repetition factor R = 1.				

Table 59 - Not used

Table 60 - Max MS Sensitivity Level for Convolutional Turbo Code 5 MHz Bandwidth, DL AMC

BW (MHz)	Sensitivity (dBm)	Reference	Status	Support
QPSK 1/2	-91.3		m	
QPSK 3/4	-87.9		m	
16-QAM 1/2	-85.6		m	
16-QAM 3/4	-81.5		m	
64-QAM 1/2	-80.4		m	
64-QAM 2/3	-77.3		m	
64-QAM 3/4	-76.2		m	
64-QAM 5/6	-74.3		m	
Comments: Equation (149b) of Section 8.4.13.1.1 in [1] and Table 84 in [4] are used for calculation of the numbers. Sensitivity numbers are calculated based on assumption of repetition factor R = 1.				

Table 61 - Max MS Sensitivity Level for Convolutional Turbo Code 7 MHz Bandwidth, DL PUSC

BW (MHz)	Sensitivity (dBm)	Reference	Status	Support
QPSK 1/2	-89.9		m	
QPSK 3/4	-86.5		m	
16-QAM 1/2	-84.2		m	
16-QAM 3/4	-80.1		m	
64-QAM 1/2	-79.0		m	
64-QAM 2/3	-75.9		m	
64-QAM 3/4	-74.8		m	
64-QAM 5/6	-72.9		m	
Comments: Equation (149b) of Section 8.4.13.1.1 in [1] and Table 84 in [4] are used for calculation of the numbers. Sensitivity numbers are calculated based on assumption of repetition factor R = 1.				

Table 62 - Not used

Table 63 - Max MS Sensitivity Level for Convolutional Turbo Code 7 MHz Bandwidth, DL AMC

BW (MHz)	Sensitivity (dBm)	Reference	Status	Support
QPSK 1/2	-89.8		m	
QPSK 3/4	-86.4		m	
16-QAM 1/2	-84.1		m	
16-QAM 3/4	-80.0		m	
64-QAM 1/2	-78.9		m	
64-QAM 2/3	-75.8		m	
64-QAM 3/4	-74.7		m	
64-QAM 5/6	-72.8		m	
Comments: Equation (149b) of Section 8.4.13.1.1 in [1] and Table 84 in [4] are used for calculation of the numbers. Sensitivity numbers are calculated based on assumption of repetition factor R = 1.				

Table 64 - Max MS Sensitivity Level for Convolutional Turbo Code 8.75 MHz Bandwidth, DL PUSC

BW (MHz)	Sensitivity (dBm)	Reference	Status	Support
QPSK 1/2	-89.0		m	
QPSK 3/4	-85.6		m	
16-QAM 1/2	-83.3		m	
16-QAM 3/4	-79.2		m	
64-QAM 1/2	-78.1		m	
64-QAM 2/3	-75.0		m	
64-QAM 3/4	-73.9		m	
64-QAM 5/6	-72.0		m	
Comments: Equation (149b) of Section 8.4.13.1.1 in [1] and Table 84 in [4] are used for calculation of the numbers. Sensitivity numbers are calculated based on assumption of repetition factor R = 1.				

Table 65 - Not used

Table 66 - Max MS Sensitivity Level for Convolutional Turbo Code 8.75 MHz Bandwidth, DL AMC

BW (MHz)	Sensitivity (dBm)	Reference	Status	Support
QPSK 1/2	-88.8		m	
QPSK 3/4	-85.4		m	
16-QAM 1/2	-83.1		m	
16-QAM 3/4	-79.0		m	
64-QAM 1/2	-77.9		m	
64-QAM 2/3	-74.8		m	
64-QAM 3/4	-73.7		m	
64-QAM 5/6	-71.8		m	
Comments: Equation (149b) of Section 8.4.13.1.1 in [1] and Table 84 in [4] are used for calculation of the numbers. Sensitivity numbers are calculated based on assumption of repetition factor R = 1.				

Table 67 - Max MS Sensitivity Level for Convolutional Turbo Code 10 MHz Bandwidth, DL PUSC

BW (MHz)	Sensitivity (dBm)	Reference	Status	Support
QPSK 1/2	-88.5		m	
QPSK 3/4	-85.1		m	
16-QAM 1/2	-82.8		m	
16-QAM 3/4	-78.7		m	
64-QAM 1/2	-77.6		m	
64-QAM 2/3	-74.5		m	
64-QAM 3/4	-73.4		m	
64-QAM 5/6	-71.5		m	
Comments: Equation (149b) of Section 8.4.13.1.1 in [1] and Table 84 in [4] are used for calculation of the numbers. Sensitivity numbers are calculated based on assumption of repetition factor R = 1.				

Table 68 - Not used

Table 69 - Max MS Sensitivity Level for Convolutional Turbo Code 10 MHz Bandwidth, DL AMC

BW (MHz)	Sensitivity (dBm)	Reference	Status	Support
QPSK 1/2	-88.3		m	
QPSK 3/4	-84.9		m	
16-QAM 1/2	-82.6		m	
16-QAM 3/4	-78.5		m	
64-QAM 1/2	-77.4		m	
64-QAM 2/3	-74.3		m	
64-QAM 3/4	-73.2		m	
64-QAM 5/6	-71.3		m	
Comments: Equation (149b) of Section 8.4.13.1.1 in [1] and Table 84 in [4] are used for calculation of the numbers. Sensitivity numbers are calculated based on assumption of repetition factor R = 1.				

2.5.1.1.1.18 Minimum Transmit Requirements

Table 70 - Transmit requirements for MS

Mobile Station (MS)				
Item	**Capability**	**Reference**	**Status**	**Support**
1	Tx dynamic Range = 45 dB	8.4.12.1	m	
2	Tx power level min adjustment step = 1 dB	8.4.12.1	m	
3	Tx power level min relative step accuracy according to the following: Single step size m | Required relative accuracy ceil(|m|) = 1dB | +/- 0.5 dB ceil(|m|) = 2dB | +/- 1 dB ceil(|m|) = 3dB | +/- 1.5 dB 4dB < ceil(|m|) < = 10dB | +/- 2 dB Two exception points of at least 10 dB apart are allowed over the 45 dB range, where in these two points an accuracy of up to +/- 2 dB is allowed for any size step.	8.4.12.1	m	
4	Spectral flatness according to the following: ≤ ±2 dB for spectral lines from $-N_{used}/4$ to –1 and +1 to $N_{used}/4$ Within +2/-4 dB for spectral lines from $-N_{used}/2$ to $-N_{used}/4$ and $+N_{used}/4$ to $N_{used}/2$	8.4.12.2	m	
5	The power difference between adjacent subcarriers shall be ≤ 0.4 dB.	8.4.12.2	m	
6	Tx relative constellation error according to the following: QPSK 1/2 ≤ -15.0 dB QPSK 3/4 ≤ -18.0 dB 16-QAM 1/2 ≤ -20.5 dB 16-QAM 3/4 ≤ -24.0 dB	8.4.12.3	m	
Comments:				

Table 71 - MS Transmitter Spectral Mask Requirements

Mobile Station (MS)				
Item	**Capability**	**Reference**	**Status**	**Support**
1	Prof 3.A 2.496 – 10 MHz channel PHY (2.496-2.69GHz)	[5], Section 2.1.5.1.1	m	
2	Prof 3.A 2.496 – 5 MHz channel PHY (2.496-2.69GHz)	[5], Section 2.1.5.1.1	m	
Comments:				

2.5.1.1.1.19 Receive Requirements

Table 72 - MS Receiver Requirements

Mobile Station (MS)				
Item	**Capability**	**Reference**	**Status**	**Support**
1	MS Rx max input level on-channel reception tolerance = -30 dBm	8.4.13.3.1	m	
2	MS Rx max input level on-channel damage tolerance = 0 dBm	8.4.13.4.1	m	
3	Min adjacent channel rejection at BER=10^{-6} for 3 dB degradation C/I according to the following: 16-QAM 3/4: 10 dB 64-QAM 3/4 (if 64-QAM supported): 4 dB	8.4.13.2	m	
4	Min alternate channel rejection at BER=10^{-6} for 3 dB degradation C/I according to the following: 16-QAM 3/4: 29 dB 64-QAM 3/4 (if 64-QAM supported): 23 dB	8.4.13.2	m	
Comments:				

2.5.1.1.2 MS MAC functions

Table 73 - Convergence Sub layer protocol support

Mobile Station (MS)				
Item	**Capability**	**Reference**	**Status**	**Support**
1	Packet convergence sub layer	[1] 5.2	m	
Comments:				

2.5.1.1.2.1 Packet Convergence Sublayer

Table 74 - Packet Convergence Sub layer support

Mobile Station (MS)				
Item	**Capability**	**Reference**	**Status**	**Support**
1	Internet Protocol (IPv4)	[1] 5.2.6	m	
2	Internet Protocol (IPv6)	[1] 5.2.6	m	
3	IEEE 802.3 (Ethernet)	[1] 5.2.4	o	
4	Packet, IPv4 over 802.3/Ethernet		o	
5	Packet, IPv6 over 802.3/Ethernet		o	
6	IPv4 with Header Compression (ROHC)	[1] 5.2.7	o	
7	IPv6 with Header compression (ROHC)	[1] 5.2.7	o	
Comments: Items 3, 4 and 5 are not required for WiMAX certified label, only optionally certified.				

Table 75 - Major packet classification

Mobile Station (MS)				
Item	**Capability**	**Reference**	**Status**	**Support**
1	IP Classification	[1] 11.13.19.3.4	m	
2	Ethernet classification	[1] 11.13.19.3.4	o	
Comments: Item 2 is not required for WiMAX certified label, only optionally certified. It's conditioned by Eth-CS.				

Table 76 - IP packet classification in the UL

Mobile Station (MS)				
Item	**Capability**	**Reference**	**Status**	**Support**
1	Classification based on DSCP /IP TOS field	[1] 5.2.2, 11.13.19.3.4.2	m	
2	Classification based on IP Protocol/Next Header field	[1] 5.2.2, 11.13.19.3.4.3	m	
3	Classification based on IP masked Source Address	[1] 5.2.2, 11.13.19.3.4.4	m	
4	Classification based on IP Destination Address	[1] 5.2.2, 11.13.19.3.4.5	m	
5	Classification based on protocol source port range	[1] 5.2.2, 11.13.19.3.4.6	m	
6	Classification based on protocol destination port range	[1] 5.2.2, 11.13.19.3.4.7	m	
7	Classification based on IPv6 Flow Label field, applicable to IPv6 classification only	[1] 5.2.2, 11.13.19.3.8	m	
Comments:				

Table 77 - PHS

Mobile Station (MS)				
Item	**Capability**	**Reference**	**Status**	**Support**
1	PHS	5.2.3 5.2.3.1 5.2.3.2	m	
Comments:				

2.5.1.1.2.2 MAC common part sub layer

Table 78 - MAC Common part sublayer functionalities

Mobile Station (MS)				
Item	**Capability**	**Reference**	**Status**	**Support**
1	Addressing and connections	[1] 6.3.1	m	
2	Construction of PDUs	[1] 6.3.3	m	
3	ARQ	[1] 6.3.4	m	
4	Uplink scheduling service	[1] 6.3.5	m	
5	Bandwidth allocation and request	[1] 6.3.6	m	
6	Contention resolution	[1] 6.3.8	m	
7	Network entry and initialization	[1] 6.3.9	m	
8	Ranging	[1] 6.3.10	m	
9	Update of UL and DL channel descriptors	[1] 6.3.11	m	
10	Quality of service	[1] 6.3.14	m	
Comments:				

Table 79 - Miscellaneous management functions

Mobile Station (MS)				
Item	**Capability**	**Reference**	**Status**	**Support**
1.	MS reset initiated by BS (RES-CMD)	[1] 6.3.2.3.22	m	
2.	MS network clock comparison initiated by BS (CLK-CMP)	[1] 6.3.2.3.25	o	
3.	MS notifies BS of de-registration (DREG-REQ)	[1] 6.3.2.3.43	m	
4.	Deregistration (DREG-CMD)	[1] 6.3.2.3.26	m	
5.	MS receives quick answer from BS to its DSx-REQ (DSX-RVD)	[1] 6.3.2.3.27	m	
6.	MS answers to BS channel measurement report request (REP-REQ and REP-RSP)	[1] 6.3.2.3.33	m	
7.	MS applies the power change requested by the BS (FPC)	[1] 6.3.2.3.34	m	
Comments:				

2.5.1.1.2.2.1 Addressing and Connections

Table 80 - Addressing and Connections

Mobile Station (MS)				
Item	**Capability**	**Reference**	**Status**	**Support**
1	Globally Unique MS MAC Address.	[1] 6.3.1	m	
2	MAC Management messages only applicable on connection types as specified in [1] Table 14.	[1] 6.3.2.3	m	
3	User data only on transport connections.	[1] 6.3.1	m	
Comments:				

2.5.1.1.2.2.2 Construction and Transmission of MAC PDUs

Table 81 - Transmission conventions

Mobile Station (MS)				
Item	**Capability**	**Reference**	**Status**	**Support**
1.	Fields of MAC messages are transmitted in the same order as they appear in the corresponding tables in the standard.	[1] 6.3.3.1	m	
2.	Fields of MAC messages and fields of TLVs, which are specified in the standard as binary numbers (including CRC and HCS) are transmitted as a sequence of their binary digits, starting from MSB. Bit masks (for example, in ARQ) are considered numerical fields. For signed numbers MSB is allocated for the sign. Length field in the “definite form” of ITU-T X.690 is also considered a numerical field.	[1] 6.3.3.1	m	
3.	Fields specified as SDUs or SDU fragments (for example, MAC PDU payloads) are transmitted in the same order of bytes as received from upper layers.	[1] 6.3.3.1	m	
4.	Fields specified as strings are transmitted in the order of symbols in the string. In cases c and d, bits within a byte are transmitted in the order MSB first.	[1] 6.3.3.1	m	
5.	TLV value that is defined (in the standard) as a list of numerical values (e.g., section 11.13.19.3.4.2) will be transmitted in the same order as the numerical values appear in the table.	[1] 6.3.3.1	m	
Comments:				

Table 82 - Subheader and Extended Subheader support

Mobile Station (MS)				
Item	**Capability**	**Reference**	**Status**	**Support**
1	Extended subheader support	6.3.2.2.7, 11.7.25	m	
2	Capability of sending Grant management subheader	6.3.2.2.2	m	
Comments:				

Table 83 - PDU concatenation

Mobile Station (MS)				
Item	**Capability**	**Reference**	**Status**	**Support**
1	Concatenate Multiple MAC PDUs into a single burst of the allocated length.	[1] 6.3.3.2	m	
2	Receive concatenated MAC PDUs and determine disposition via CID.	[1] 6.3.3.2	m	
3	Padding of any unused space with stuff byte value in the UL Burst.	[1] 6.3.3.7	m	
Comments:				

Table 84 - SDU Fragmentation

Mobile Station (MS)				
Item	**Capability**	**Reference**	**Status**	**Support**
1	Fragment a MAC SDU into multiple MAC PDUs applicable to traffic connections and Management messages on Primary management connection	[1] 6.3.3.3	m	
2	Add Fragmentation Sub header to the SDU fragment including setting FC according to the Fragmentation rules table	[1] 6.3.3.3	m	
3	Do not perform fragmentation of PDUs on “Broadcast management” connections	[1] 6.3.2.3	m	
4	Increment the FSN modulo 2048 for non-ARQ connections	[1] 6.3.3.3	m	
5	Increment the BSN modulo 2048 for ARQ connection	[1] 6.3.3.4.2	m	
6	Do not perform fragmentation of PDUs on Basic and Initial Ranging connections	[1] 6.3.2.3	m	
Comments:				

Table 85 - SDU reassembly

Mobile Station (MS)				
Item	**Capability**	**Reference**	**Status**	**Support**
1	Receive and reassemble fragmented SDUs.	[1] 6.3.3.3	m	
2	Discard SDUs corrupted due to loss of fragment	[1] 6.3.3.3	m	
Comments:				

Table 86 - Packing

Mobile Station (MS)				
Item	**Capability**	**Reference**	**Status**	**Support**
1	Pack variable length SDUs in a single MAC PDU on non-ARQ connections	[1] 6.3.3.4.1.2	m	
2	Unpack variable length SDUs on non-ARQ connections	[1] 6.3.3.4.1.2	m	
3	Pack variable length SDUs or SDUs fragments in a single MAC PDU on ARQ-enabled connections	[1] 6.3.3.4.2 5.1.2	m	
4	Unpack variable length SDUs or SDUs fragments on ARQ-enabled connections	[1] 6.3.3.4.2 5.1.2	m	
5	Do not perform packing of SDUs on Basic, Broadcast and Initial Ranging connections	[1] 6.3.2.3	m	
6	Perform packing of ARQ Feedback Payload	[1] 6.3.3.4.3	m	
7	Extracting ARQ Feedback IEs from received ARQ Feedback Payload.	[1] 6.3.3.4.3	m	
Comments:				

Table 87 - MAC CRC

Mobile Station (MS)				
Item	**Capability**	**Reference**	**Status**	**Support**
1	Compute and add CRC, and set CI bit based on connection properties	[1] 6.3.3.5	m	
2	Check CRC based on CI bit	[1] 6.3.3.5	m	
Comments: For Basic, Primary, Broadcast, Fragmentable Broadcast connections CRC should be used always. For ARQ connections CRC should be used always. CRC can be enabled/disabled on SFID basis.				

Table 88 - MAC PDU Formats

Mobile Station (MS)				
Item	**Capability**	**Reference**	**Status**	**Support**
Comments:				

2.5.1.1.2.2.3 ARQ

Table 89 - ARQ

Mobile Station (MS)				
Item	**Capability**	**Reference**	**Status**	**Support**
1.	Pack several ARQ feedback information elements in a single ARQ feedback payload	[1] 6.3.4 5.1.3	m	
2.	Insert a single ARQ feedback payload as first payload in a MAC PDU	[1] 6.3.4 5.1.3	m	
3.	ARQ ACK type 1 - Cumulative ACK entry	11.7.24, 6.3.4.2	m	
4.	ARQ ACK type 2 - Cumulative with Selective ACK entry	11.7.24, 6.3.4.2	m	
5.	ARQ ACK type 3 - Cumulative ACK with Block Sequence ACK	11.7.24, 6.3.4.2	m	
Comments:				

2.5.1.1.2.2.4 Data Delivery Services for Mobile Network

Table 90 - Data Delivery Services for Mobile Network

Prerequisite: Mobile Station (MS)				
Item	**Capability**	**Reference**	**Status**	**Support**
1	Unsolicited Grant service (UGS)	[1]6.3.20.1.1	m	
2	Real-Time Variable Rate (RT-VR) Service	[1]6.3.20.1.2	m	
3	Non-Real-Time Variable Rate (NRT-VR) Service	[1]6.3.20.1.3	m	
4	Best Effort (BE) Service	[1]6.3.20.1.4	m	
5	Extended Real-Time Variable Rate (ERT-VR) service	[1]6.3.20.1.5	m	
Comments				

2.5.1.1.2.2.5 Request-Grant Mechanism

Table 91 - Request-Grant Mechanism

Prerequisite: Mobile Station (MS)				
Item	**Capability**	**Reference**	**Status**	**Support**
1	Incremental bandwidth request using BW request header	[1] 6.3.6.1	m	
2	Aggregate bandwidth request using BW request header	[1] 6.3.6.1	m	
3	Bandwidth request using Grant Management Subheader	[1] 6.3.2.2.2	m	
4	Request-Grant mechanism combined with UL Tx power report	[1] 6.3.2.1.2.1.2	m	
5	CQICH allocation request using CQICH allocation request header	[1] 6.3.2.1.2.1.4	m	
6	Contention-based CDMA bandwidth requests	[1] 6.3.6.5	m	
Comments				

2.5.1.1.2.2.6 Network entry and initialization

Table 92 - Network entry and initialization

Mobile Station (MS)				
1	MS performs scanning and synchronization to the downlink.	[1] 6.3.9.1	m	
2	MS obtains downlink parameters	[1] 6.3.9.2	m	
3	MS obtains uplink parameters	[1] 6.3.9.3, 6.3.9.4	m	
4	MS performs Initial Ranging	[1] 6.3.9.5, 6.3.9.6	m	
5	MS negotiates basic capabilities	[1] 6.3.9.7	m	
6	MS performs authorization	[1] 6.3.9.8, 7.2	m	
7	MS performs registration	[1] 6.3.9.9	m	
Comments:				

Table 93 - Obtain DL parameters

Mobile Station (MS)				
Item	**Capability**	**Reference**	**Status**	**Support**
1	MS receives DLFP correctly	[1] 8.4.4.3	m	
2	MS receives DL-MAP correctly	[1] 6.3.9.2	m	
3	MS receives DCD correctly	[1] 6.3.9.2	m	
Comments:				

Table 94 - Obtain UL parameters

Mobile Station (MS)				
Item	**Capability**	**Reference**	**Status**	**Support**
1	MS receives UCD correctly	[1] 6.3.9.3, 6.3.9.4	m	
2	MS receives UL-MAP correctly		m	
Comments:				

Table 95 - Initial ranging

Mobile Station (MS)				
Item	**Capability**	**Reference**	**Status**	**Support**
1	MS receives UL-MAP containing initial ranging opportunity	6.3.10.3.1	m	
2	MS sends initial ranging code after either random selection or random backoff	6.3.10.3.1, 8.4.7.1	m	
3	MS sends an initial ranging code again after random backoff, if the BS does not respond	6.3.10.3.1, 8.4.7.1	m	
4	MS receives RNG-RSP	6.3.10.3.1	m	
5	MS performs network entry and initialization on DL Frequency Override channel, if instructed in RNG-RSP	6.3.10.3.1	m	
6	MS continues the ranging process using initial ranging codes in the periodic ranging region, if receiving RNG-RSP with continue status	6.3.10.3.1	m	
7	MS receives CDMA allocation IE after receiving RNG-RSP with success status	6.3.10.3.1	m	
8	SS receives CDMA allocation IE without receiving RNG-RSP with success status	6.3.9.5.1, 6.3.10.3.1	m	
9	MS sends RNG-REQ in UL slots allocated by CDMA allocation IE	6.3.10.3.1, 8.4.5.4.3	m	
10	MS establishes Basic and Primary Management connections	6.3.10.3.1	m	
11	MS performs timing, power , and frequency adjustment	6.3.10.3.1	m	
Comments: IEEE 802.16e-2005 needs correction in Figures 85-87 to allow for the case MS receives CDMA Allocation_IE without having received RNG-RSP with success status which case is allowed by the text of Section 6.3.9.5.1.				

Table 96 - Initial ranging using Initial Ranging Code set 1

Mobile Station (MS)				
Item	**Capability**	**Reference**	**Status**	**Support**
1	MS receives UL-MAP containing initial ranging opportunity	6.3.10.3.1	m	
2	MS sends initial ranging code from Initial Ranging Code set 1 after either random selection or random backoff	6.3.10.3.1, 8.4.7.1	m	
3	MS sends an initial ranging code from Initial Ranging Code set 1 again after random backoff, if the BS does not respond	6.3.10.3.1, 8.4.7.1	m	
4	MS receives RNG-RSP	6.3.10.3.1	m	
5	MS performs network entry and initialization on DL Frequency Override channel, if instructed in RNG-RSP	6.3.10.3.1	m	
6	MS continues the ranging process using initial ranging codes in the periodic ranging region, if receiving RNG-RSP with continue status	6.3.10.3.1	m	
7	MS receives CDMA allocation IE after receiving RNG-RSP with success status	6.3.10.3.1	m	
8	SS receives CDMA allocation IE without receiving RNG-RSP with success status	6.3.9.5.1, 6.3.10.3.1	m	
9	MS sends RNG-REQ in UL slots allocated by CDMA allocation IE	6.3.10.3.1, 8.4.5.4.3	m	
10	MS retransmits the corresponding RNG-REQ message in UL slot allocated by CDMA allocation IE with the same ranging attribute (i.e. frame number index, ranging code, ranging symbol, and ranging subchannel), unless T3 expires.		m	
11	MS establishes Basic and Primary Management connections	6.3.10.3.1	m	
12	MS performs timing, power, and frequency adjustment	6.3.10.3.1	m	
Comments: IEEE 802.16e-2005 needs correction in Figures 85-87 to allow for the case MS receives CDMA Allocation_IE without having received RNG-RSP with success status which case is allowed by the text of Section 6.3.9.5.1.				

Table 97 - MS basic capability negotiation

Mobile Station (MS)				
Item	**Capability**	**Reference**	**Status**	**Support**
1	MS sends SBC-REQ	[1] 6.3.9.7	m	
2	MS receives SBC-RSP	[1] 6.3.9.7	m	
3	MS resends SBC-REQ on timeout	[1] 6.3.9.7	m	
Comments:				

Table 98 - MS basic capability negotiation in case of Initial Ranging using Initial Ranging Code set 1 or MAC Layer HO Procedures using HO Ranging Code set 1

Mobile Station (MS)				
Item	**Capability**	**Reference**	**Status**	**Support**
1	MS sends HARQ packet carrying SBC-REQ with Primary Management CID in UL burst allocated by HARQ UL-MAP IE, based on the HARQ capability of HARQ set 1 defined in the OFDMA parameter set TLV	[1] 6.3.9.7	m	
2	MS sends MAC PDU carrying SBC-REQ in UL burst allocated by UL-MAP IE		m	
3	MS fragments a SBC-REQ message with Primary Management CID in case of UL slots which are not enough to transmit the SBC-REQ message at once,		m	
4	MS receives SBC-RSP	[1] 6.3.9.7	m	
5	MS resends SBC-REQ on timeout	[1] 6.3.9.7	m	
Comments: see Table 96 and Table 109.				

Table 99 - MS registration

Mobile Station (MS)				
Item	**Capability**	**Reference**	**Status**	**Support**
1	MS sends REG-REQ to register with a BS.	[1] 6.3.9.9	m	
2	MS receives REG-RSP.	[1] 6.3.9.9	m	
3	MS re-sends REG-REQ upon time out	[1] 6.3.9.9	m	
Comments:				

Table 100 - Periodic ranging

Mobile Station (MS)				
Item	**Capability**	**Reference**	**Status**	**Support**
1	MS sends periodic ranging codes after T4 expires.	6.3.10.3.2, 8.4.7.2	m	
2	MS sends a periodic ranging code again after random backoff, if the BS does not respond	6.3.10.3.2, 8.4.7.2	m	
3	MS adjusts PHY parameters in response to RNG-RSP including the case of unsolicited RNG-RSP	6.3.10. 3.2, 8.4.7.2	m	
Comments:				

2.5.1.1.2.2.7 Update of channel descriptors

Table 101 - Update of channel descriptors

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

2.5.1.1.2.2.8 QoS

Table 102 - Service flow operations

Mobile Station (MS)				
Item	**Capability**	**Reference**	**Status**	**Support**
1.	Dynamic service flow creation - BS-initiated	6.3.14.7.1.2	m	
2.	Dynamic service flow creation -MS-initiated	6.3.14.7.1.1	N*	
3.	Dynamic service flow change - BS-initiated	6.3.14.9.4.2	m	
4.	Dynamic service flow change -MS-initiated	6.3.14.9.4.1	N*	
5.	Dynamic service flow deletion -BS-initiated	6.3.14.9.5.2	m	
6.	Dynamic service flow deletion – MS-initiated	6.3.14.9.5.1	m	

Comments: * For MS, not required for WiMAX certified label, only optionally certified.

Item 6 Dynamic service flow deletion – MS-initiated DSD is limited to error handling purposes during BS initiated DSA and DSC with these exceptions: if items 2 and 4 are supported then item 6 shall be fully supported.

DSC capabilities per items 3 and 4 do not mandate two-step activation of service flows with interim Provisioned state.

2.5.1.1.2.2.9 Sleep Mode

Table 103 - Sleep Mode

Mobile Station (MS)				
Item	**Capability**	**Reference**	**Status**	**Support**
1	Sleep Mode Implementation in MS	6.3.21	m	
2	Power Saving Class type 1 support	6.3.21.2	m	
3	Support of Traffic Indication Message for Power Saving Class type 1	6.3.21.2	m	
4	Indicating DL traffic by SLPID bit map in TRF-IND	6.3.21.1 6.3.2.3.46	m	
5	Indicating DL traffic by SLPID in TRF-IND	6.3.21.1 6.3.2.3.46	m	
6	Support of SLPID_Update TLV in TRF-IND	6.3.2.3.46 11.1.8.2	m	
7	Traffic triggered wakening flag	6.3.2.3.44-45, 6.3.21.2	m	
8	Activation of Power Saving Class by unsolicited SLP-RSP message from BS	6.3.2.3.45 6.3.21.1	m	
9	DL sleep control extended subheader	6.3.2.2.7.2 11.7.25	m	
10	Bandwidth request and uplink sleep control header	6.3.2.1.2.1.6 11.7.25	m	
11	Support of periodic ranging in sleep mode	6.3.21.5 11.16.2	m	
12	Sleep mode multicast CID support at MS	6.3.2.3.46 10.4	m	
13	MS Support of triggered action indicated by Enabled-Action-Triggered TLV	6.3.2.3.6, 6.3.2.3.44-45, 6.3.21.1 , 11.5, 11.6, 11.7.3	m	
Comments:				

2.5.1.1.2.2.10 Handover

Table 104 - Neighbor Advertisement

Mobile Station (MS)				
Item	**Capability**	**Reference**	**Status**	**Support**
1	Neighbor Advertisement	6.3.2.3.47	m	
2	Support BS index at the MS (Use BS index instead of BSID) in Scan/HO related messages, as numbered in MOB_NBR-ADV	6.3.2.3.48-51, 6.3.2.3.53	m	
Comments:				

Table 105 - Scanning

Mobile Station (MS)				
Item	**Capability**	**Reference**	**Status**	**Support**
1.	Scanning for cell selection (HO)	6.3.2.3.48-49	m	
2.	MS Requests Scanning Interval Allocations from BS	6.3.2.3.48-49 6.3.21.1.2	m	
3.	Unsolicited Scanning Interval Allocation by BS	6.3.2.3.48-49, 6.3.21.1.2	m	
4.	Event Triggered Scanning based on serving BS metrics	6.3.21.1.2	m	
5.	MS autonomous neighbor cell scanning	8.4.13.1.3	m	
Comments:				

Table 106 - Scan Reporting Type Support

Mobile Station (MS)				
Item	**Capability**	**Reference**	**Status**	**Support**
1.	Periodic reporting based on Report Period as indicated in MOB_SCN-RSP message	6.3.2.3.49, 11.4.1	m	
2.	Event triggered reporting based on metric conditions (The action includes support for MOB_SCN-REP)	6.3.2.3.49, 11.4.1	m	
Comments:				

Table 107 - HO/Scan/Report Trigger Metrics

Mobile Station (MS)				
Item	**Capability**	**Reference**	**Status**	**Support**
1.	Mean BS CINR	6.3.2.3.53, 11.8.7	m	
2.	Mean BS RSSI	6.3.2.3.53, 11.8.7	m	
3.	BS Round Trip Delay	6.3.2.3.53, 11.8.7	m	
Comments:				

Table 108 - MAC Layer HO Procedures

Mobile Station (MS)				
Item	**Capability**	**Reference**	**Status**	**Support**
1.	General HO Support	6.3.21.2, 6.3.2.3.55	m	
2.	HO initiated by MS support at MS side	6.3.22.2, 6.3.22.2.2	m	
3.	HO initiated by BS support at MS side	6.3.22.2, 6.3.22.2.2	m	
4.	HO Indication	6.3.21.2.5	m	
5.	Cancellation of HO	6.3.21.2.3	m	
6.	Metric Triggered HO Requests	11.1.7 (table 348g)	m	
7.	Resource Retention Support	6.3.2.3.52, 6.3.2.3.54	m	
8.	CDMA HO Ranging	6.3.10.3.3	m	
9.	HO_ID support	6.3.2.3.52, 6.3.2.3.54	m	
10.	Support negotiating of "HO authorization policy" during HO (i.e. between BSs)	6.3.2.3.52, 6.3.2.3.54	m	
Comments:				

Table 109 - MAC Layer HO Procedures using HO Ranging Code set 1

Mobile Station (MS)				
Item	**Capability**	**Reference**	**Status**	**Support**
1.	General HO Support	6.3.21.2, 6.3.2.3.55	m	
2.	HO initiated by MS support at MS side	6.3.22.2, 6.3.22.2.2	m	
3.	HO initiated by BS support at MS side	6.3.22.2, 6.3.22.2.2	m	
4.	HO Indication	6.3.21.2.5	m	
5.	Cancellation of HO	6.3.21.2.3	m	
6.	Metric Triggered HO Requests	11.1.7 (table 348g)	m	
7.	Resource Retention Support	6.3.2.3.52, 6.3.2.3.54	m	
8.	CDMA HO Ranging using HO Ranging Code set 1	8.4.7.3, 6.3.10.4.2	IOMS-RNG_SPLIT	
9.	HO_ID support	6.3.2.3.52, 6.3.2.3.54	m	
10.	Support negotiating of "HO authorization policy" during HO (i.e. between BSs)	6.3.2.3.52, 6.3.2.3.54	m	
11.	Transmission of a RNG-REQ (i.e. 1st RNG-REQ) message with Ranging CID including MAC Address TLV and GMSH in UL slot allocated by CDMA_Allocation_IE	6.3.10.4.2	IOMS-RNG_SPLIT	
12.	Retransmission of the corresponding RNG-REQ in UL burst allocated by CDMA_Allocation_IE with the same ranging attribute (i.e. frame number index, ranging code, ranging symbol, and ranging subchannel), unless T3 expires.	6.3.10.4.2	IOMS-RNG_SPLIT	
13.	HARQ transmission/retransmission of a RNG-REQ (i.e. 2nd RNG-REQ) message with Primary Management CID in UL burst allocated by HARQ UL-MAP IE, based on the HARQ capability of HARQ set 1 defined in the OFDMA parameter set TLV	6.3.10.4.2	IOMS-RNG_SPLIT	
14.	Fragmentation of the RNG-REQ (i.e. 2nd RNG-REQ) message using FSH in case of UL slot which is not enough to transmit the 2nd RNG-REQ message at once,	6.3.10.4.2	IOMS-RNG_SPLIT	
Comments:				

Table 110 - MAC Layer HO Procedures using HO Ranging Code set 2

Mobile Station (MS)				
Item	**Capability**	**Reference**	**Status**	**Support**
1.	General HO Support	6.3.21.2, 6.3.2.3.55	m	
2.	HO initiated by MS support at MS side	6.3.22.2, 6.3.22.2.2	m	
3.	HO initiated by BS support at MS side	6.3.22.2, 6.3.22.2.2	m	
4.	HO Indication	6.3.21.2.5	m	
5.	Cancellation of HO	6.3.21.2.3	m	
6.	Metric Triggered HO Requests	11.1.7 (table 348g)	m	
7.	Resource Retention Support	6.3.2.3.52, 6.3.2.3.54	m	
8.	CDMA HO Ranging using HO Ranging Code set 2	8.4.7.3, 6.3.10.4.3	m	
9.	HO_ID support	6.3.2.3.52, 6.3.2.3.54	m	
10.	Support negotiating of "HO authorization policy" during HO (i.e. between BSs)	6.3.2.3.52, 6.3.2.3.54	m	
11.	Transmission of a RNG-REQ message with Ranging CID in UL slot allocated by CDMA_Allocation_IE	6.3.10.4.3	m	
12.	Retransmission of the corresponding RNG-REQ in UL burst allocated by CDMA_Allocation_IE with the same ranging attribute (i.e. frame number index, ranging code, ranging symbol, and ranging subchannel), unless T3 expires.	6.3.10.4.3	m	
Comments:				

Table 111 - HO Optimization

Mobile Station (MS)				
Item	**Capability**	**Reference**	**Status**	**Support**
1.	HO Optimization Support	6.3.2.3.6, 6.3.22.2.7, 11.6	m	
2.	Support Omission of SBC-REQ management messages	6.3.2.3.6, 6.3.22.2.7, 11.6	m	
3.	Support Omission of PKM Authentication phase except TEK Phase	6.3.2.3.6, 6.3.22.2.7, 11.6	m	
4.	Support Omission of PKM TEK creation phase during re-entry processing	6.3.2.3.6, 6.3.22.2.7, 11.6	m	
5.	Support "Full State Sharing" – No exchange of network re-entry messages after ranging before resuming normal operations	6.3.2.3.6, 6.3.22.2.7, 11.6	m	
6.	Unsolicited SBC-RSP management message with updated capabilities information	6.3.2.3.6, 6.3.22.2.7, 11.6	o	
7.	Support SBC- RSP TLVs as part of RNG-RSP message	11.6	m	
8.	Support Omission of REG-REQ during NW reentry	6.3.2.3.6, 6.3.22.2.7, 11.6	m	
9.	Unsolicited REG-RSP with updated capabilities information	6.3.2.3.6, 6.3.22.2.7, 11.6	o	
10.	Support REG-RSP TLV as part of RNG-RSP message	11.6	m	
11.	Support of ARQ continuation using SN report header after NW re-entry	6.3.2.3.6, 6.3.22.2.7, 11.6	o	
12.	Support continuation of non-ARQ connection using SDU SN extended sub-header before handover and using SN report header after NW re-entry	6.3.22.2.8	o	
13.	Support sending Bandwidth Request header with zero BR as a notification of MS's successful re-entry registration	6.3.22.2.7, 11.6	m	
14.	Support receiving IP address refresh bit	11.6	m	
15.	Capability of sending SN Report header after requested by SN request extended subheader	6.3.2.2.7.7	o	
Comments:				

Table 112 - CID and SAID Update

Mobile Station (MS)				
Item	**Capability**	**Reference**	**Status**	**Support**
1.	CID update in MS by RNG-RSP	11.7.9	m	
2.	CID update in MS by REG-RSP	11.7.9	o	
3.	Compressed CID update in MS by RNG-RSP	11.7.9.1	m	
4.	Compressed CID update in MS by REG-RSP	11.7.9.1	o	
5.	SAID update in MS by RNG-RSP	11.7.17, 11.6	m	
6.	SAID update in MS by SA-TEK_RSP	11.7.20	m	
Comments:				

2.5.1.1.2.2.11 Idle Mode

Table 113 - Idle Mode

Mobile Station (MS)				
Item	**Capability**	**Reference**	**Status**	**Support**
1	General Idle Mode functionality	6.3.24	m	
2	Idle mode initiation by DREG-REQ message from MS	6.3.24.1	m	
3	Support for Idle Mode initiation by unsolicited DREG-CMD from BS	6.3.24.1	m	
4	MS retention of service and operational information during Idle Mode initiated by DREG-CMD	6.3. 24.1	m	
5	Request from MS to BS to retain service and operational information by DREG-REQ message	6.3. 24.1	m	
6	MS capability of receiving Broadcast Control Pointer IE	6.3. 24.5	m	
7	MS Capability of using dedicated ranging region and ranging code allocation for location update or network entry of MS in Idle Mode	6.3. 24.7.1	o	
8	Paging Group Update at MS	6.3. 24.8.1.1	m	
9	Timer Location Update at MS	6.3. 24.8.1.2	m	
10	Power Down Location Update at MS	6.3. 24.8.1.3	m	
11	Secure Location Update	6.3. 24.8.2.1	m	
12	Un-secure Location Update	6.3. 24.8.2.2	m	
13	Paging Preference	11.13.30	m	
14	Idle mode multicast CID support at MS	10.4	m	
Comments:				

2.5.1.1.2.2.12 Expedited Re-entry from Idle Mode

Table 114 - Expedited Re-entry from Idle Mode

Mobile Station (MS)				
Item	**Capability**	**Reference**	**Status**	**Support**
1.	Expedited network re-entry from Idle Mode support	6.3.23.9	m	
2.	Support Omission of SBC-REQ management messages	11.6	m	
3.	Support Omission of PKM Authentication phase except TEK phase	11.6	m	
4.	Support Omission of PKM TEK creation phase during re-entry processing	11.6	m	
5.	Support "Full State Sharing except ARQ state (blocks in ARQ window and associated timers)" - No exchange of network re-entry messages after ranging before resuming normal operations	11.6	m	
6.	Unsolicited SBC-RSP management message with updated capabilities information	11.6	o	
7.	Support SBC-RSP TLVs as part of RNG-RSP message	11.6	m	
8.	Support Omission of REG-REQ during NW re-entry	11.6	m	
9.	Unsolilcited REG-RSP with updated capabilities information	11.6	o	
10.	Support REG-RSP TLV as part of RNG-RSP message	11.6	m	
11.	MS send Bandwidth Request header with zero BR as a notification of MS's successful re-entry registration.	11.6	m	
12.	MS trigger a higher layer protocol required to refresh its traffic IP address (e.g. DHCP Discover [IETF RFC 2131] or Mobile IPv4 re-registration [IETF RFC 3344]).	11.6	m	
Comments:				

2.5.1.1.2.2.13 Feedback Mechanism

Table 115 - Feedback Mechanism

Mobile Station (MS)				
Item	**Capability**	**Reference**	**Status**	**Support**
1	Bandwidth request and UL Tx Power Report	6.3.2.1.2.1.2	m	
2	SN report header	6.3.2.1.2.1.7	o	
Comments:				

2.5.1.1.2.2.14 Multicast Traffic Connection

Table 116 - Multicast Traffic Connection

Mobile Station (MS)				
Item	**Capability**	**Reference**	**Status**	**Support**
1	Multicast traffic connection	6.3.13	m	
Comments:				

2.5.1.1.2.2.15 Security Sublayer

Table 117 - Security functions

Mobile Station (MS)				
Item	**Capability**	**Reference**	**Status**	**Support**
1.	MS supports two simultaneous active TEKs	6.3.9.8, 7.2.1	m	
2.	MS supports SAID update using RNG-REQ/RNG-RSP	11.6	m	
3.	MS supports SAID update using SA-TEK-REQ/SA-TEK-RSP	11.7.20	m	
4.	MS sends PKMv2 EAP-Start	7.2.2.2	m	
5.	MS exchanges PKMv2 EAP-Transfer	7.2.2.2	m	
6.	MS derives AK	7.2.2.2	m	
7.	MS derives KEK	7.2.2.2	m	
8.	MS derives message authentication keys	7.2.2.2	m	
9.	MS receives PKMv2 SA-TEK-Challenge	7.8.1	m	
10.	MS checks whether AKID is valid or not	7.8.1	m	
11.	MS sends PKMv2 SA-TEK-Request	7.8.1	m	
12.	MS receives PKMv2 SA-TEK-Response	7.8.1	m	
13.	MS establishes SAs included in PKMv2 SA-TEK-Response	7.8.1	m	
14.	MS re-sends PKMv2 SA-TEK-Request when SATEKTimer timeout	7.8.1	m	
15.	MS sends PKMv2 Key-Request	7.2.2.5	m	
16.	MS receives PKMv2 Key-Reply	7.2.2.5	m	
17.	MS re-sends PKMv2 Key-Request when Operational Wait timer timeout	7.2.2.5	m	
18.	MS supports Dot16KDF algorithm	7.2.2.2, 7.5.4.6.1	m	
Comments: In case of initial network entry, MS shall not send PKMv2 EAP-Start message.				

Table 118 - PKM message encodings support

Mobile Station (MS)				
Item	**Capability**	**Reference**	**Status**	**Support**
1	(one or more) SA_TEK_Update	11.1.10	m	
2	Security negotiation parameters	11.8.4	m	
3	Display-String	11.9.1	o	
4	TEK	11.9.3	m	
5	Key lifetime	11.9.4	m	
6	Key sequence number	11.9.5	m	
7	SAID	11.9.7	m	
8	TEK-Parameters	11.9.8	m	
9	Error-code	11.9.10	m	
10	Security capabilities	11.9.13	m	
11	Cryptographic suite	11.9.14	m	
12	Cryptographic suite list	11.9.15	m	
13	SA descriptor(s)	11.9.17	m	
14	SA type	11.9.18	m	
15	PKM configuration settings	11.9.19	m	
16	Nonce	11.9.20	m	
17	MS_random	11.9.21	m	
18	BS_random	11.9.22	m	
19	CMAC Digest	11.9.27	m	
20	AKID	11.9.32	m	
21	EAP payload	11.9.33	m	
22	SA service type	11.9.36	m	
23	PKMv2 configuration settings	11.9.36	m	
24	Frame Number	11.9.37	m	
Comments:				

Table 119 - Authorization Policy Support

Mobile Station (MS)				
Item	**Capability**	**Reference**	**Status**	**Support**
1	802.16 Authorization policy support (This is about the capability of negotiating authorization policy.)	11.7.8.7	m	
Comments:				

Table 120 - PKM Version Support

Mobile Station (MS)				
Item	**Capability**	**Reference**	**Status**	**Support**
1	PKMv2 Support	11.8.4.1	m	
Comments:				

Table 121 - PKMv2 Authorization Policy Support-Initial Network Entry

Mobile Station (MS)				
Item	**Capability**	**Reference**	**Status**	**Support**
1	No Authorization	11.8.4.2	m	
2	EAP-based authorization	11.8.4.2, 7.1.3.2 and 7.2.2.2.2	m	
Comments:				

Table 122 - PKMv2 Authorization Policy Support-Network Re-entry

Mobile Station (MS)				
Item	**Capability**	**Reference**	**Status**	**Support**
1	No Authorization	11.8.4.2	m	
2	EAP-based authorization	11.8.4.2, 7.1.3.2 and 7.2.2.2.2	m	
Comments:				

Table 123 - Supported Cryptographic Suites

Mobile Station (MS)				
Item	**Capability**	**Reference**	**Status**	**Support**
1	No data encryption, no data authentication & no key encryption	11.9.14	m	
2	CCM-Mode 128-bit AES, CCM-Mode, AES Key Wrap with 128-bit key	11.9.14	m	
Comments: For Item 1 This cryptographic suite means that no encryption and no TEK exchange.				

Table 124 - Message Authentication Code Mode

Mobile Station (MS)				
Item	**Capability**	**Reference**	**Status**	**Support**
1	No message authentication	11.8.4.3	m	
2	CMAC	11.8.4.3	m	
Comments:				

Table 125 - Security Association

Mobile Station (MS)				
Item	**Capability**	**Reference**	**Status**	**Support**
1	Support of Static SA	7.2.1.1 and 7.3.2	m	
2	Support of Dynamic SA	7.2.1.1	o	
3	Support of Primary SA	7.2.1.1	m	
Comments:				

Table 126 - SA Service Type

Mobile Station (MS)				
Item	**Capability**	**Reference**	**Status**	**Support**
1	Unicast	11.9.35	m	
Comments:				

Table 127 - EAP Authentication Methods

Mobile Station (MS)				
Item	**Capability**	**Reference**	**Status**	**Support**
1	Adopt recommendation from NWG	7.1.3.2 and 7.2.2.2.2		
Comments:				

2.5.1.1.2.2.16 MBS

Table 128 - MBS

Mobile Station (MS)				
Item	**Capability**	**Reference**	**Status**	**Support**
1	MBS without Macro Diversity within a Zone	6.3.13	IOMS-MBS	a. Identical SDU or SDU fragments transmitted at same frame number. No other synchronization guaranteed.
2	MBS with Macro-diversity within a zone	6.3.13	IOMS-MBS	
3	Support for MBS_MAP-IE	8.4.5.3.12	IOMS-MBS	
4	MS initiated MBS request using DSA-REQ	11.13.22	o	
5	BS initiated MBS request using DSA-REQ, DSC-REQ and DSD-REQ	11.13.22	IOMS-MBS	
6	BS initiated MBS request using Group DSA-REQ and DSC-REQ	11.13.39	IOMS-MBS2	
7	Update of MBS configuration using MCID_Preallocation and Transmission Info. TLV (upon traversing MBS zone boundary).	11.1.12.1	IOMS-MBS3	
8	Update of MBS configuration using MCID_Continuity and Transmission Info. TLV (upon traversing MBS zone boundary)	11.1.12.2	IOMS-MBS3	
9	Location Update for MBS Update	6.3.23.8.1.5, 6.3.2.3.5	IOMS-MBS4	
Comments:				

2.5.1.1.2.2.17 MS's Network Entry issued by BS restart

Table 129 - MS's Network Entry issued by BS restart

Mobile Station (MS)				
Item	**Capability**	**Reference**	**Status**	**Support**
1	MS's Network Entry triggered by BS restart counter change	6.3.9.11, 11.4.1	m	
Comments:				

2.5.1.1.2.2.18 MAC support for H-ARQ

Table 130 - MAC support for H-ARQ

Mobile Station (MS)				
Item	**Capability**	**Reference**	**Status**	**Support**
1	HARQ Support for transport connections	6.3.17	m	
2	HARQ Buffer Negotiation Capability	11.8.3.7.19	m	
3	HARQ Channel mapping	6.3.17, 11.13.32	m	
4	Capability of DL HARQ channels Number negotiation	11.8.3.7.2	m	
5	Capability of UL HARQ channels Number negotiation	11.8.3.7.3	m	
6	Capability of HARQ ACK delay negotiation in DL transmission	11.4.1	m	
7	Capability of HARQ ACK delay negotiation in UL transmission	11.3.1	m	
8	PDU SN extended subheader for HARQ reordering	11.13.33	m	
9	HARQ Support for UL MAC management connections after SBC	6.3.17	m	
Comments: All items below are conditional dependently on HARQ support. HARQ Channel mapping is determined by BS.				

2.5.1.1.2.2.19 MAC support for load balancing

Table 131 - MAC support for load balancing

Mobile Station (MS)				
Item	**Capability**	**Reference**	**Status**	**Support**
1	Support for preamble index override in initial network entry, re-entry from idle mode and handover	[1] 6.3.2.3.6	m	
2	Support for ranging abort timer in initial network entry, re-entry from idle mode and handover	[1] 6.3.2.3.6	m	
3	Support for DL frequency override in initial network entry, re-entry from idle mode and handover	[1] 6.3.2.3.6, [1] 11.6	m	
Comments: Items 1,and 3 may occur individually or simultaneously in a given message.				

2.5.1.1.2.2.20 BW request ranging using BR Ranging Code set 1

Table 132 - BW request ranging using BR Ranging Code set 1

Mobile Station (MS)				
Item	**Capability**	**Reference**	**Status**	**Support**
1	MS receives UL-MAP containing periodic ranging opportunity	[1] 6.3.2.3.6	m	
2	MS sends BR ranging code from BR Ranging Code set 1 after random selection	[1] 6.3.2.3.6	m	
3	MS sends an BR ranging code from BR Ranging Code set 1 again after random backoff, if the BS does not respond	[1] 6.3.2.3.6, [1] 11.6	m	
4	MS receives CDMA allocation IE		m	
5	MS sends BR Header in a UL slot allocated by CDMA allocation IE		m	
6	MS retransmits the corresponding BR Header in UL slot allocated by CDMA allocation IE with the same ranging attribute (i.e. frame number index, ranging code, ranging symbol, and ranging subchannel), within 16 frames.		m	
Comments:				

2.5.1.2 Base Station

2.5.1.2.1 PHY functions

2.5.1.2.1.1 Sampling Factor

Table 133 - Sampling Factor for BS

Base Station (BS)				
Item	**Capability**	**Reference**	**Status**	**Support**
1	8/7	[1] 8.4.2.3	m	
2	28/25	[1] 8.4.2.3	m	
Comments: Item 1 is used for Table 3-1, 3, 8 and 11 and Item 2 is used for Table 3-2, 4, 5, 6, 7, 9, 10 and 12.				

2.5.1.2.1.2 Cyclic Prefix

Table 134 - Cyclic Prefix for BS

Base Station (BS)				
Item	**Capability**	**Reference**	**Status**	**Support**
1	1/8	[1] 8.4.2.3, [4]	m	
Comments:				

2.5.1.2.1.3 Frame Duration

Table 135 - Frame duration codes for BS

Base Station (BS)				
Item	**Capability**	**Reference**	**Status**	**Support**
1	5 msec	8.4.5.2, [4]	m	
Comments:				

2.5.1.2.1.4 TTG/RTG

Table 136 - TTG performance for BS

Base Station (BS)				
Item	**Capability**	**Reference**	**Status**	**Support**
1	188 PS for 3.5 MHz	8.4.4.2	oi.129	
2	148 PS for 5 MHz	8.4.4.2	oi.129	
3	376 PS for 7 MHz	8.4.4.2	oi.129	
4	409 PS for 8 MHz	8.4.4.2	oi.129	
5	218 PS for 8.75 MHz	8.4.4.2	oi.129	
6	296 PS for 10 MHz	8.4.4.2	oi.129	
Comments:				

Table 137 - RTG performance for BS

Base Station (BS)				
Item	**Capability**	**Reference**	**Status**	**Support**
1	60 PS for 3.5 MHz	8.4.4.2	oi.130	
2	84 PS for 5 MHz	8.4.4.2	oi.130	
3	120 PS for 7 MHz	8.4.4.2	oi.130	
4	135 PS for 8 MHz	8.4.4.2	oi.130	
5	186 PS for 8.75 MHz,	8.4.4.2	oi.130	
6	168 PS for 10 MHz	8.4.4.2	oi.130	
Comments:				

2.5.1.2.1.5 UL and DL Subframe Size

Table 138 - Number of OFDM Symbols in DL and UL

Base Station (BS)					
Item	**Capability**	**Value**	**Reference**	**Status**	**Support**
1.	Number of OFDM Symbols in DL and UL for 5 MHz BW	(35, 12)	8.4.4.2, [4]	oi.131	
		(34, 13)			
		(33, 14)			
		(32, 15)			
		(31, 16)			
		(30, 17)			
		(29, 18)			
		(28, 19)			
		(27, 20)			
		(26, 21)			
2.	Number of OFDM Symbols in DL and UL for 10 MHz BW	(35, 12)	8.4.4.2, [4]	oi.131	
		(34, 13)			
		(33, 14)			
		(32, 15)			
		(31, 16)			
		(30, 17)			
		(29, 18)			
		(28, 19)			
		(27, 20)			
		(26, 21)			
3.	Number of OFDM Symbols in DL and UL for 8.75 MHz BW	(30, 12)	8.4.4.2, [4]	oi.131	
		(29, 13)			
		(28, 14)			
		(27, 15)			
		(26, 16)			
		(25, 17)			
		(24, 18)			
4.	Number of OFDM Symbols in DL and UL for 3.5 MHz BW	(24, 09)	8.4.4.2, [4]	oi.131	
		(23, 10)			
		(22, 11)			
		(21, 12)			
		(20, 13)			
		(19, 14)			

Base Station (BS)					
Item	**Capability**	**Value**	**Reference**	**Status**	**Support**
		(18, 15)			
5.	Number of OFDM Symbols in DL and UL for 7 MHz BW	(24, 09)	8.4.4.2, [4]	oi.131	
		(23, 10)			
		(22, 11)			
		(21, 12)			
		(20, 13)			
		(19, 14)			
		(18, 15)			
6.	Number of OFDM Symbols in DL and UL for 8 MHz BW	(28, 9)	8.4.4.2, [4]	oi.131	
		(27, 10)			
		(26, 11)			
		(25, 12)			
		(24, 13)			
		(23, 14)			
		(22, 15)			
		(21, 16)			
		(20, 17)			
Comments: First value in the pairs is number of symbols in DL subframe and the second value is the number of symbols in UL subframe.					

2.5.1.2.1.6 Subcarrier Allocation Mode

Table 139 - DL subcarrier allocation for BS

Base Station (BS)				
Item	**Capability**	**Reference**	**Status**	**Support**
1	PUSC	8.4.6.1.2.1, [4]	m	
2	PUSC with all subchannels	8.4.6.1.2.1, [4]	m	
3	PUSC with dedicated pilots	8.4.6.1.2.1, 8.4.5.3.4, [4]	IO-BF	
4	Not used			
5	AMC 2x3	8.4.6.3, [4]	m	
6	AMC 2x3 with dedicated pilots	8.4.6.3, 8.4.5.3.4, [4]	IO-BF	
Comments:				

Table 140 - UL subcarrier allocation for BS

Base Station (BS)				
Item	**Capability**	**Reference**	**Status**	**Support**
1.	PUSC	8.4.6.2.1, [4]	m	
2.	PUSC without subchannel rotation	11.3.1, [4]	Y	
3.	AMC 2x3	8.4.6.3, [4]	m	
Comments:				

2.5.1.2.1.7 UL Channel Sounding

Table 141 - UL Sounding 1 for BS

Base Station (BS)				
Item	**Capability**	**Reference**	**Status**	**Support**
1	Type A with Cyclic shift- support for P values other than 9 and 18	8.4.6.2.7.1	IO-SND	
2	Type A with Cyclic shift – Support P values of 9 and 18	8.4.6.2.7.1	IO-SND	
3	Type A with Decimation	8.4.6.2.7.1	IO-SND	
4	Power Assignment Method: Equal Power (0b00)	8.4.6.2.7.1, 8.4.6.2.7.2	IO-SND	
Comments:				

Table 142 - UL Sounding 2 for BS

Base Station (BS)				
Item	**Capability**	**Reference**	**Status**	**Support**
1	Sounding response time capability = Next Frame	8.4.6.2.7.1, 11.8.3.7.14, [4]	IO-SND	
2	max number of simultaneous sounding instructions = 2	8.4.6.2.7.1, 11.8.3.7.14, [4]	IO-SND	
Comments:				

2.5.1.2.1.8 Ranging and Band Width Request

Table 143 - Initial ranging for BS

Base Station (BS)				
Item	**Capability**	**Reference**	**Status**	**Support**
1	Initial Ranging in PUSC zone with 2 symbols	8.4.7.1	m	
2	Initial Ranging using Initial Ranging Code set 1 in PUSC zone with 2 symbols		m	
Comments:				

Table 144 - HO ranging for BS

Base Station (BS)				
Item	**Capability**	**Reference**	**Status**	**Support**
1	HO Ranging in PUSC zone with 2 symbols	8.4.7.1	m	
2	HO Ranging using HO Ranging Code set 1 in PUSC zone with 2 symbols		IO-RNG_SPLIT	
3	HO Ranging using HO Ranging Code set 2 in PUSC zone with 2 symbols		m	
Comments:				

Table 145 - Periodic Ranging for BS

Base Station (BS)				
Item	**Capability**	**Reference**	**Status**	**Support**
1	Periodic Ranging in PUSC zone with 1 symbols	8.4.7.2	m	
Comments:				

Table 146 - BW Request for BS

Base Station (BS)				
Item	**Capability**	**Reference**	**Status**	**Support**
1	BW Request in PUSC zone with 1 symbol	8.4.7.2	m	
2	BW Request using BR Ranging Code set 1 in PUSC zone with 1 symbol		m	
Comments:				

2.5.1.2.1.9 Fast Feedback

Table 147 - Fast-Feedback/CQI Channel Encoding for BS

Base Station (BS)				
Item	**Capability**	**Reference**	**Status**	**Support**
1	6 bits	[3] 8.4.5.4.10.5	m	
Comments:				

Table 148 - Fast-Feedback/CQI Channel Allocation Method for BS

Base Station (BS)				
Item	**Capability**	**Reference**	**Status**	**Support**
1	Fast feedback channel allocation using CQICH Allocation IE	[1] 8.4.5.4.12	m	
Comments:				

2.5.1.2.1.10 Channel Coding

Table 149 - Repetition for BS

Base Station (BS)				
Item	**Capability**	**Reference**	**Status**	**Support**
1	Repetition	8.4.9.5	m	
Comments: Item 1 is only applicable to Table 34-1, Table 35-1, Table 36-1, (i.e. QPSK ½ for SISO) and Table 41-1 (i.e., QPSK ½ for Matrix-A MIMO).				

Table 150 - Randomization for BS

Base Station (BS)				
Item	**Capability**	**Reference**	**Status**	**Support**
1	Randomization	8.4.9.1	m	
Comments:				

Table 151 - Convolutional Code for BS

Base Station (BS)				
Item	**Capability**	**Reference**	**Status**	**Support**
1	Tail Biting	8.4.9.2.1	m	
Comments: Convolutional Code shall be only applicable for FCH.				

Table 152 - Convolutional Turbo Code for BS

Base Station (BS)				
Item	**Capability**	**Reference**	**Status**	**Support**
1	CTC	8.4.9.2.3 excluding 8.4.9.2.3.5	m	
Comments:				

Table 153 - Interleaving for BS

Base Station (BS)				
Item	**Capability**	**Reference**	**Status**	**Support**
1	Interleaving	8.4.9.3	m	
Comments:				

2.5.1.2.1.11 HARQ

Table 154 - HARQ Chase Combining for BS

Base Station (BS)				
Item	**Capability**	**Reference**	**Status**	**Support**
1	Chase with CTC	8.4.15.1	m	
Comments:				

Table 155 - ACK Channel for BS

Base Station (BS)				
Item	**Capability**	**Reference**	**Status**	**Support**
1	ACK channel	8.4.5.4.13	m	
Comments:				

2.5.1.2.1.12 Control Mechanism

Table 156 - Synchronization for BS

Base Station (BS)				
Item	**Capability**	**Reference**	**Status**	**Support**
1	BS Synchronization in time /slot	8.4.10.1.1, 6.3.2.3.47	m	
2	BS Synchronization in frequency	8.4.10.1.1	m	
3	BS to Neighbor BS Synchronization in frequency	6.3.2.3.47	m	
Comments:				

2.5.1.2.1.13 Power Control

Table 157 - Closed-loop Power Control for BS

Base Station (BS)				
Item	**Capability**	**Reference**	**Status**	**Support**
1	Closed loop power control	8.4.10.3 and 8.4.10.3.1	m	
Comments:				

Table 158 - Open-loop Power Control for BS

Base Station (BS)				
Item	**Capability**	**Reference**	**Status**	**Support**
1	Open loop power control	8.4.10.3.2	m	
2	Passive Uplink open loop power control	8.4.10.3.2	m	
3	UL Tx power and Headroom transmission condition using bandwidth request and UL Tx Power Report header	8.4.10.3.2.1 and 6.3.2.1.2.1.2	m	
Comments:				

2.5.1.2.1.14 Channel Quality Measurements

Table 159 - CINR Measurement for BS

Base Station (BS)				
Item	**Capability**	**Reference**	**Status**	**Support**
1	Physical CINR measurement from the preamble for frequency reuse==1 (feedback type=0b00 and report type=0 and CINR preamble report type=0)	6.3.18, 8.4.5.4.12, 8.4.11.3 and 11.8.3.7.9	m	
2	Physical CINR measurement from the preamble for frequency reuse==3 (feedback type=0b00 and report type=0 and CINR preamble report type=1)	6.3.18, 8.4.5.4.12, 8.4.11.3 and 11.8.3.7.9	m	
3	Physical CINR measurement for a permutation zone from pilot subcarriers (feedback type=0b00 and report type=1 and CINR zone measurement type=0)	6.3.18, 8.4.5.4.12, 8.4.11.3 and 11.8.3.7.9	m	
4	Effective CINR measurement for a permutation zone from pilot subcarriers (feedback type=0b01 and report type=1 and CINR zone measurement type=0)	6.3.18, 8.4.5.4.12, 8.4.11.3 and 11.8.3.7.9	m	
5	Major group indication (applicable to PUSC zone only)	8.4.5.4.12	IO-BF	
6	MIMO permutation feedback cycle (applicable to MIMO only)	8.4.5.4.12	IO-MIMO	
Comments:				

2.5.1.2.1.15 Modulation

Table 160 - PRBS for BS

Base Station (BS)				
Item	**Capability**	**Reference**	**Status**	**Support**
1	PRBS	8.4.9.4.1	m	
Comments:				

Table 161 - Downlink MCS for BS, Convolutional Coding

Base Station (BS)				
Item		**Reference**	**Status**	**Support**
1	QPSK (CC) 1/2	11.4.2	m	
Comments:				

Table 162 - Downlink MCS for BS, Convolutional Turbo Code

Base Station (BS)				
Item		**Reference**	**Status**	**Support**
1.	QPSK (CTC) 1/2	11.4.2	**m**	
2.	QPSK (CTC) 3/4	11.4.2	m	
3.	16-QAM (CTC) 1/2	11.4.2	m	
4.	16-QAM (CTC) 3/4	11.4.2	m	
5.	64-QAM (CTC) 1/2	11.4.2	m	
6.	64-QAM (CTC) 2/3	11.4.2	m	
7.	64-QAM (CTC) 3/4	11.4.2	m	
8.	64-QAM (CTC) 5/6	11.4.2	m	
Comments:				

Table 163 - Uplink MCS for BS, Convolutional Turbo Code

Base Station (BS)				
Item		**Reference**	**Status**	**Support**
1.	QPSK (CTC) 1/2	11.3.1.1	**m**	
2.	QPSK (CTC) 3/4	11.3.1.1	m	
3.	16-QAM (CTC) 1/2	11.3.1.1	m	
4.	16-QAM (CTC) 3/4	11.3.1.1	m	
Comments:				

Table 164 - Pilot modulation for BS

Base Station (BS)				
Item	**Capability**	**Reference**	**Status**	**Support**
1	Not used			
2	Modulation of pilots in downlink belonging to the segment for PUSC permutations	8.4.9.4.3	m	
3	Modulation of pilots in downlink in allocated AMC bins for AMC allocations	8.4.9.4.3	m	
4	Pilot modulation for PUSC with dedicated pilot	8.4.9.4.3	IO-BF	
5	Pilot modulation for MIMO PUSC		IO-MIMO	
6	Pilot modulation for MIMO PUSC with dedicated pilot		IO-BF and IO-MIMO	
7	Pilot modulation for AMC 2x3 with dedicated pilot (BS shall not modulate pilots that belong to bins that are not allocated in the DL-MAP		IO-BF	
Comments: The MS support for Item 6 shall be according to contribution "070126_STC_Dedicated_Pilot_Allocations_ArrayComm_Arvind_Raghavan v2.doc". The BS support for item 6 shall be required when BS applies for IO-BF AND IO-MIMO certifications.				

Table 165 - Preamble modulation for BS

Base Station (BS)				
Item	**Capability**	**Reference**	**Status**	**Support**
1	Modulation of pilots in downlink preamble	8.4.9.4.3.1	m	
Comments:				

Table 166 - FCH for BS

Base Station (BS)				
Item	**Capability**	**Reference**	**Status**	**Support**
1	Used sub-channel bitmap	8.4.4.3	m	
2	DL MAP coding indication	8.4.4.3	m	
3	DL MAP repetition coding	8.4.4.3	m	
Comments:				

Table 167 - Coding of the DL-MAP for BS

Base Station (BS)				
Item	**Capability**	**Reference**	**Status**	**Support**
1	0b010 - CTC encoding used on DL-MAP	8.4.4.3	m	
Comments:				

2.5.1.2.1.16 MAP Support

Table 168 - Normal MAP for BS

Base Station (BS)				
Item	**Capability**	**Reference**	**Status**	**Support**
1	Normal DL-MAP.	6.3.2.3.2	m	
2	Normal UL-MAP	6.3.2.3.4	m	
3	Compressed DL-MAP	8.4.5.6.1	m	
4	Compressed UL-MAP	8.4.5.6.2	m	
5	Sub-DL-UL-MAP in first zone	6.3.2.3.60	m	
6	MBS MAP message	6.3.2.3.57	IO-MBS	
Comments:				

Table 169 - MAP Features for BS

Base Station (BS)				
Item	**Capability**	**Reference**	**Status**	**Support**
1	CID in DL-MAP IE in DL-MAP or Compressed DL-MAP	8.4.5.3.7	m	
2	RCID IE in DL-MAP IE in SUB-DL-UL-MAP	8.4.5.3	m	
3	UL allocation start IE	8.4.5.4.15	m	
4	Space-Time Coding (STC)/Zone switch IE	8.4.5.3.4,	m	
5	HARQ and Sub-MAP pointer IE in compressed DL map	8.4.5.3.10	m	
6	UL Zone Switch IE	8.4.5.4.7	m	
Comments:				

2.5.1.2.1.17 Multiple Input Multiple Output (MIMO)

Table 170 - Supported Features for DL PUSC MIMO for BS

Base Station (BS)				
Item	**Capability**	**Reference**	**Status**	**Support**
1	2-antenna, matrix A	8.4.8.1.2.1.1 8.4.8.1.4	IO-MIMO	
2	2-antenna, matrix B, vertical encoding	8.4.8.1.4, 8.4.8.1.2.1.3	IO-MIMO	
Comments:				

Table 171 - Supported Features for UL PUSC MIMO for BS

Base Station (BS)				
Item	**Capability**	**Reference**	**Status**	**Support**
1	Collaborative SM for two MS with single transmit antenna	8.4.8.1.5	IO-MIMO	
2	Capable of processing pilot pattern A and B	8.4.8.1.5	IO-MIMO	
Comments:				

Table 172 - MIMO Feedback for BS

Base Station (BS)				
Item	**Capability**	**Reference**	**Status**	**Support**
1	Fast DL measurement feedback with more than one Rx antennas	8.4.5.4.10.6 8.4.5.4.10.1 8.4.5.4.10.5	IO-MIMO	
2	Mode selection feedback with 6 bits	8.4.5.4.10.8	IO-MIMO	
Comments:				

Table 173 - HARQ DL support for MIMO for BS

Base Station (BS)				
Item	**Capability**	**Reference**	**Status**	**Support**
1	MIMO DL Chase Combining	8.4.5.3.21	IO-MIMO	
Comments:				

Table 174 - HARQ UL support for MIMO for BS

Base Station (BS)				
Item	**Capability**	**Reference**	**Status**	**Support**
1	MIMO UL Chase Combining	8.4.5.4.24	IO-MIMO	
Comments:				

2.5.1.2.1.18 BS Performance Requirements

Table 175 - Max BS Sensitivity Level for Convolutional Turbo Coding for 3.5 MHz Bandwidth, UL PUSC

BW (MHz)	Sensitivity (dBm)	Reference	Status	Support
QPSK 1/2	-93.1		m	
QPSK 3/4	-89.7		m	
16-QAM 1/2	-87.4		m	
16-QAM 3/4	-83.3		m	
Note: This table is applicable to Table 3-3 only.				
Comments: Equation (149b) of Section 8.4.13.1.1 in [1] and Table 84 in [4] are used for calculation of the numbers. Sensitivity numbers are calculated based on assumption of repetition factor R = 1.				

Table 176 - Max BS Sensitivity Level for Convolutional Turbo Coding for 3.5 MHz Bandwidth, UL AMC

BW (MHz)	Sensitivity (dBm)	Reference	Status	Support
QPSK 1/2	-92.8		m	
QPSK 3/4	-89.4		m	
16-QAM 1/2	-87.1		m	
16-QAM 3/4	-83.0		m	
Note: This table is applicable to Table 3-3 only.				
Comments: Equation (149b) of Section 8.4.13.1.1 in [1] and Table 84 in [4] are used for calculation of the numbers. Sensitivity numbers are calculated based on assumption of repetition factor R = 1.				

Table 177 - Max BS Sensitivity Level for Convolutional Turbo Code for 5 MHz Bandwidth, UL PUSC

BW (MHz)	Sensitivity (dBm)	Reference	Status	Support
QPSK 1/2	-91.6		m	
QPSK 3/4	-88.2		m	
16-QAM 1/2	-85.9		m	
16-QAM 3/4	-81.8		m	
Note: This table is applicable to Table 3-2, Table 3-4, Table 3-6, Table 3-7 and Table 3-10 only.				
Comments: Equation (149b) of Section 8.4.13.1.1 in [1] and Table 84 in [4] are used for calculation of the numbers. Sensitivity numbers are calculated based on assumption of repetition factor R = 1.				

Table 178 - Max BS Sensitivity Level for Convolutional Turbo Code for 5 MHz Bandwidth, UL AMC

BW (MHz)	Sensitivity (dBm)	Reference	Status	Support
QPSK 1/2	-91.3		m	
QPSK 3/4	-87.9		m	
16-QAM 1/2	-85.6		m	
16-QAM 3/4	-81.5		m	
Note: This table is applicable to Table 3-2, Table 3-4, Table 3-6, Table 3-7 and Table 3-10 only.				
Comments: Equation (149b) of Section 8.4.13.1.1 in [1] and Table 84 in [4] are used for calculation of the numbers. Sensitivity numbers are calculated based on assumption of repetition factor R = 1.				

Table 179 - Max BS Sensitivity Level for Convolutional Turbo Code for 7 MHz Bandwidth, UL PUSC

BW (MHz)	Sensitivity (dBm)	Reference	Status	Support
QPSK 1/2	-89.9		m	
QPSK 3/4	-86.5		m	
16-QAM 1/2	-84.2		m	
16-QAM 3/4	-80.1		m	
Note: This table is applicable to Table 3-8 and Table 3-11 only.				
Comments: Equation (149b) of Section 8.4.13.1.1 in [1] and Table 84 in [4] are used for calculation of the numbers. Sensitivity numbers are calculated based on assumption of repetition factor R = 1.				

Table 180 - Max BS Sensitivity Level for Convolutional Turbo Code for 7 MHz Bandwidth, UL AMC

BW (MHz)	Sensitivity (dBm)	Reference	Status	Support
QPSK 1/2	-89.8		m	
QPSK 3/4	-86.4		m	
16-QAM 1/2	-84.1		m	
16-QAM 3/4	-80.0		m	
Note: This table is applicable to Table 3-8 and Table 3-11 only.				
Comments: Equation (149b) of Section 8.4.13.1.1 in [1] and Table 84 in [4] are used for calculation of the numbers. Sensitivity numbers are calculated based on assumption of repetition factor R = 1.				

Table 181 - Max BS Sensitivity Level for Convolutional Turbo Code for 8.75 MHz Bandwidth, UL PUSC

BW (MHz)	Sensitivity (dBm)	Reference	Status	Support
QPSK 1/2	-89.0		m	
QPSK 3/4	-85.6		m	
16-QAM 1/2	-83.3		m	
16-QAM 3/4	-79.2		m	
Note: This table is applicable to Table 3-1 only.				
Comments: Equation (149b) of Section 8.4.13.1.1 in [1] and Table 84 in [4] are used for calculation of the numbers. Sensitivity numbers are calculated based on assumption of repetition factor R = 1.				

Table 182 - Max BS Sensitivity Level for Convolutional Turbo Code for 8.75 MHz Bandwidth, UL AMC

BW (MHz)	Sensitivity (dBm)	Reference	Status	Support
QPSK 1/2	-88.8		m	
QPSK 3/4	-85.4		m	
16-QAM 1/2	-83.1		m	
16-QAM 3/4	-79.0		m	
Note: This table is applicable to Table 3-1 only.				
Comments: Equation (149b) of Section 8.4.13.1.1 in [1] and Table 84 in [4] are used for calculation of the numbers. Sensitivity numbers are calculated based on assumption of repetition factor R = 1.				

Table 183 - Max BS Sensitivity Level for Convolutional Turbo Code for 10 MHz Bandwidth, UL PUSC

BW (MHz)	Sensitivity (dBm)	Reference	Status	Support
QPSK 1/2	-88.5		m	
QPSK 3/4	-85.1		m	
16-QAM 1/2	-82.8		m	
16-QAM 3/4	-78.7		m	
Note: This table is applicable to Table 3-2, Table 3-5, Table 3-6, Table 3-9, Table 3-12 only.				
Comments: Equation (149b) of Section 8.4.13.1.1 in [1] and Table 84 in [4] are used for calculation of the numbers. Sensitivity numbers are calculated based on assumption of repetition factor R = 1.				

Table 184 - Max BS Sensitivity Level for Convolutional Turbo Code for 10 MHz Bandwidth, UL AMC

BW (MHz)	Sensitivity (dBm)	Reference	Status	Support
QPSK 1/2	-88.3		m	
QPSK 3/4	-84.9		m	
16-QAM 1/2	-82.6		m	
16-QAM 3/4	-78.5		m	
Note: This table is applicable to Table 3-2, Table 3-5, Table 3-6, Table 3-9, Table 3-12 only.				
Comments: Equation (149b) of Section 8.4.13.1.1 in [1] and Table 84 in [4] are used for calculation of the numbers. Sensitivity numbers are calculated based on assumption of repetition factor R = 1.				

2.5.1.2.1.19 Minimum Transmit Requirements

Table 185 - Transmit requirements for BS

Base Station (BS)				
Item	**Capability**	**Reference**	**Status**	**Support**
1.	Tx dynamic Range = 10 dB	8.4.12.1	m	
2.	Spectral flatness according to the following: ≤ ±2 dB for spectral lines from – *Nused*/4 to 1 and +1 to *Nused*/4 Within +2/-4 dB for spectral lines from – *Nused*/2 to *Nused*/4 and +*Nused*/4 to *Nused*/2	8.4.12.2	m	
3.	Per sub-carrier flatness ≤ 0.4 dB	8.4.12.2	m	
4.	Tx downlink radio frame shall be time-aligned with the 1pps timing pulse within 1 usec	8.4.12.4, 8.4.10.1.1	m not applicable to IO-NETS	
5.	Tx relative constellation error according to the following: QPSK 1/2 ≤ -15.0 dB QPSK 3/4 ≤ −18.0 dB 16-QAM 1/2 ≤ -20.5 dB 16-QAM 3/4 ≤ -24.0 dB 64-QAM 1/2 (if 64-QAM supported) ≤ -26.0 dB 64-QAM 2/3 (if 64-QAM supported) ≤ -28.0 dB 64-QAM 3/4 (if 64-QAM supported) ≤ -30.0 dB 64QAM-5/6 (if 64QAM is supported) ≤ -30.0 dB	8.4.12.3	m	

Base Station (BS)				
Item	**Capability**	**Reference**	**Status**	**Support**
6.	Tx downlink radio frame shall be time-aligned with the 1pps timing pulse from GPS within 2.3 usec. The transmit reference timing shall not change by more than 25nsec integrated in absolute value over any 1 sec period. The transmitted carrier frequency shall not change by more than 10 Hz integrated in absolute value over any 300 msec period.	8.4.12.4, 8.4.10.1.1	IO-NETS	
Comments:				

2.5.1.2.1.20 Receive Requirements

Table 186 - BS Receiver Requirements

Mobile Station (MS)				
Item	**Capability**	**Reference**	**Status**	**Support**
1	BS Rx Max input level on-channel reception tolerance = -45 dBm	8.4.13.3.2	m	
2	BS Rx Max input level on-channel damage tolerance = -10 dBm	8.4.13.4.2	m	
3	Min adjacent channel rejection at BER=10^{-6} for 3 dB degradation C/I according to the following: 16-QAM 3/4 — 10 dB	8.4.13.2	m	
4	Min alternate channel rejection at BER=10^{-6} for 3 dB degradation C/I according to the following: 16-QAM 3/4 — 29 dB	8.4.13.2	m	
Comments:				

2.5.1.2.1.21 BS Synchronization

Table 187 - BS Synchronization

Mobile Station (MS)				
Item	**Capability**	**Reference**	**Status**	**Support**
1	BS reference frequency accuracy within ± 2*10^-6	8.4.14.1	m	
2	BS to BS frequency synchronization accuracy for Hand Over ≤ 1% of the subcarrier spacing	6.3.2.3.47	m	
Comments:				

2.5.1.2.2 BS MAC functions

Table 188 - Convergence Sub layer protocol support

Mobile Station (MS)				
Item	**Capability**	**Reference**	**Status**	**Support**
1	Packet convergence sub layer	[1] 5.2	m	
Comments:				

2.5.1.2.2.1 Packet Convergence Sublayer

Table 189 - Packet Convergence Sub layer support

Mobile Station (MS)				
Item	**Capability**	**Reference**	**Status**	**Support**
1	Internet Protocol (IPv4)	[1] 5.2.6	m	
2	Internet Protocol (IPv6)	[1] 5.2.6	m	
3	IEEE 802.3 (Ethernet)	[1] 5.2.4	IO-ETH1	
4	IPv4 over 802.3 Ethernet	[1] 5.2.4	IO-ETH2	
5	IPv6 over 802.3 Ethernet	[1] 5.2.4	IO-ETH3	
6	IPv4 with Header Compression (ROHC)	[1] 5.2.7	o	
7	IPv6 with Header compression (ROHC)	[1] 5.2.7	o	
Comments: Item 3, 4, and 5 are not required for WiMAX certified label, only optionally certified.				

Table 190 - Major packet classification

Base Station (BS)				
Item	**Capability**	**Reference**	**Status**	**Support**
1	IP Classification	[1] 11.13.19.3.4	m	
2	Ethernet classification	[1] 11.13.19.3.4	IO-ETH1 OR IO-ETH2 OR IO-ETH3	
Comments:				

Table 191 - IP packet classification in the DL

Item	Capability	Reference	Status	Support
1	Classification based on DSCP /IP TOS field	[1] 5.2.2, 11.13.19.3.4.2	m	
2	Classification based on IP Protocol/Next Header field	[1] 5.2.2, 11.13.19.3.4.3	m	
3	Classification based on IP masked Source Address	[1] 5.2.2, 11.13.19.3.4.4	m	
4	Classification based on IP Destination Address	[1] 5.2.2, 11.13.19.3.4.5	m	
5	Classification based on protocol source port range	[1] 5.2.2, 11.13.19.3.4.6	m	
6	Classification based on protocol destination port range	[1] 5.2.2, 11.13.19.3.4.7	m	
7	Classification based on IPv6 Flow Label field, applicable to IPv6 classification only	[1] 5.2.2, 11.13.19.3.8	m	

Table 192 - PHS

Item	Capability	Reference	Status	Support
1	PHS	5.2.3 5.2.3.1 5.2.3.2	m	
Comments:				

2.5.1.2.2.2 MAC common part sub layer

Table 193 - MAC Common part sublayer functionalities

Base Station (BS)				
Item	**Capability**	**Reference**	**Status**	**Support**
1	Addressing and connections	[1] 6.3.1	m	
2	Construction of PDUs	[1] 6.3.3	m	
3	ARQ	[1] 6.3.4	m	
4	Uplink scheduling service	[1] 6.3.5	m	
5	Bandwidth allocation and request	[1] 6.3.6	m	
6	Contention resolution	[1] 6.3.8	m	
7	Network entry and initialization	[1] 6.3.9	m	
8	Ranging	[1] 6.3.10	m	
9	Update of UL and DL channel descriptors	[1] 6.3.11	m	
10	Quality of service	[1] 6.3.14	m	
Comments:				

Table 194 - Miscellaneous management functions

Base Station (BS)				
Item	**Capability**	**Reference**	**Status**	**Support**
1	MS reset initiated by BS (RES-CMD)	[1] 6.3.2.3.22	o	
2	MS network clock comparison initiated by BS (CLK-CMP)	[1] 6.3.2.3.25	o	
3	MS notifies BS of de-registration (DREG-REQ)	[1] 6.3.2.3.43	m	
4	MS forced by BS to change its channel access (DREG-CMD)	[1] 6.3.2.3.26	m	
5	BS transmits DSX-RVD	[1] 6.3.2.3.27	m	
6	BS transmits REP-REQ message and receives REP-RSP	[1] 6.3.2.3.33	m	
7	BS transmits FPC	[1] 6.3.2.3.34	o	
8	Capability of transmitting the Mobile Country Code MCC (The MCC can be either transmitted as part of the Operator Id either in DL-MAP or DCD, or with the Country Code TLV in the UCD)	6.3.2.3.2, 11.3.1	m	
Comments:				

2.5.1.2.2.2.1 Addressing and Connections

Table 195 - Addressing and Connections

Base Station (BS)				
Item	**Capability**	**Reference**	**Status**	**Support**
1	Globally Unique 48 bits MAC Address, making up three 16 bits CID	[1] 6.3.1	m	
2	Time urgent MAC Management messages on basic connection	[1] 6.3.1	m	
3	Delay tolerant MAC Management messages on primary management connection	[1] 6.3.1	m	
Comments:				

2.5.1.2.2.2.2 Construction and Transmission of MAC PDUs

Table 196 - Transmission conventions

Base Station (BS)				
Item	**Capability**	**Reference**	**Status**	**Support**
1	Fields of MAC messages are transmitted in the same order as they appear in the corresponding tables in the standard.	[1] 6.3.3.1	m	
2	Fields of MAC messages and fields of TLVs, which are specified in the standard as binary numbers (including CRC and HCS) are transmitted as a sequence of their binary digits, starting from MSB. Bit masks (for example, in ARQ) are considered numerical fields. For signed numbers MSB is allocated for the sign. Length field in the “definite form” of ITU-T X.690 is also considered a numerical field.	[1] 6.3.3.1	m	
3	Fields specified as SDUs or SDU fragments (for example, MAC PDU payloads) are transmitted in the same order of bytes as received from upper layers.	[1] 6.3.3.1	m	
4	Fields specified as strings are transmitted in the order of symbols in the string. In cases c and d, bits within a byte are transmitted in the order MSB first.	[1] 6.3.3.1	m	
Comments:				

Table 197 - Subheader and Extended Subheader support

Base Station (BS)				
Item	**Capability**	**Reference**	**Status**	**Support**
1	Extended subheader support	6.3.2.2.7	m	
2	Capability of receiving Grant management Subheader	6.3.2.2.2	m	
Comments:				

Table 198 - PDU concatenation

Base Station (BS)				
Item	**Capability**	**Reference**	**Status**	**Support**
1	Concatenate Multiple MAC PDUs into a single burst of the allocated length.	[1] 6.3.3.2	m	
2	Receive concatenated MAC PDUs and determine disposition via CID.	[1] 6.3.3.2	m	
3	Padding of any unused space with stuff byte value in the DL Burst	[1] 6.3.3.7	m	
Comments:				

Table 199 - SDU Fragmentation

Base Station (BS)				
Item	**Capability**	**Reference**	**Status**	**Support**
1	Fragment a MAC SDU into multiple MAC PDUs applicable to traffic connections and Management messages on Primary management connection	[1] 6.3.3.3	m	
2	Add Fragmentation Sub header to the SDU fragment including setting FC according to the Fragmentation rules table	[1] 6.3.3.3	m	
3	Do not perform fragmentation of PDUs on “Broadcast management” connections	[1] 6.3.2.3	m	
4	Perform fragmentation of PDUs on 'Fragmentable Broadcast management connection	[1] 6.3.2.3	m	
5	Increment the FSN modulo 2048 for non-ARQ connections	[1] 6.3.3.3	m	
6	Increment the BSN modulo 2048 for ARQ connection	[1] 6.3.3.4.2	m	
7	Do not perform fragmentation of PDUs on Basic and Initial Ranging connections	[1] 6.3.2.3	m	
Comments: DCD and UCD message shall be transmitted using "Fragmentable Broadcast management connection"				

Table 200 - SDU reassembly

Base Station (BS)				
Item	**Capability**	**Reference**	**Status**	**Support**
1	Receive and reassemble fragmented SDUs.	[1] 6.3.3.3	m	
2	In case of no-ARQ connection, discard SDUs corrupted due to loss of fragment	[1] 6.3.3.3.1	m	
Comments:				

Table 201 - Packing

Base Station (BS)				
Item	**Capability**	**Reference**	**Status**	**Support**
1	Pack variable length SDUs in a single MAC PDU on non-ARQ connections	[1] 6.3.3.4.1.2	m	
2	Unpack variable length SDUs on non-ARQ connections	[1] 6.3.3.4.1.2	m	
3	Pack variable length SDUs or SDUs fragments in a single MAC PDU on ARQ-enabled connections	[1] 6.3.3.4.2 5.1.2	m	
4	Unpack variable length SDUs or SDUs fragments on ARQ-enabled connections	[1] 6.3.3.4.2 5.1.2	m	
5	Do not perform packing of SDUs on Basic, Broadcast and Initial Ranging connections	[1] 6.3.2.3	m	
6	Perform packing of ARQ Feedback Payload	[1] 6.3.3.4.3	m	
7	Extracting ARQ Feedback IEs from received ARQ Feedback Payload.	[1] 6.3.3.4.3	m	
Comments:				

Table 202 - CRC

Base Station (BS)				
Item	**Capability**	**Reference**	**Status**	**Support**
1	Compute and add CRC, and set CI bit based on connection properties	[1] 6.3.3.5	m	
2	Check CRC based on CI bit	[1] 6.3.3.5	m	
Comments:				

2.5.1.2.2.2.3 ARQ

Table 203 - ARQ

Base Station (BS)				
Item	**Capability**	**Reference**	**Status**	**Support**
1	Pack several ARQ feedback information elements in a single ARQ feedback payload	[1] 6.3.4 5.1.3	m	
2	Insert a single ARQ feedback payload as first payload in a MAC PDU	[1] 6.3.4 5.1.3	m	
Comments:				

2.5.1.2.2.2.4 Data Delivery Services for Base Network

Table 204 - Data Delivery Services for Base Network

Base Station (BS)				
Item	**Capability**	**Reference**	**Status**	**Support**
1	Unsolicited Grant service (UGS)	6.3.20.1.1	m	
2	Real-Time Variable Rate (RT-VR) Service	6.3.20.1.2	m	
3	Non-Real-Time Variable Rate (NRT-VR) Service	6.3.20.1.3	m	
4	Best Effort (BE) Service	6.3.20.1.4	m	
5	Extended Real-Time Variable Rate (ERT-VR) service	6.3.20.1.5	m	
Comments:				

2.5.1.2.2.2.5 Request-Grant Mechanism

Table 205 - Request-Grant mechanism

Base Station (BS)				
Item	**Capability**	**Reference**	**Status**	**Support**
1	Incremental bandwidth request using BW request header	6.3.6.1	m	
2	Aggregate bandwidth request using BW request header	6.3.6.1	m	
3	Bandwidth request using Grant Management Subheader	6.3.2.2.2	m	
4	Request-Grant mechanism combined with UL Tx power report	6.3.2.1.2.1.2	m	
5	CQICH allocation request using CQICH allocation request header	6.3.2.1.2.1.4	m	
6	Contention-based CDMA bandwidth requests	6.3.6.5	m	
Comments				

2.5.1.2.2.2.6 Network entry and initialization

Table 206 - Network entry and initialization

Base Station (BS)				
Item	**Capability**	**Reference**	**Status**	**Support**
1	BS sends downlink parameters using periodic broadcast of the DCD message	6.3.9.2	m	
2	BS sends uplink parameters using periodic broadcast of the UCD message	6.3.9.3, 6.3.9.4	m	
3	BS allocates an initial ranging opportunity	6.3.9.5, 6.3.9.6	m	
4	BS commands MS to adjusts power, timing and frequency during initial ranging	6.3.9.6	m	
5	BS negotiates basic capabilities	6.3.9.7	m	
6	BS performs authorization and key exchange	6.3.9.8, 7.2	m	
7	BS accepts registration request from MS to allow SS in network	6.3.9.9	m	
Comments:				

Table 207 - DL parameter transmission

Base Station (BS)				
Item	**Capability**	**Reference**	**Status**	**Support**
1	BS sends DLFP correctly	[1] 8.4.4.3	m	
2	BS sends DL-MAP correctly	[1] 6.3.9.2	m	
3	BS sends DCD correctly	[1] 6.3.9.2	m	
Comments:				

Table 208 - Initial ranging

Base Station (BS)				
Item	**Capability**	**Reference**	**Status**	**Support**
1	BS sends UL-MAP containing initial ranging opportunity	6.3.10.3.1	m	
2	BS receives initial ranging code from MS	6.3.10.3.1, 8.4.7.1	m	
3	BS sends RNG-RSP with time and power corrections in response to initial ranging code from MS, including an accepted CDMA code and related information that help the MS identify destination of RNG-RSP	6.3.10.3.1	m	
4	BS receives initial ranging code transmitted in periodic ranging region after responding with RNG-RSP including status continue	6.3.10.3.1, 8.4.7.1	m	
5	BS sends CDMA allocation IE after sending RNG-RSP including status success so the MS can transmit RNG-REQ	6.3.10.3.1, 8.4.5.4.3	m	
6	BS receives RNG-REQ transmitted in UL slots allocated by CDMA allocation IE	6.3.10.3.1, 8.4.5.4.3	m	
7	BS assigns Basic and Primary Management CIDs in response to the first RNG-REQ message transmitted in UL slots allocated by CDMA allocation IE	6.3.10.3.1	m	
Comments: Note 1 – BS shall include an accepted CDMA code and related information for identifying SS that will use UL slots allocated by CDMA allocation IE.				

Table 209 - Initial ranging using Initial Ranging Code set 1

Base Station (BS)				
Item	**Capability**	**Reference**	**Status**	**Support**
1	BS sends UL-MAP containing initial ranging opportunity	6.3.10.3.1	m	
2	BS receives initial ranging code out of Initial Ranging Code set 1 from MS	6.3.10.3.1, 8.4.7.1	m	
3	BS sends RNG-RSP with time and power corrections if necessary, in response to initial ranging code from MS, including an accepted CDMA code and related information that help the MS identify destination of RNG-RSP	6.3.10.3.1	m	
4	BS receives initial ranging code out of Initial Ranging Code set 1 transmitted in periodic ranging region after responding with RNG-RSP including status continue	6.3.10.3.1, 8.4.7.1	m	
5	BS sends CDMA allocation IE after sending RNG-RSP including status success so the MS can transmit RNG-REQ	6.3.10.3.1, 8.4.5.4.3	m	
6	BS receives RNG-REQ transmitted in UL slots allocated by CDMA allocation IE	6.3.10.3.1, 8.4.5.4.3	m	
7	If BS does not receive RNG-REQ in UL slot allocated by the CDMA Allocation IE, the BS reallocates a UL slot by CDMA Allocation IE with the same ranging attribute (i.e. frame number index, ranging code, ranging symbol, and ranging subchannel), within 16 frames		m	
8	BS performs soft combining to achieve combining gain on the UL slot transmitted by the MS as per the allocation made with the same CDMA_Allocation_IE.		m	
9	BS assigns Basic and Primary Management CIDs in response to the successfully received RNG-REQ message transmitted in UL slots allocated by CDMA allocation IE(s)	6.3.10.3.1	m	
Comments: Note 1 – BS shall include an accepted CDMA code and related information for identifying SS that will use UL slots allocated by CDMA allocation IE.				

Table 210 - BS basic capability negotiation

Base Station (BS)				
Item	**Capability**	**Reference**	**Status**	**Support**
1	BS receives SBC-REQ	[1] 6.3.9.7	m	
2	BS sends SBC-RSP	[1] 6.3.9.7	m	
Comments:				

Table 211 - BS basic capability negotiation in case of Initial ranging using Initial Ranging Code set 1 or MAC Layer HO Procedures using HO Ranging Code set 1

Base Station (BS)				
Item	**Capability**	**Reference**	**Status**	**Support**
1	BS allocate HARQ UL burst for SBC-REQ with Primary Management CID by using HARQ UL-MAP IE, based on the HARQ capability of HARQ set 1 defined in the OFDMA parameter set TLV		m	
2	BS allocate UL burst for SBC-REQ in UL burst allocated by using UL-MAP IE		m	
3	BS receives SBC-REQ	[1] 6.3.9.7	m	
4	HARQ Chase combining to achieve combining gain on the UL slot transmitted by the MS as per the allocation made with the HARQ UL-MAP IE, based on the HARQ capability of HARQ set 1 defined in the OFDMA parameter set TLV.		m	
5	BS sends SBC-RSP	[1] 6.3.9.7	m	
Comments: see Table 209 and Table 222.				

Table 212 - Registration

Base Station (BS)				
Item	**Capability**	**Reference**	**Status**	**Support**
1	BS receives REG-REQ	[1] 6.3.9.9	m	
2	BS sends REG-RSP.	[1] 6.3.9.9	m	
Comments:				

Table 213 - Periodic ranging

Base Station (BS)				
Item	**Capability**	**Reference**	**Status**	**Support**
1	BS receives periodic ranging code	6.3.10.3.2	m	
2	BS sends RNG-RSP unsolicited or in response to a periodic ranging code with time and/or power and/or frequency corrections or none of above, including an accepted CDMA code and related information that help the MS identify the destination of RNG-RSP	6.3.10.3.2	m	
Comments:				

2.5.1.2.2.2.7 Update of channel descriptors

Table 214 - Update of channel descriptors by BS

Base Station (BS)				
Item	**Capability**	**Reference**	**Status**	**Support**
1	Simultaneous support of two channel descriptors	6.3.11	m	
2	BS sends UL channel descriptors at regular intervals using UCD message with identical Configuration change count	6.3.11	m	
3	BS sends new UL channel descriptors using UCD message with incremented Configuration change count (I+1 mod 256)	6.3.11	m	
4	BS sends DL channel descriptors at regular intervals using DCD message with identical Configuration change count	6.3.11	m	
5	BS sends new DL channel descriptors using DCD message with incremented Configuration change count (I+1 mod 256)	6.3.11	m	
6	Receive with the new uplink parameters starting from the first PS that is covered by the UL-MAP with UCD Count matching the new Configuration Change Count	6.3.11	m	
7	Transmit with the new downlink parameters starting from the frame with the first DL-MAP with a DCD Count matching the new Configuration Change Count	6.3.11	m	
Comments: For item 1, two channel descriptors are the current active set and the new pending set, during the transition period between a DCD or UCD configuration change and when the new configuration becomes active				

2.5.1.2.2.2.8 QoS

Table 215 - Service flow operations

Base Station (BS)				
Item	**Capability**	**Reference**	**Status**	**Support**
1	Dynamic service flow creation - BS-initiated	6.3.14.7.1.2	m	
2	Dynamic service flow creation - MS-initiated	6.3.14.7.1.1	IO-QoS	
3	Dynamic service flow change - BS-initiated	6.3.14.9.4.2	m	
4	Dynamic service flow change - MS-initiated	6.3.14.9.4.1	IO-QoS	
5	Dynamic service flow deletion - BS-initiated	6.3.14.9.5.2	m	
6	Dynamic service flow deletion - MS-initiated	6.3.14.9.5.1	m	
Comments: Item 6 (Dynamic service flow deletion – MS-initiated) DSD is limited to error handling purposes during BS initiated DSA and DSC with these exceptions: if items 2 and 4 are supported then item 6 shall be fully supported. DSC capabilities per items 3 and 4 do not mandate two-step activation of service flows with interim Provisioned state.				

2.5.1.2.2.2.9 Sleep Mode

Table 216 - Sleep Mode

Base Station (BS)				
Item	**Capability**	**Reference**	**Status**	**Support**
1	Sleep Mode Implementation in BS	6.3.21	m	
2	Power Saving Class type 1 support	6.3.21.2	m	
3	Support of Traffic Indication Message for Power Saving Class type 1	6.3.21.2	m	
4	Indicating DL traffic by SLPID bit map in TRF-IND	6.3.21.1 6.3.2.3.46	m	
5	Indicating DL traffic by SLPID in TRF-IND	6.3.21.1 6.3.2.3.46	m	
6	Support of SLPID_Update TLV in TRF-IND	6.3.2.3.46 11.1.8.2	m	
7	Traffic triggered wakening flag	6.3.2.3.44-45, 6.3.21.2	m	
8	Activation of Power Saving Class by unsolicited SLP-RSP message from BS	6.3.2.3.45 6.3.21.1	m	
9	DL sleep control extended subheader	6.3.2.2.7.2 11.7.25	m	
10	Bandwidth request and uplink sleep control header	6.3.2.1.2.1.6 11.7.25	m	
11	Support of periodic ranging in sleep mode	6.3.21.5 11.16.2	m	
12	Sleep mode multicast CID support at BS	10.4 6.3.2.3.46	m	
13	BS Support of triggered action indicated by Enabled-Action-Triggered TLV	6.3.2.3.6, 6.3.2.3.44-45, 6.3.21.1, 11.5, 11.6, 11.7.3, 11.5, 11.6, 11.7.3	m	
Comments:				

2.5.1.2.2.2.10 Handover

Table 217 - Neighbor Advertisement

Base Station (BS)				
Item	**Capability**	**Reference**	**Status**	**Support**
1	Neighbor Advertisement	6.3.2.3.47	m	
2	Support BS index at the BS (Use BS index instead of BSID) in Scan/HO related messages, as numbered in MOB_NBR-ADV	6.3.2.3.48-51, 6.3.2.3.53	m	
Comments:				

Table 218 - Scanning

Base Station (BS)				
Item	**Capability**	**Reference**	**Status**	**Support**
1	Scanning for cell selection (HO)	6.3.2.3.48-49	m	
2	BS allocates Scanning Interval in response to MS request	6.3.2.3.48-49 6.3.21.1.2	m	
3	Unsolicited Scanning Interval Allocation by BS	6.3.2.3.48-49, 6.3.21.1.2	m	
4	BS commands MS to perform scanning triggered by serving BS metrics	6.3.21.1.2	m	
Comments:				

Table 219 - Scan Reporting Type Support

Base Station (BS)				
Item	**Capability**	**Reference**	**Status**	**Support**
1	Periodic reporting based on Report Period as indicated in MOB_SCN-RSP message	6.3.2.3.49, 11.4.1	m	
2	BS commands MS to perform reporting triggered by metric conditions	6.3.2.3.49, 11.4.1	m	
Comments:				

Table 220 - HO/Scan/Report Trigger Metrics

Base Station (BS)				
Item	**Capability**	**Reference**	**Status**	**Support**
1	Mean BS CINR	6.3.2.3.53, 11.8.7	m	
2	Mean BS RSSI	6.3.2.3.53, 11.8.7	m	
3	BS Round Trip Delay	6.3.2.3.53, 11.8.7	m	
Comments:				

Table 221 - MAC Layer HO Procedures

Base Station (BS)				
Item	**Capability**	**Reference**	**Status**	**Support**
1	General HO Support	6.3.21.2, 6.3.2.3.55	m	
2	HO initiated by BS support at BS side	6.3.22.2	m	
3	HO initiated by MS support at BS side	6.3.22.2	m	
4	HO Indication	6.3.21.2.5	m	
5	Cancellation of HO	6.3.21.2.3	m	
6	Metric Triggered HO Requests	11.1.7 (table 348g)	m	
7	Resource Retention Support	6.3.2.3.52, 6.3.2.3.54	m	
8	CDMA HO Ranging	6.3.10.3.3	m	
9	HO_ID support	6.3.2.3.52, 6.3.2.3.54	o	
10	Support negotiating of "HO authorization policy" during HO (i.e. between BSs)	6.3.2.3.52, 6.3.2.3.54	m	
Comments:				

Table 222 - MAC Layer HO Procedures using HO Ranging Code set 1

Base Station (BS)				
Item	**Capability**	**Reference**	**Status**	**Support**
1	General HO Support	6.3.21.2, 6.3.2.3.55	m	
2	HO initiated by BS support at BS side	6.3.22.2	m	
3	HO initiated by MS support at BS side	6.3.22.2	m	
4	HO Indication	6.3.21.2.5	m	
5	Cancellation of HO	6.3.21.2.3	m	
6	Metric Triggered HO Requests	11.1.7 (table 348g)	m	
7	Resource Retention Support	6.3.2.3.52, 6.3.2.3.54	m	
8	CDMA HO Ranging using HO Ranging Code set 1	8.4.7.3, 6.3.10.4.2	IO-RNG_SPLIT	
9	HO_ID support	6.3.2.3.52, 6.3.2.3.54	o	
10	Support negotiating of "HO authorization policy" during HO (i.e. between BSs)	6.3.2.3.52, 6.3.2.3.54	m	
11	Allocation of UL slots for a RNG-REQ (i.e. 1st RNG-REQ) message with Ranging CID including MAC Address TLV and GMSH by using a CDMA_Allocation_IE	6.3.10.4.2	IO-RNG_SPLIT	
12	Reallocation of UL slots for the RNG-REQ by using the CDMA_Allocation_IE with the same ranging attribute (i.e. frame number index, ranging code, ranging symbol, and ranging subchannel) within 16 frames, in case that BS did not receive the RNG-REQ message in the UL slot allocated by the CDMA_Allocation_IE.	6.3.10.4.2	IO-RNG_SPLIT	
13	Soft combining to achieve combining gain on the UL slots transmitted by the MS as per the allocation made with the same CDMA_Allocation_IE.	6.3.10.4.2	IO-RNG_SPLIT	
14	Allocation of UL slots for a RNG-REQ (i.e. 2nd RNG-REQ) message with Primary Management CID by using HARQ UL-MAP IE, based on GMSH in the RNG-REQ (i.e. 1st RNG-REQ) message	6.3.10.4.2	IO-RNG_SPLIT	
15	HARQ Chase combining to achieve combining gain on the UL slots transmitted by the MS as per the allocation made with the HARQ UL-MAP IE, based on the HARQ capability of HARQ set 1 defined in the OFDMA parameter set TLV.	6.3.10.4.2	IO-RNG_SPLIT	
Comments:				

Table 223 - MAC Layer HO Procedures using HO Ranging Code set 2

Base Station (BS)				
Item	**Capability**	**Reference**	**Status**	**Support**
1	General HO Support	6.3.21.2, 6.3.2.3.55	m	
2	HO initiated by BS support at BS side	6.3.22.2	m	
3	HO initiated by MS support at BS side	6.3.22.2	m	
4	HO Indication	6.3.21.2.5	m	
5	Cancellation of HO	6.3.21.2.3	m	
6	Metric Triggered HO Requests	11.1.7 (table 348g)	m	
7	Resource Retention Support	6.3.2.3.52, 6.3.2.3.54	m	
8	CDMA HO Ranging using HO Ranging Code set 2	8.4.7.3, 6.3.10.4.3	m	
9	HO_ID support	6.3.2.3.52, 6.3.2.3.54	o	
10	Support negotiating of "HO authorization policy" during HO (i.e. between BSs)	6.3.2.3.52, 6.3.2.3.54	m	
11	Allocation of UL slots for a RNG-REQ message with Ranging CID by using a CDMA_Allocation_IE	6.3.10.4.3	m	
12	Reallocation of UL slots for the RNG-REQ by using the CDMA_Allocation_IE with the same ranging attribute (i.e. frame number index, ranging code, ranging symbol, and ranging subchannel) within 16 frames, in case that BS did not receive the RNG-REQ message in the UL slot allocated by the CDMA_Allocation_IE.	6.3.10.4.3	m	
13	Soft combining to achieve combining gain on the UL slots transmitted by the MS as per the allocation made with the same CDMA_Allocation_IE.	6.3.10.4.3	m	
Comments:				

Table 224 - HO Optimization

Base Station (BS)				
Item	**Capability**	**Reference**	**Status**	**Support**
1	HO Optimization Support	6.3.2.3.6, 6.3.22.2.7, 11.6	m	
2	Support Omission of SBC-REQ management messages	6.3.2.3.6, 6.3.22.2.7, 11.6	m	
3	Support Omission of PKM Authentication phase except TEK Phase	6.3.2.3.6, 6.3.22.2.7, 11.6	m	
4	Support Omission of PKM TEK creation phase during re-entry processing	6.3.2.3.6, 6.3.22.2.7, 11.6	m	
5	Support "Full State Sharing" – No exchange of network re-entry messages after ranging before resuming normal operations	6.3.2.3.6, 6.3.22.2.7, 11.6	m	
6	Unsolicited SBC-RSP management message with updated capabilities information	6.3.2.3.6, 6.3.22.2.7, 11.6	o	
7	Support SBC- RSP TLVs as part of RNG-RSP message	11.6	m	
8	Support Omission of REG-REQ during NW reentry	6.3.2.3.6, 6.3.22.2.7, 11.6	m	
9	Unsolicited REG-RSP with updated capabilities information	6.3.2.3.6, 6.3.22.2.7, 11.6	o	
10	Support REG-RSP TLV as part of RNG-RSP message	11.6	m	
11	Support of ARQ continuation using SN report header after NW re-entry	6.3.2.3.6, 6.3.22.2.7, 11.6	o	
12	Support continuation of non-ARQ connection using SDU SN extended sub-header before handover and using SN report header after NW re-entry	6.3.2.2.7.8, 6.3.2.1.2.1.7	o	
13	Support receiving Bandwidth Request header with zero BR as a notification of MS's successful re-entry registration	6.3.22.2.7, 11.6	m	
14	Support sending traffic IP address refresh bit	11.6	m	
15	Sending SN request extended subheader to request additional SN Report Header after network reentry	6.3.2.2.7.7	o	
Comments:				

Table 225 - CID and SAID Update

Base Station (BS)				
Item	**Capability**	**Reference**	**Status**	**Support**
1	CID update from BS by RNG-RSP	11.7.9, 11.6	m	
2	CID update from BS by REG-RSP	11.7.9	o	
3	Compressed CID update from BS by RNG-RSP	11.7.9.1	m	
4	Compressed CID update from BS by REG-RSP	11.7.9.1	o	
5	SAID update from BS by RNG-RSP	11.7.17, 11.6	m	
6	SAID update from BS by SA-TEK-RSP	11.7.20	m	
Comments:				

2.5.1.2.2.2.11 Idle Mode

Table 226 - Idle Mode

Base Station (BS)				
Item	**Capability**	**Reference**	**Status**	**Support**
1	General Idle Mode functionality	6.3.24	m	
2	Idle mode initiation by DREG-REQ message from MS	6.3.24.1	m	
3	Idle Mode initiation by unsolicited DREG-CMD from BS	6.3.24.1	m	
4	Maintain connection information at BS side during Idle Mode initiation process	6.3.24.1	m	
5	Request from BS MS to retain service and operational information by DREG-CMD message	6.3.24.1	m	
6	BS retention of service and operational information by DREG-REQ message	6.3.24.1	m	
7	BS capability of transmitting Broadcast Control Pointer IE	6.3.24.5	m	
8	Paging Group Update MS	6.3.4.8.1.1	m	
9	Timer Location Update MS	6.3.24.8.1.2	m	
10	Power Down Location Update MS	6.3.24.8.1.3	m	
11	Secure Location Update	6.3.24.8.2.1	m	
12	Un-secure Location Update	6.3.24.8.2.2	m	
13	Paging Preference	11.13.30	m	
14	Idle mode multicast CID support at BS	10.4	m	
Comments:				

2.5.1.2.2.2.12 Expedited Re-entry from Idle Mode

Table 227 - Expedited Re-entry from Idle Mode

Base Station (BS)				
Item	**Capability**	**Reference**	**Status**	**Support**
1.	Expedited network re-entry from Idle Mode support	6.3.23.9	m	
2.	Support Omission of SBC-REQ management messages	11.6	m	
3.	Support Omission of PKM Authentication phase except TEK phase	11.6	m	
4.	Support Omission of PKM TEK creation phase during re-entry processing	11.6	m	
5.	Support "Full State Sharing except ARQ state (blocks in ARQ window and associated timers)" - No exchange of network re-entry messages after ranging before resuming normal operations	11.6	m	
6.	Unsolicited SBC-RSP management message with updated capabilities information	11.6	o	
7.	Support SBC-RSP TLVs as part of RNG-RSP message	11.6	m	
8.	Support Omission of REG-REQ during NW re-entry	11.6	o	
9.	Unsolilcited REG-RSP with updated capabilities information	11.6	m	
10.	Support REG-RSP TLV as part of RNG-RSP message	11.6	m	
11.	MS send Bandwidth Request header with zero BR as a notification of MS's successful re-entry registration.	11.6	m	
12.	Support of transmission of IP refresh bit	11.6	m	
Comments:				

2.5.1.2.2.2.13 Feedback Mechanism

Table 228 - Feedback Mechanism

Base Station (BS)				
Item	**Capability**	**Reference**	**Status**	**Support**
1	Bandwidth request and UL Tx Power Report	6.3.2.1.2.1.2	m	
2	SN report header	6.3.2.1.2.1.7	o	
3	SN request extended subheader	6.3.2.2.7.7	o	
Comments:				

2.5.1.2.2.2.14 Multicast Traffic Connection

Table 229 - Multicast Traffic Connection

Base Station (BS)				
Item	**Capability**	**Reference**	**Status**	**Support**
1	Multicast traffic connection	6.3.13	m	
Comments:				

2.5.1.2.2.2.15 Security Sublayer

Table 230 - Security functions

Base Station (BS)				
Item	**Capability**	**Reference**	**Status**	**Support**
1.	BS supports two simultaneous active TEKs	6.3.9.8, 7.2.1	m	
2.	BS supports SAID update using RNG-REQ/RNG-RSP	11.6	m	
3.	BS supports SAID update using SA-TEK-REQ/SA-TEK-RSP	11.7.20	m	
4.	BS receives PKMv2 EAP-Start	6.3.2.3.9.15	m	
5.	BS exchanges PKMv2 EAP-Transfer	7.2.2.2	m	
6.	BS derives AK	7.2.2.2	m	
7.	BS derives KEK	7.2.2.2	m	
8.	BS derives message authentication keys	7.2.2.2	m	
9.	BS sends PKMv2 SA-TEK-Challenge	7.2.2.2	m	
10.	BS re-sends PKMv2 SA-TEK-Challenge when SAChallengeTimer timeout	7.8.1	m	
11.	BS checks whether AKID is valid or not	7.8.1	m	
12.	BS receives PKMv2 SA-TEK-Request	7.8.1	m	
13.	BS sends PKMv2 SA-TEK-Response	7.8.1	m	
14.	BS manages SAs it included in PKMv2 SA-TEK-Response	7.2.2.5	m	
15.	BS receives PKMv2 Key-Request	7.8.1	m	
16.	BS sends PKMv2 Key-Reply	7.8.1	m	
17.	BS supports Dot16KDF algorithm	7.2.2.2, 7.5.4.6.1	m	
Comments: In case of initial network entry, BS shall not receive PKMv2 EAP-Start message.				

Table 231 - PKM message encodings support

Base Station (BS)				
Item	**Capability**	**Reference**	**Status**	**Support**
1	(one or more) SA_TEK_Update	11.1.10	m	
2	Security negotiation parameters	11.8.4	m	
3	Display-String	11.9.1	o	
4	TEK	11.9.3	m	
5	Key lifetime	11.9.4	m	
6	Key sequence number	11.9.5	m	
7	SAID	11.9.7	m	
8	TEK-Parameters	11.9.8	m	
9	Error-code	11.9.10	m	
10	Security capabilities	11.9.13	m	
11	Cryptographic suite	11.9.14	m	
12	Cryptographic suite list	11.9.15	m	
13	SA descriptor(s)	11.9.17	m	
14	SA type	11.9.18	m	
15	PKM configuration settings	11.9.19	m	
16	Nonce	11.9.20	m	
17	MS_random	11.9.21	m	
18	BS_random	11.9.22	m	
19	CMAC Digest	11.9.27	m	
20	AKID	11.9.32	m	
21	EAP payload	11.9.33	m	
22	SA service type	11.9.36	m	
23	PKMv2 configuration settings	11.9.36	m	
24	Frame Number	11.9.37	m	
Comments:				

Table 232 - Authorization Policy Support

Base Station (BS)				
Item	**Capability**	**Reference**	**Status**	**Support**
1	802.16 Authorization policy support (This is about the capability of negotiating authorization policy.)	11.7.8.7	m	
Comments:				

Table 233 - PKM Version Support

Base Station (BS)				
Item	**Capability**	**Reference**	**Status**	**Support**
1	PKMv2 Support	11.8.4.1	m	
Comments:				

Table 234 - PKMv2 Authorization Policy Support-Initial Network Entry

Base Station (BS)				
Item	**Capability**	**Reference**	**Status**	**Support**
1	No Authorization	11.8.4.2	m	
2	EAP-based authorization	11.8.4.2, 7.1.3.2 and 7.2.2.2.2	m	
Comments:				

Table 235 - PKMv2 Authorization Policy Support-Network Re-entry

Base Station (BS)				
Item	**Capability**	**Reference**	**Status**	**Support**
1	No Authorization	11.8.4.2	m	
3	EAP-based authorization	11.8.4.2, 7.1.3.2 and 7.2.2.2.2	m	
Comments:				

Table 236 - Supported Cryptographic Suites

Base Station (BS)				
Item	**Capability**	**Reference**	**Status**	**Support**
	No data encryption, no data authentication & no key encryption	11.9.14	m	
4	CCM-Mode 128-bit AES, CCM-Mode, AES Key Wrap with 128-bit key	11.9.14	m	
Comments: For Item 1: This cryptographic suite means that no encryption and no TEK exchange.				

Table 237 - Message Authentication Code Mode

Base Station (BS)				
Item	**Capability**	**Reference**	**Status**	**Support**
1	No message authentication	11.8.4.3	m	
2	CMAC	11.8.4.3	m	
Comments:				

Table 238 - Security Association

Base Station (BS)				
Item	**Capability**	**Reference**	**Status**	**Support**
1	Support of Static SA	7.2.1.1 and 7.3.2	m	
2	Support of Dynamic SA	7.2.1.1	m	
3	Support of Primary SA	7.2.1.1	m	
Comments:				

Table 239 - SA Service Type

Base Station (BS)				
Item	**Capability**	**Reference**	**Status**	**Support**
1	Unicast	11.9.35	m	
Comments:				

2.5.1.2.2.2.16 MBS

Table 240 - MBS

Base Station (BS)				
Item	**Capability**	**Reference**	**Status**	**Support**
1	MBS without Macro Diversity within a Zone	6.3.13	IO-MBS	a. Identical SDU or SDU fragments transmitted at same frame number. No other synchronization guaranteed. b. If MBS is supported, either *MBS without Macro Diversity* or *MBS with Macro Diversity* is required.
2	MBS with Macro-diversity within a zone	6.3.13	IO-MBS	If MBS is supported, either MBS without Macro Diversity or MBS with Macro Diversity is required.
3	Support for MBS_MAP-IE	8.4.5.3.12	IO-MBS	
4	MS initiated MBS request using DSA-REQ	11.13.22	O	
5	BS initiated MBS request using DSA-REQ, DSC-REQ and DSD-REQ	11.13.22	IO-MBS	
6	BS initiated MBS request using Group DSA-REQ and DSC-REQ	11.13.39	IO-MBS2	
7	Update of MBS configuration using MCID_Preallocation and Transmission Info. TLV (upon traversing MBS zone boundary).	11.1.12.1	IO-MBS3	
8	Update of MBS configuration using MCID_Continuity and Transmission Info. TLV (upon traversing MBS zone boundary)	11.1.12.2	IO-MBS3	
9	Location Update for MBS Update	6.3.23.8.1.5, 6.3.2.3.5	IO-MBS4	
Comments:				

2.5.1.2.2.2.17 MS's Network Entry issued by BS restart

Table 241 - MS's Network Entry issued by BS restart

Base Station (BS)				
Item	**Capability**	**Reference**	**Status**	**Support**
1	BS transmits BS restart counter TLV when applicable	6.3.9.11, 11.4.1	m	
Comments:				

2.5.1.2.2.2.18 MAC support for H-ARQ

Table 242 - MAC support for H-ARQ

Base Station (BS)				
Item	**Capability**	**Reference**	**Status**	**Support**
1	HARQ Support for transport connections	6.3.17	m	
2	HARQ Buffer Negotiation Capability	11.8.3.7.19	m	
3	HARQ Channel mapping	6.3.17, 11.13.32	m	
4	Capability of DL HARQ channels Number negotiation	11.8.3.7.2	m	
5	Capability of UL HARQ channels Number negotiation	11.8.3.7.3	m	
6	Capability of HARQ ACK delay negotiation in DL transmission	11.4.1	m	
7	Capability of HARQ ACK delay negotiation in UL transmission	11.3.1	m	
8	PDU SN extended subheader for HARQ reordering	11.13.33	m	
9	HARQ Support for UL MAC management connections after SBC	6.3.17	m	
Comments: All items above are conditional dependently on HARQ support. HARQ Channel mapping is determined by BS.				

2.5.1.2.2.2.19 MAC support for load balancing

Table 243 - MAC support for load balancing

Base Station (BS)				
Item	**Capability**	**Reference**	**Status**	**Support**
1	Support for preamble index override in initial network entry, re-entry from idle mode and handover	[1] 6.3.2.3.6	m	
2	Support for ranging abort timer in initial network entry, re-entry from idle mode and handover	[1] 6.3.2.3.6	m	
3	Support for DL frequency override in initial network entry, re-entry from idle mode and handover	[1] 6.3.2.3.6, [1] 11.6	m	
Comments: Items 1 and 3 may occur individually or simultaneously in a given message.				

2.5.1.2.2.2.20 BW request ranging using BR Ranging Code set 1

Table 244 - BW request ranging using BR Ranging Code set 1

Base Station (BS)				
Item	**Capability**	**Reference**	**Status**	**Support**
1	BS sends UL-MAP containing periodic ranging opportunity		m	
2	BS receives BR ranging code from BR Ranging Code set 1 from MS		m	
3	BS sends allocate a UL slot by CDMA allocation IE		m	
4	BS receives BR Header in UL slots allocated by CDMA allocation IE		m	
5	If BS does not receive BR Header in the UL slot allocated by the CDMA Allocation IE, the BS reallocates UL slot by CDMA Allocation IE with the same ranging attributes (i.e. frame number index, ranging code, ranging symbol, and ranging subchannel), within 16 frames		m	
6	BS performs soft combining on the UL slot transmitted by the MS as per the allocation made with the same CDMA_Allocation_IE.		m	
Comments:				

2.6 List of PDUs, MAP IEs, sub-headers, and extended sub-headers

2.6.1 PDUs for MAC layer

2.6.1.1 PDUs for network entry and initialization

Table 245 - BS sending MAC PDUs for network entry and initialisation

Base Station (BS)				
Item	**Capability**	**Reference**	**Status**	**Support**
1	DL-MAP	[1] 6.3.9.2, 6.3.2.3.2	m	
2	DCD	[1] 6.3.9.2, 6.3.2.3.1	m	
3	UL-MAP	[1] 6.3.9.3, 6.3.2.3.4	m	
4	UCD	[1] 6.3.9.3, 6.3.2.3.3	m	
5	RNG-RSP	[1] 6.3.9.5, 6.3.2.3.6	m	
6	SBC-RSP	[1] 6.3.9.7, 6.3.2.3.24	m	
7	PKM-RSP	[1] 6.3.9.8, 6.3.2.3.9	m	
8	REG-RSP	[1] 6.3.9.9	m	
9	Compressed DL-MAP	8.4.5.6	m	
10	Compressed UL-MAP	8.4.5.6	m	
Comments:				

Table 246 - BS receiving MAC PDUs for network entry and initialisation

Base Station (BS)				
Item	**Capability**	**Reference**	**Status**	**Support**
1	RNG-REQ	[1] 6.3.9.5, 6.3.2.3.5	M	
2	SBC-REQ	[1] 6.3.9.7, 6.3.2.3.23	M	
3	PKM-REQ	[1] 6.3.9.8, 6.3.2.3.9	M	
4	REG-REQ	[1] 6.3.9.9, 6.3.2.3.7	M	
Comments:				

Table 247 - MS sending MAC PDUs for network entry and initialisation

Mobile Station (MS)				
Item	**Capability**	**Reference**	**Status**	**Support**
1	RNG-REQ	[1] 6.3.9.5, 6.3.2.3.5	m	
2	SBC-REQ	[1] 6.3.9.7, 6.3.2.3.23	m	
3	PKM-REQ	[1] 6.3.9.8, 6.3.2.3.9	m	
4	REG-REQ	[1] 6.3.9.9, 6.3.2.3.7	m	
Comments:				

Table 248 - MS receiving MAC PDUs for network entry and initialisation

Mobile Station (MS)				
Item	**Capability**	**Reference**	**Status**	**Support**
1	DL-MAP	[1] 6.3.9.2, 6.3.2.3.2	m	
2	DCD	[1] 6.3.9.2, 6.3.2.3.1	m	
3	UL-MAP	[1] 6.3.9.3, 6.3.2.3.4	m	
4	UCD	[1] 6.3.9.3, 6.3.2.3.3	m	
5	RNG-RSP	[1] 6.3.9.5, 6.3.2.3.6	m	
6	SBC-RSP	[1] 6.3.9.7, 6.3.2.3.24	m	
7	PKM-RSP	[1] 6.3.9.8, 6.3.2.3.9	m	
8	REG-RSP	[1] 6.3.9.9	m	
9	Compressed DL-MAP	8.4.5.6	m	
10	Compressed UL-MAP	8.4.5.6	m	
Comments:				

2.6.1.2 PDUs for service flows

Table 249 - BS sending PDUs for service flows

Base Station (BS)				
Item	**Capability**	**Reference**	**Status**	**Support**
1	DSA-REQ (create)	6.3.2.3.10	m	
2	DSA-RSP	6.3.2.3.11	o	
3	DSA-ACK	6.3.2.3.12	m	
4	DSC-REQ (change)	6.3.2.3.13	m	
5	DSC-RSP	6.3.2.3.14	o	
6	DSC-ACK	6.3.2.3.15	m	
7	DSD-REQ (delete)	6.3.2.3.16	m	
8	DSD-RSP	6.3.2.3.17	m	
9	DSX-RVD (creation or change)	6.3.2.3.27	m	
Comments:				

Table 250 - BS receiving PDUs for service flows

Base Station (BS)				
Item	**Capability**	**Reference**	**Status**	**Support**
1	DSA-REQ (create)	6.3.2.3.10	o	
2	DSA-RSP	6.3.2.3.11	m	
3	DSA-ACK	6.3.2.3.12	o	
4	DSC-REQ (change)	6.3.2.3.13	o	
5	DSC-RSP	6.3.2.3.14	m	
6	DSC-ACK	6.3.2.3.15	o	
7	DSD-REQ (delete)	6.3.2.3.16	m	
8	DSD-RSP	6.3.2.3.17	m	
Comments:				

Table 251 - MS sending PDUs for service flows

Mobile Station (MS)				
Item	**Capability**	**Reference**	**Status**	**Support**
1	DSA-REQ (create)	6.3.2.3.10	o	
2	DSA-RSP	6.3.2.3.11	m	
3	DSA-ACK	6.3.2.3.12	o	
4	DSC-REQ (change)	6.3.2.3.13	o	
5	DSC-RSP	6.3.2.3.14	m	
6	DSC-ACK	6.3.2.3.15	o	
7	DSD-REQ (delete)	6.3.2.3.16	m	
8	DSD-RSP	6.3.2.3.17	m	
Comments:				

Table 252 - MS receiving PDUs for service flows

Mobile Station (MS)				
Item	**Capability**	**Reference**	**Status**	**Support**
1	DSA-REQ (create)	6.3.2.3.10	m	
2	DSA-RSP	6.3.2.3.11	o	
3	DSA-ACK	6.3.2.3.12	m	
4	DSC-REQ (change)	6.3.2.3.13	m	
5	DSC-RSP	6.3.2.3.14	o	
6	DSC-ACK	6.3.2.3.15	m	
7	DSD-REQ (delete)	6.3.2.3.16	m	
8	DSD-RSP	6.3.2.3.17	m	
9	DSX-RVD (creation or change)	6.3.2.3.27	m	
Comments:				

2.6.1.3 PDUs for ARQ

Table 253 - BS sending PDUs for ARQ

Base Station (BS)				
Item	**Capability**	**Reference**	**Status**	**Support**
1	ARQ-feedback	[1] 6.3.4	m	
2	ARQ-discard	[1] 6.3.4	m	
3	ARQ-reset	[1] 6.3.4	m	
Comments:				

Table 254 - BS receiving PDUs for ARQ

Base Station (BS)				
Item	**Capability**	**Reference**	**Status**	**Support**
1	ARQ-feedback	[1] 6.3.4	M	
2	ARQ-discard	[1] 6.3.4	M	
3	ARQ-reset	[1] 6.3.4	M	
Comments:				

Table 255 - MS sending PDUs for ARQ

Mobile Station (MS)				
Item	**Capability**	**Reference**	**Status**	**Support**
1	ARQ-feedback	[1] 6.3.4	m	
2	ARQ-discard	[1] 6.3.4	m	
3	ARQ-reset	[1] 6.3.4	m	
Comments:				

Table 256 - MS receiving PDUs for ARQ

Mobile Station (MS)				
Item	**Capability**	**Reference**	**Status**	**Support**
1	ARQ-feedback	[1] 6.3.4	M	
2	ARQ-discard	[1] 6.3.4	M	
3	ARQ-reset	[1] 6.3.4	M	
Comments:				

2.6.1.4 PDUs for miscellaneous capabilities

Table 257 - BS sending MAC PDUs for miscellaneous capabilities

Base Station (BS)				
Item	**Capability**	**Reference**	**Status**	**Support**
1	RES-CMD	[1] 6.3.2.3.22	o	
2	CLK-CMP	[1] 6.3.2.3.25	o	
3	DREG-CMD	[1] 6.3.2.3.26	m	
4	DSX-RVD	[1] 6.3.2.3.27	m	
5	REP-REQ	[1] 6.3.2.3.33	m	
6	FPC	[1] 6.3.2.3.34	o	
Comments:				

Table 258 - BS receiving MAC PDUs for miscellaneous capabilities

Base Station (BS)				
Item	**Capability**	**Reference**	**Status**	**Support**
1	DREG-REQ	[1] 6.3.2.3.43	M	
2	REP-RSP	[1] 6.3.2.3.33	M	
Comments:				

Table 259 - MS sending MAC PDUs for miscellaneous capabilities

Mobile Station (MS)				
Item	**Capability**	**Reference**	**Status**	**Support**
1	DREG-REQ	[1] 6.3.2.3.43	m	
2	REP-RSP	[1] 6.3.2.3.33	m	
Comments:				

Table 260 - MS receiving MAC PDUs for miscellaneous capabilities

Mobile Station (MS)				
Item	**Capability**	**Reference**	**Status**	**Support**
1	RES-CMD	[1] 6.3.2.3.22	M	
2	CLK-CMP	[1] 6.3.2.3.25	O	
3	DREG-CMD	[1] 6.3.2.3.26	M	
4	DSX-RVD	[1] 6.3.2.3.27	M	
5	REP-REQ	[1] 6.3.2.3.33	M	
6	FPC	[1] 6.3.2.3.34	M	
Comments:				

2.6.1.5 PDUs for security

Table 261 - BS sending MAC security messages

Base Station (BS)				
Item	**Capability**	**Reference**	**Status**	**Support**
1	PKM-RSP PKMv2-EAP-Transfer	6.3.2.3.9	m	
2	PKM-RSP PKMv2-SA-TEK-Challenge	6.3.2.3.9	m	
3	PKM-RSP PKMv2-SA-TEK-Response	6.3.2.3.9	m	
4	PKM-RSP PKMv2-Key-Response	6.3.2.3.9	m	
5	PKM-RSP PKMv2-Key-Reject	6.3.2.3.9	m	
6	PKM-RSP PKMv2-SA-Addition	6.3.2.3.9	o	
7	PKM-RSP PKMv2-TEK-Invalid	6.3.2.3.9	m	
Comments:				

Table 262 - BS receiving MAC security messages (Including some PKMv1 which is needed also for PKMv2)

Base Station (BS)				
Item	**Capability**	**Reference**	**Status**	**Support**
1	PKM-REQ PKMv2-EAP-Start	6.3.2.3.9	M	
2	PKM-REQ PKMv2-EAP-Transfer	6.3.2.3.9	M	
3	PKM-REQ PKMv2-SA-TEK-Request	6.3.2.3.9	M	
4	PKM-REQ PKMv2-Key-Request	6.3.2.3.9	M	
Comments:				

Table 263 - MS sending MAC security messages (Including some PKMv1 which is needed also for PKMv2)

Mobile Station (MS)				
Item	**Capability**	**Reference**	**Status**	**Support**
1	PKM-REQ PKMv2-EAP-Start	6.3.2.3.9	m	
2	PKM-REQ PKMv2-EAP-Transfer	6.3.2.3.9	m	
3	PKM-REQ PKMv2-SA-TEK-Request	6.3.2.3.9	m	
4	PKM-REQ PKMv2-Key-Request	6.3.2.3.9	m	
Comments:				

Table 264 - MS receiving MAC security messages

Mobile Station (MS)				
Item	**Capability**	**Reference**	**Status**	**Support**
1	PKM-REQ/RSP PKMv2-EAP-Transfer	6.3.2.3.9	M	
2	PKM-RSP PKMv2-SA-TEK-Challenge	6.3.2.3.9	M	
3	PKM-RSP PKMv2-SA-TEK-Response	6.3.2.3.9	M	
4	PKM-RSP PKMv2-Key-Reply	6.3.2.3.9	M	
5	PKM-RSP PKMv2-Key-Reject	6.3.2.3.9	M	
6	PKM-RSP PKMv2-SA-Addition	6.3.2.3.9	o	
7	PKM-RSP PKMv2-TEK-Invalid	6.3.2.3.9	M	
Comments:				

2.6.1.6 PDUs for Sleep Mode

Table 265 - BS sending MAC PDUs for Sleep Mode

Base Station (BS)				
Item	**Capability**	**Reference**	**Status**	**Support**
1	MOB_SLP-RSP message	6.3.2.3.45	m	
2	MOB_TRF-IND message	6.3.2.3.46	m	
3	DL Sleep control extended subheader	6.3.21.2 6.3.21.3 6.3.21.4 6.3.2.2.7.2	m	
Comments:				

Table 266 - BS receiving MAC PDUs for Sleep mode

Item	**Capability**	**Reference**	**Status**	**Support**
1	MOB_SLP-REQ message	6.3.2.3.44	m	
2	Bandwidth request and uplink sleep control header	6.3.2.1.1, 6.3.2.1.2.1.6	m	
Comments:				

Table 267 - MS receiving MAC PDUs for Sleep Mode

Mobile Station (MS)				
Item	**Capability**	**Reference**	**Status**	**Support**
1	MOB_SLP-RSP message	6.3.2.3.45	m	
2	MOB_TRF-IND message	6.3.2.3.46	m	
3	DL Sleep control extended subheader	6.3.21.2 6.3.21.3 6.3.21.4 6.3.2.2.7.2	m	
Comments:				

Table 268 - MS sending MAC PDUs for Sleep Mode

Mobile Station (MS)				
Item	**Capability**	**Reference**	**Status**	**Support**
1	MOB_SLP-REQ message	6.3.2.3.44	m	
2	Bandwidth request and uplink sleep control header	6.3.2.1.2.1.6	m	
Comments:				

2.6.1.7 PDUs for Handover

Table 269 - BS sending MAC PDUs for Handover

Base Station (BS)				
Item	**Capability**	**Reference**	**Status**	**Support**
1	MOB_SCN-RSP	6.3.2.3.49	m	
2	MOB_NBR-ADV	6.3.2.3.47	m	
3	MOB_BSHO-REQ (Mode = 0x0b000)	6.3.2.3.52	m	
4	MOB_BSHO-REQ (Mode = 0x0b001 to 0xb110)	6.3.2.3.52	o	
5	MOB_BSHO-RSP (Mode = 0x0b000)	6.3.2.3.54	m	
6	MOB_BSHO-RSP (Mode = 0x0b001 to 0xb110)	6.3.2.3.54	o	
7	MOB_BSHO-RSP (Mode = 0b111)	6.3.2.3.54	o	
Comments:				

Table 270 - BS receiving MAC PDUs for Handover

Base Station (BS)				
Item	**Capability**	**Reference**	**Status**	**Support**
1	MOB_SCN-REQ	6.3.2.3.48	M	
2	MOB_SCN-REP	6.3.2.3.50	M	
3	MOB_MSHO-REQ (Arrival Time Difference Indication = 0)	6.3.2.3.53	M	
4	MOB_MSHO-REQ (Arrival Time Difference Indication = 1)	6.3.2.3.53	O	
5	MOB_HO-IND(Mode = 0b00)	6.3.2.3.55	M	
6	MOB_HO-IND(Mode = 0b01 or 0b10)	6.3.2.3.55	O	
Comments:				

Table 271 - MS sending MAC PDUs for Handover

Item	Capability	Reference	Status	Support
1	MOB_SCN-REQ	6.3.2.3.48	m	
2	MOB_SCN-REP	6.3.2.3.50	m	
3	MOB_MSHO-REQ (Arrival Time Difference Indication = 0)	6.3.2.3.53	m	
4	MOB_MSHO-REQ (Arrival Time Difference Indication = 1)	6.3.2.3.53	o	
5	MOB_HO-IND (Mode = 0b00)	6.3.2.3.55	m	
6	MOB_HO-IND (Mode = 0b01 or 0b10)	6.3.2.3.55	o	
Comments:				

Table 272 - MS receiving MAC PDUs for Handover

Base Station (BS)				
Item	**Capability**	**Reference**	**Status**	**Support**
1	MOB_SCN-RSP	6.3.2.3.49	M	
2	MOB_NBR-ADV	6.3.2.3.47	M	
3	MOB_BSHO-REQ (Mode = 0x0b000)	6.3.2.3.52	M	
4	MOB_BSHO-REQ (Mode = 0x0b001 to 0xb110)	6.3.2.3.52	O	
5	MOB_BSHO-RSP (Mode = 0x0b000)	6.3.2.3.54	M	
6	MOB_BSHO-RSP (Mode = 0x0b001 to 0xb110)	6.3.2.3.54	O	
7	MOB_BSHO-RSP (Mode = 0xb111)	6.3.2.3.54	O	
Comments:				

2.6.1.8 PDUs for Idle mode

Table 273 - MS sending MAC PDUs for Idle Mode

Mobile Station (MS)				
Item	**Capability**	**Reference**	**Status**	**Support**
1	DREG-REQ	6.3.2.3.42	m	
Comments:				

Table 274 - MS receiving MAC PDUs for Idle Mode

Mobile Station (MS)				
Item	**Capability**	**Reference**	**Status**	**Support**
1	DREG-CMD	6.3.2.3.26	M	
2	MOB_PAG-ADV	6.3.2.3.56	M	
Comments:				

Table 275 - BS sending MAC PDUs for Idle Mode

Base Station (BS)				
Item	**Capability**	**Reference**	**Status**	**Support**
1	DREG-CMD	6.3.2.3.26	m	
2	MOB_PAG-ADV	6.3.2.3.26	m	
Comments:				

Table 276 - BS receiving MAC PDUs for Idle Mode

Base Station (BS)				
Item	**Capability**	**Reference**	**Status**	**Support**
1	DREG-REQ	6.3.2.3.42	M	
Comments:				

2.6.1.9 PDUs for Feedback

Table 277 - MS sending MAC PDUs for Feedback

Mobile Station (MS)				
Item	**Capability**	**Reference**	**Status**	**Support**
1	Bandwidth request and UL Tx Power Report	6.3.2.1.2.1.2	m	
2	SN report header	6.3.2.1.2.1.7	o	
Comments:				

Table 278 - BS receiving MAC PDUs for Feedback

Base Station (BS)				
Item	**Capability**	**Reference**	**Status**	**Support**
1	Bandwidth request and UL Tx Power Report	6.3.2.1.2.1.2	M	
2	SN report header	6.3.2.1.2.1.7	O	
Comments:				

Table 279 - BS sending MAC PDUs for Feedback

Base Station (BS)				
Item	**Capability**	**Reference**	**Status**	**Support**
1	SN request extended subheader	6.3.2.2.7.7	o	
Comments:				

Table 280 - MS receiving MAC PDUs for Feedback

Mobile Station (MS)				
Item	**Capability**	**Reference**	**Status**	**Support**
1	SN request extended subheader	6.3.2.2.7.7	O	
Comments:				

2.6.1.10 PDUs and MAP IEs for Power Control

Table 281 - BS sending MAC PDUs & MAP IEs for Power Control

Base Station (BS)				
Item	**Capability**	**Reference**	**Status**	**Support**
1	RNG_RSP message	8.4.10.3.1 & 11.6	m	
2	PMC_RSP message	8.4.10.3.2 & 6.3.2.3.59	m	
3	REP_REQ message	8.4.10.3 & 6.3.2.3.33	o	
4	Fast power control message	8.4.10.3 & 6.3.2.3.34	o	
5	power control IE	8.4.10.3 & 8.4.5.4.5	m	
6	UL interference & noise level IE	8.4.10.3 & 8.4.5.3.19	m	
7	Tx power report TLV in UCD	11.3.1	m	
8	Normalized C/N override 2 TLV in UCD	11.3.1	m	
9	Normalized C/N for Channel Sounding TLV in UCD	11.3.1	IO-SND	
10	OFDMA uplink power control support TLVs in SBC-RSP	11.8.3.7.11	m	
11	BS_EIRP TLV in DCD	6.3.9.5.1 & 11.4.1	m	
12	EIRxPIR,max TLV in DCD	6.3.9.5.1 & 11.4.1	m	
Note: PDU of Item 3 is only applicable to closed loop power control.				
Comments:				

Table 282 - BS receiving MAC PDUs & MAP IEs for Power Control

Base Station (BS)				
Item	**Capability**	**Reference**	**Status**	**Support**
1	PMC_REQ message	8.4.10.3.2 & 6.3.2.3.58	m	
2	REP_RSP message	8.4.10.3 & 6.3.2.3.33	o	
3	Maximum transmit power TLV in SBC-REQ	11.8.3.2	m	
4	OFDMA uplink power control support TLVs in SBC-REQ	11.8.3.7.11	m	
5	Bandwidth request and UL Tx power report header	6.3.2.1.2.1.2	m	
Note: PDU of Item 2 is only applicable to closed loop power control.				
Comments:				

Table 283 - MS sending MAC PDUs & MAP IEs for Power Control

Mobile Station (MS)				
Item	**Capability**	**Reference**	**Status**	**Support**
1	PMC_REQ message	8.4.10.3.2 & 6.3.2.3.58	m	
2	REP_RSP message	8.4.10.3 & 6.3.2.3.33	m	
3	Maximum transmit power TLV in SBC-REQ	11.8.3.2	m	
4	OFDMA uplink power control support TLVs in SBC-REQ	11.8.3.7.11	m	
5	Bandwidth request and UL Tx power report header	6.3.2.1.2.1.2	m	
Note: PDU of Item 2 is only applicable to closed loop power control.				
Comments: Message of Item 2 is mandatory as a response to REP-REQ.				

Table 284 - MS receiving MAC PDUs & MAP IEs for Power Control

Mobile Station (MS)				
Item	**Capability**	**Reference**	**Status**	**Support**
1	RNG_RSP message	8.4.10.3.1 & 11.6	m	
2	PMC_RSP message	8.4.10.3.2 & 6.3.2.3.59	m	
3	REP_REQ message	8.4.10.3 & 6.3.2.3.33	m	
4	Fast power control message	8.4.10.3 & 6.3.2.3.34	m	
5	power control IE	8.4.10.3 & 8.4.5.4.5	m	
6	UL interference & noise level IE	8.4.10.3 & 8.4.5.3.19	m	
7	Tx power report TLV in UCD	11.3.1	m	
8	Normalized C/N override 2 TLV in UCD	11.3.1	m	
9	Normalized C/N for Channel Sounding TLV in UCD	11.3.1	m	
10	OFDMA uplink power control support TLVs in SBC-RSP	11.8.3.7.11	m	
11	BS_EIRP TLV in DCD	6.3.9.5.1 & 11.4.1	m	
12	EIRxPIR,max TLV in DCD	6.3.9.5.1 & 11.4.1	m	
13	Relative_Power_Offset_For_UL_HARQ_burst TLV in UCD	8.4.10.3 11.3.1	m	
Note: PDU of Item 3 is only applicable to closed loop power control.				
Comments:				

2.6.1.11 PDUs for band AMC

Table 285 - BS sending MAC PDUs for band AMC

Base Station (BS)				
Item	**Capability**	**Reference**	**Status**	**Support**
1	REP_REQ message (Channel Type Request : Type=1.3, Value = 0b01)	6.3.2.3.33, 6.3.19, 8.4.6.3.2 & 11.11	M	
Comments:				

Table 286 - BS receiving MAC PDUs for band AMC

Base Station (BS)				
Item	**Capability**	**Reference**	**Status**	**Support**
1	REP_RSP message (Enhanced Band-AMC report: Type=2.4)	6.3.2.3.33, 6.3.19, 8.4.6.3.2 & 11.12	M	
Comments: The CINR shall be measured from the preamble.				

Table 287 - MS sending MAC PDUs for band AMC

Mobile Station (MS)				
Item	**Capability**	**Reference**	**Status**	**Support**
1	REP_RSP message (Enhanced Band-AMC report: Type=2.4)	6.3.2.3.33, 6.3.19, 8.4.6.3.2 & 11.12	M	
Comments:				

Table 288 - MS receiving MAC PDUs for band AMC

Mobile Station (MS)				
Item	**Capability**	**Reference**	**Status**	**Support**
1	REP_REQ message (Channel Type Request : Type=1.3, Value = 0b01)	6.3.2.3.33, 6.3.19, 8.4.6.3.2 & 11.11	M	
Comments: The CINR shall be measured from the preamble.				

2.6.2 MAP IEs

Table 289 - BS sending MAP IEs for DL

Base Station (BS)				
Item	**Capabilities**	**Reference**	**Status**	**Support**
1	DL-MAP IE (DIUC 0 ~ 12)	8.4.5.3	m	
2	DL-MAP IE (DIUC 15: Extended DIUC – General)	8.4.5.3	m	
3	DL-MAP IE (DIUC 14: Extended2 DIUC – General)	8.4.5.3	m	
4	Space-Time Coding (STC)/Zone switch IE	8.4.5.3.4	m	
5	CID Switch IE	8.4.5.3.7	m	
6	MIMO DL Basic IE	8.4.5.3.8	IO-MIMO	
7	HARQ and Sub-MAP pointer IE	8.4.5.3.10	m	
8	MBS MAP IE	8.4.5.3.12	IO-MBS	
9	MBS Data IE	6.3.2.3.57	IO-MBS	
10	UL Interference and Noise Level IE	8.4.5.3.19	m	
11	RCID IE	8.4.5.3.20.1	m	
12	HARQ DL-MAP IE	8.4.5.3.21	m	
13	DL HARQ Chase sub-burst IE	8.4.5.3.21	m	
14	MIMO DL Chase HARQ sub-burst IE	8.4.5.3.21	IO-MIMO	
15	Dedicated MIMO DL Control IE	8.4.5.3.21.1	IO-MIMO	
16	Broadcast Control Pointer IE	8.4.5.3.25	m	

Notes: There can be two PUSC MIMO zones 1st with broadcasted pilots and 2nd with dedicated pilots. Beamforming to multiple users with different pilot patterns is not supported.

Comments: With respect to Item 15,

- Limit ‘Control header’ = ‘0b001 for MIMO information (no CQI control info, no closed loop MIMO)
- Limit “N_Layers” = 0b00 for single layer
- If dedicated pilots are used for decoding [i.e. “Dedicated pilots” = 1] limit Num_beamformed_streams = 1, combination of MIMO and BF.

With respect to Item 13,

- Limit LSB #0 of the ‘Dedicated DL Control Indicator’ = ‘0’ (No CQI control.)

With respect to Item 12,

- Support of HARQ DL-MAP IE includes support of RCID_IE (for any possible value of RCID_Type), no matter which DL-MAP IE the HARQ DL-MAP IE is included in (normal DL-MAP message, Compressed DL-MAP message, SUB-DL-UL-MAP message)

Table 290 - BS sending MAP IEs for UL

Base Station (BS)				
Item	**Capability**	**Reference**	**Status**	**Support**
1	UL-MAP IE (UIUC 1 ~ 10)	8.4.5.4	m	
2	UL-MAP IE (UIUC 0: Fast Feedback Channel == FAST-FEEDBACK allocation IE)	8.4.5.4, 8.4.5.4.1 8.4.5.4.9	m	
3	UL-MAP IE (UIUC 12: CDMA Bandwidth Request/CDMA Ranging)	8.4.5.4, 8.4.5.4.1	m	
4	UL-MAP IE (UIUC 13: PAPR reduction/Safety zone/Sounding zone allocation)	8.4.5.4, 8.4.5.4.2	IO-SND	
5	UL-MAP IE (UIUC 14: CDMA allocation IE)	8.4.5.4, 8.4.5.4.3	m	
6	UL-MAP IE (UIUC 15: Extended UIUC – General)	8.4.5.4, 8.4.5.4.3	m	
7	UL-MAP IE (UIUC 11: Extended UIUC2 – General)	8.4.5.4, 8.4.5.4.3	m	
8	Power Control IE	8.4.5.4.5	m	
9	UL Zone switch IE	8.4.5.4.7	m	
10	MIMO UL Basic IE	8.4.5.4.11	IO-MIMO	
11	CQICH Allocation IE	8.4.5.4.12	m	
12	UL allocation start IE	8.4.5.4.15	m	
13	Fast Ranging IE	8.4.5.4.21	m	
14	HARQ UL-MAP IE	8.4.5.4.24	m	
15	UL HARQ Chase sub-burst IE	8.4.5.4.24	m	
16	MIMO UL Chase HARQ sub-burst IE	8.4.5.4.24	IO-MIMO	
17	Dedicated UL control IE	8.4.5.4.24.1	o	
18	HARQ ACKCH region allocation IE	8.4.5.4.25 and 8.4.5.4.13	m	
19	UL Sounding Command IE	8.4.5.4.26	IO-SND	

Comments:

Applicable to item 17

- Limited to 'Num SDMA layers' = 0b01 to represent 2 layer Collaborative SM, and 'Pilot pattern' =0b00 or 0b01, for pattern A or B

With respect to item 4, UIUC=13 shall be used with the restrictions below.

- The number of UIUC=13 allocations shall be maximum 2 per frame.
- When the allocation using UIUC=13 occupies one or more entire OFDMA symbol(s) (i.e., spanning all subchannels), it shall be located in the last symbol(s) of a permutation zone.
- To be aligned with the System Profile, it shall be used for Sounding Zone allocation.

With respect to Item 14,

- Support of HARQ UL-MAP IE includes support of RCID_IE (for any possible value of RCID_Type), no matter which UL-MAP IE the HARQ DL-MAP IE is included in (normal DL-MAP message, Compressed DL-MAP message, SUB-DL-UL-MAP message)

Table 291 - MS receiving MAP IEs for DL

Mobile Station (MS)				
Item	**Capability**	**Reference**	**Status**	**Support**
1	DL-MAP IE (DIUC 0 ~ 12)	8.4.5.3	m	
2	DL-MAP IE (DIUC 15: Extended DIUC – General)	8.4.5.3	m	
3	DL-MAP IE (DIUC 14: Extended2 DIUC – General)	8.4.5.3	m	
4	Space-Time Coding (STC)/Zone switch IE	8.4.5.3.4	m	
5	CID Switch IE	8.4.5.3.7	m	
6	MIMO DL Basic IE	8.4.5.3.8	m	
7	HARQ and Sub-MAP pointer IE	8.4.5.3.10	m	
8	MBS MAP IE	8.4.5.3.12	IOMS-MBS	
9	MBS Data IE	6.3.2.3.57	IOMS-MBS	
10	UL Interference and Noise Level IE	8.4.5.3.19	m	
11	RCID IE	8.4.5.3.20.1	m	
12	HARQ DL-MAP IE	8.4.5.3.21	m	
13	DL HARQ Chase sub-burst IE	8.4.5.3.21	m	
14	MIMO DL Chase HARQ sub-burst IE	8.4.5.3.21	m	
15	Dedicated MIMO DL Control IE	8.4.5.3.21.1	m	
16	Broadcast Control Pointer IE	8.4.5.3.25	m	

Notes: There can be two PUSC MIMO zones 1st with broadcasted pilots and 2nd with dedicated pilots.

Beamforming to multiple users with different pilot patterns is not supported.

Comments:

With respect to item 15,Limit ‘Control header’ = ‘0b001’ for MIMO information (no CQI control info, no closed loop MIMO)

- Limit “N_Layers” = 0b00 for single layer
- If dedicated pilots are used for decoding [i.e. “Dedicated pilots” = 1] limit Num_beamformed_streams = 1, combination of MIMO and BF.

With respect to item 13,

- Limit LSB #0 of the ‘Dedicated DL Control Indicator’ = ‘0’ (No CQI control.)

With respect to Item 12,

- Support of HARQ DL-MAP IE includes support of RCID_IE (for any possible value of RCID_Type), no matter which DL-MAP IE the HARQ DL-MAP IE is included in (normal DL-MAP message, Compressed DL-MAP message, SUB-DL-UL-MAP message)

Table 292 - MS receiving MAP IEs for UL

Mobile Station (MS)				
Item	**Capability**	**Reference**	**Status**	**Support**
1	UL-MAP IE (UIUC 1 ~ 10)	8.4.5.4	m	
2	UL-MAP IE (UIUC 0: Fast Feedback Channel == FAST-FEEDBACK allocation IE)	8.4.5.4, 8.4.5.4.1 8.4.5.4.9	m	
3	UL-MAP IE (UIUC 12: CDMA Bandwidth Request/CDMA Ranging)	8.4.5.4, 8.4.5.4.1	m	
4	UL-MAP IE (UIUC 13: PAPR reduction/Safety zone/Sounding zone allocation)	8.4.5.4, 8.4.5.4.2	m	
5	UL-MAP IE (UIUC 14: CDMA allocation IE)	8.4.5.4, 8.4.5.4.3	m	
6	UL-MAP IE (UIUC 15: Extended UIUC – General)	8.4.5.4, 8.4.5.4.3	m	
7	UL-MAP IE (UIUC 11: Extended UIUC2 – General)	8.4.5.4, 8.4.5.4.3	m	
8	Power Control IE	8.4.5.4.5	m	
9	UL Zone switch IE	8.4.5.4.7	m	
10	MIMO UL Basic IE	8.4.5.4.11	m	
11	CQICH Allocation IE	8.4.5.4.12	m	
12	UL allocation start IE	8.4.5.4.15	m	
13	Fast Ranging IE	8.4.5.4.21	m	
14	HARQ UL-MAP IE	8.4.5.4.24	m	
15	UL HARQ Chase sub-burst IE	8.4.5.4.24	m	
16	MIMO UL Chase HARQ sub-burst IE	8.4.5.4.24	m	
17	Dedicated UL control IE	8.4.5.4.24.1	m	
18	HARQ ACKCH region allocation IE	8.4.5.4.25	m	
19	UL Sounding Command IE	8.4.5.4.26	m	

Comments:

Item 17 is limited to ‘Num SDMA layers’ = 0b01 to represent 2 layer Collaborative SM, and ‘Pilot pattern’ =0b00 or 0b01, for pattern A or B.

Comments: With respect to item 4, UIUC=13 shall be used with the restrictions below.

- The number of UIUC=13 allocations shall be maximum 2 per frame.
- When the allocation using UIUC=13 occupies one or more entire OFDMA symbol(s) (i.e., spanning all subchannels), it shall be located in the last symbol(s) of a permutation zone.
- To be aligned with the System Profile, it shall be used for Sounding Zone allocation.

With respect to Item 14,

- Support of HARQ UL-MAP IE includes support of RCID_IE (for any possible value of RCID_Type), no matter which UL-MAP IE the HARQ DL-MAP IE is included in (normal DL-MAP message, Compressed DL-MAP message, SUB-DL-UL-MAP message)

2.7 PDU fields

2.7.1 Fields of PDUs for MAC layer

2.7.1.1 DL-MAP

Table 293 - PDU: DL-MAP

Item	Capability	Reference	Status	Support
1	Management Message type=2	[1] 6.3.2.3.2	m	
2	DCD count	[1] 6.3.2.3.2	m	
3	Base station ID	[1] 6.3.2.3.2	m	
4	PHY Synchronization Field		m	
Comments:				

Table 294 - PDU: Sub downlink/uplink map

Item	Capability	Reference	Status	Support
1	Compressed Map Indicator	[1] 6.3.2.3.60	m	
2	Map message length	[1] 6.3.2.3.60	m	
3	RCID_type	[1] 6.3.2.3.60	m	
4	HARQ ACK offset indicator	[1] 6.3.2.3.60	m	
5	DL HARQ AK offset	[1] 6.3.2.3.60	m	
6	DL IE Count	[1] 6.3.2.3.60	m	
7	DL_MAP information elements	[1] 6.3.2.3.60	m	
8	OFDMA Symbol Offset	[1] 6.3.2.3.60	m	
9	Subchannel offset	[1] 6.3.2.3.60	m	
10	UL_MAP information elements	[1] 6.3.2.3.60	m	
Comments:				

Table 295 - PDU: Common Part of DL-MAP Information Elements

Item	Capability	Reference	Status	Support
1	CID only if INC_CID = 1	[1] 8.4.5.3	m	
2	DIUC	[1] 8.4.5.3	m	
3	N_CID only if INC_CID = 1	[1] 8.4.5.3	m	
4	RCID_IE if included in SUB-DL-UL-MAP	[1] 8.4.5.3	m	
Comments:				

Table 296 - PDU: Common Part of Extended DIUC

Item	Capability	Reference	Status	Support
1	Extended DIUC	[1] 8.4.5.3.1	m	
2	Length	[1] 8.4.5.3.1	m	
3	Unspecified data	[1] 8.4.5.3.1	m	
Comments:				

Table 297 - PDU: Common Part of Extended-2 DIUC

Item	Capability	Reference	Status	Support
1	Extended-2 DIUC	[1] 8.4.5.3.2	m	
2	Length	[1] 8.4.5.3.2	m	
3	Unspecified data	[1] 8.4.5.3.2	m	
Comments:				

2.7.1.2 DCD

Table 298 - PDU : DCD

Item	Capability	Reference	Status	Support
1	Management Message type=1	[1] 6.3.2.3.1	m	
2	Reserved (Note)	[1] 6.3.2.3.1	m	
3	Configuration Change count	[1] 6.3.2.3.1	m	
Comments:				

Table 299 - DCD TLV

Item	Capability	Reference	Status	Support
1	Frequency	[1] 11.4.1	m	
2	BS Id	[1] 11.4.1	m	
3	MAC version	[1] 11.4.1	m	
4	BS EIRP	[] 4.3.2; [1] 11.4.1	m	
5	TTG	[] 4.3.2; [1] 11.4.1	m	
6	RTG	[] 4.3.2; [1] 11.4.1	m	
7	$EIRxP_{IR,max}$	4.3.2; [1] 11.4.1	m	
8	HO Type Support	4.3.2; [1] 11.4.1	m	
9	Paging Group ID	4.3.2; [1] 11.4.1	m	
10	Trigger, Compound TLV see next Trigger TLV	4.3.2; [1] 11.4.1	m	
11	BS Restart Count	4.3.2; [1] 11.4.1	m	
12	Default RSSI and CINR averaging parameter	4.3.2; [1] 11.4.1	m	
13	DL AMC Allocated Physical Bands Bitmap	4.3.2; [1] 11.4.1	m	
14	OFDMA Downlink_ Burst_Profile	[1] 8.4.5.5	m	
15	Hysteresis margin	11.4.1	m	
16	Time to trigger duration	11.4.1	m	
17	MBS zone identifier list	11.4.1	BS Status: IO-MBS MS Status: IOMS-MBS	
18	Default HO RSSI and CINR averaging parameter	11.4.1	m	
19	Cell Type TLV	IEEE Std 802.16-2009, 11.4.1 WiMAX Forum® Mobile Standard Reference Section 2 Standard Reference Exception 29	BS Status: IO-GPSS/NETS MS Status : IOMS_FMT	

Item	Capability	Reference	Status	Support
Comments:				

Table 300 - OFDMA Downlink_ Burst_Profile

Item	Capability	Reference	Status	Support
1	Type = 1	[1] 8.4.5.5; 11.4.2	m	
2	Length	[1] 8.4.5.5; 11.4.2	m	
3	Reserved (Note)	[1] 8.4.5.5; 11.4.2	m	
4	DIUC	[1] 8.4.5.5; 11.4.2	m	
5	FEC Code Type	[1] 11.4.2	m	
Comments: Reserved bit shall be set to zero				

Table 301 - Trigger TLV

Item	Capability	Reference	Status	Support
1	Type/Function/Action	4.3.2; [1] 11.4.1	m	
2	Trigger Value	4.3.2; [1] 11.4.1	m	
3	Trigger Averaging Duration	4.3.2; [1] 11.4.1	m	
Comments:				

Table 302 - Type/Function/Action Description

Item	Capability	Reference	Status	Support
1	Type	[1] 11.4.1	m	
2	Function	[1] 11.4.1	m	
3	Action	[1] 11.4.1	m	
Comments:				

2.7.1.3 UCD

Table 303 - PDU: UCD

Item	Capability	Reference	Status	Support
1	Management Message type=0	[1] 6.3.2.3.3	m	
2	Configuration Change count	[1] 6.3.2.3.3	m	
3	Ranging backoff start	[1] 6.3.2.3.3	m	
4	Ranging backoff End	[1] 6.3.2.3.3	m	
5	Request backoff start	[1] 6.3.2.3.3	m	
6	Request backoff End	[1] 6.3.2.3.3	m	
Comments				

Table 304 - UCD TLV

Item	Capability	Reference	Status	Support
1	Frequency	[1] 11.3.1	m	
2	Contention-based Reservation Timeout	[1] 11.3.1	m	
3	Start of Ranging Codes Group	[1] 11.3.1	m	
4	Band AMC Allocation Threshold	[1] 11.3.1	o	
5	Band AMC Release Threshold	[1] 11.3.1	o	
6	Band AMC Allocation Timer	[1] 11.3.1	o	
7	Band AMC Release Timer	[1] 11.3.1	o	
8	Band Status Reporting Max Period	[1] 11.3.1	o	
9	Band AMC Retry Timer	[1] 11.3.1	o	
10	Normalized C/N Override-2	[1] 11.3.1	m	
11	Handover Ranging Codes	[1] 11.3.1	m	
12	Initial Ranging Codes	[1] 11.3.1	m	
13	Initial Ranging interval	[1] 11.3.1	m	
14	Tx Power Report	[1] 11.3.1	m	
15	Normalized C/N for Channel Sounding	[1] 11.3.1	IO-SND	
16	Initial Ranging backoff start	[1] 11.3.1	m	
17	Initial Ranging backoff end	[1] 11.3.1	m	
18	Bandwidth request backoff start	[1] 11.3.1	m	
19	Bandwidth request backoff end	[1] 11.3.1	m	
20	Permutation Base	[1] 11.3.1	m	
21	UL allocated subchannels bitmap	[1] 11.3.1	m	
22	HARQ Ack Delay for DL burst	[1] 11.3.1	m	
23	UL AMC allocated physical bands bitmap	[1] 11.3.1	m	
24	Size of CQICH-ID field	[1] 11.3.1	m	
25	Band-AMC entry average CINR	[1] 11.3.1	o	
26	HO_ranging_start	[1] 11.3.1	m	
27	HO_ranging_end	[1] 11.3.1	m	
28	Periodic Ranging Codes	[1] 11.3.1	m	
29	Bandwidth Request Codes	[1] 11.3.1	m	
30	Periodic Ranging Backoff Start	[1] 11.3.1	m	
31	Periodic Ranging Backoff End	[1] 11.3.1	m	
32	CQICH Band AMC Transition Delay	[1] 11.3.1	o	
33	OFDMA Uplink_ Burst_Profile	[1] 8.4.5.5	m	
34	Ranging Region	[1] 11.3.1	m	
35	FastFeedback Region	[1] 11.3.1	m	

Item	Capability	Reference	Status	Support
36	HARQ AckRegion	[1] 11.3.1	m	
37	Sounding Region	[1] 11.3.1	IO-SND	
38	UL PUSC Subchannel Rotation	[1] 11.3.1	IO-BF	
39	MS Maximum Transmission Power Limitation Control	11.3.1	o	
40	Relative_Power_Offset_For_UL_HARQ_burst	8.4.10.3 11.3.1	m	
41	Initial Ranging Code set 1	[6] 11.3.1	m	
42	HO Ranging Code set 1	[6] 11.3.1	IO-RNG_SPLIT, IOMS-RNG_SPLIT for MS	
43	BR Ranging Code set 1	[6] 11.3.1	m	
44	HO Ranging Code set 2	[6] 11.3.1	m	
Comments:				

Table 305 - OFDMA Uplink_ Burst_Profile

Item	Capability	Reference	Status	Support
1	Type = 1	[1] 8.4.5.5	m	
2	Length	[1] 8.4.5.5	m	
3	Reserved (See Note)	[1] 8.4.5.5	m	
4	UIUC	[1] 8.4.5.5	m	
5	FEC Code Type and Modulation Type	4.3.2; [1] 11.3.1.1	m	
Comments: Reserved bit shall be set to zero				

2.7.1.4 UL-MAP

Table 306 - PDU: UL-MAP

Item	Capability	Reference	Status	Support
1	Management Message type=3	[1] 6.3.2.3.4	m	
2	Reserved (Note)	[1] 6.3.2.3.4	m	
3	UCD count	[1] 6.3.2.3.4	m	
4	Allocation start time	[1] 6.3.2.3.4	m	
Comments:				

Table 307 - UL-MAP Information Element(s)

Item	Capability	Reference	Status	Support
1	CID	[1] 8.4.5.4	m	
2	UIUC	[1] 8.4.5.4	m	
3	Duration	[1] 8.4.5.4	m	
4	OFDMA Symbol Offset if UIUC = 12	[1] 8.4.5.4	m	
5	Subchannel offset if UIUC = 12	[1] 8.4.5.4	m	
6	No. of OFDMA symbols if UIUC = 12	[1] 8.4.5.4	m	
7	No. subchannels if UIUC = 12	[1] 8.4.5.4	m	
8	Ranging method if UIUC = 12	[1] 8.4.5.4	m	
9	BS Sending of UL-MAP IE (UIUC = 12) with dedicated ranging indicator	[1] 8.4.5.4	o	
10	MS Receiving of UL-MAP IE (UIUC = 12) with dedicated ranging indicator	[1] 8.4.5.4	o	
11	Repetition coding indication	[1] 8.4.5.4	m	
12	Slot Offset if AAS or AMC UL Zone	[1] 8.4.5.4	m	
13	Padding nibble, if needed	[1] 8.4.5.4	m	
Comments:				

Table 308 - Extended UIUC dependent IE

Item	Capability	Reference	Status	Support
1	Extended UIUC	[1] 8.4.5.4.4.1	m	
2	Length	[1] 8.4.5.4.4.1	m	
3	Unspecified data	[1] 8.4.5.4.4.1	m	
Comments:				

Table 309 - Extended-2 UIUC dependent IE

Item	Capability	Reference	Status	Support
1	Extended-2 UIUC	[1] 8.4.5.4.4.2	m	
2	Length	[1] 8.4.5.4.4.2	m	
3	Unspecified data	[1] 8.4.5.4.4.2	m	
Comments:				

Table 310 - PAPR Reduction/Safety Zone/Sounding Zone Allocation IE

Item	Capability	Reference	Status	Support
1	OFDMA symbol offset	[1] 8.4.5.4.2	IO-SND M for MS	
2	Subchannel offset	[1] 8.4.5.4.2	IO-SND M for MS	
3	No. OFDMA symbols	[1] 8.4.5.4.2	IO-SND M for MS	
4	No. subchannels/SZ Shift Value	[1] 8.4.5.4.2	IO-SND M for MS	
5	PAPR Reduction/Safety zone	[1] 8.4.5.4.2	IO-SND M for MS	
6	Reserved	[1] 8.4.5.4.2	IO-SND M for MS	
7	Sounding Zone	[1] 8.4.5.4.2	IO-SND M for MS	
Comments: The ‘Status’ column for Items 5 and 6 are relevant to the ability of BS encoding and MS decoding of the MAP IE fields and not the support for corresponding functionality specified by the items.				

Table 311 - CDMA Allocation IE

Item	Capability	Reference	Status	Support
1	Duration	[1] 8.4.5.4.3	m	
2	UIUC	[1] 8.4.5.4.3	m	
3	Repetition Coding Indication	[1] 8.4.5.4.3	m	
4	Frame Number Index	[1] 8.4.5.4.3	m	
5	Ranging Code	[1] 8.4.5.4.3	m	
6	Ranging Symbol	[1] 8.4.5.4.3	m	
7	Ranging subchannel	[1] 8.4.5.4.3	m	
8	BW request mandatory	[1] 8.4.5.4.3	m	
Comments:				

Table 312 - Fast Feedback alloc IE

Item	Capability	Reference	Status	Support
1	OFDMA symbol offset	[1] 8.4.5.4.9	m	
2	Subchannel offset	[1] 8.4.5.4.9	m	
3	No. OFDMA symbols	[1] 8.4.5.4.9	m	
4	No subchannels	[1] 8.4.5.4.9	m	
5	reserved	[1] 8.4.5.4.9	m	
Comments:				

2.7.1.5 RNG-REQ and RNG-RSP

Table 313 - PDU: RNG-REQ

Item	Capability	Reference	Status	Support
1	Management Message type=4	[1] 6.3.2.3.5	m	
2	Reserved (Note)	[1] 6.3.2.3.5	m	
Comments:				

Table 314 - RNG-REQ TLV

Item	Capability	Reference	Status	Support
1	Requested Downlink Burst profile	[1] 6.3.2.3.5, 11.5	m	
2	SS MAC address	[1] 6.3.2.3.5, 11.5	m	
3	MAC version	[1] 6.3.2.3.5, 11.5	m	
4	Serving BS ID	[1]11.5	m	
5	HO_ID	[1]11.5	m	
6	Paging Controller ID	[1] 11.1.9.2	m	
7	Power_Down_Indicator	[1]11.5	m	
8	Enabled_Action-Triggered	[1] 11.1.8.1	o	
9	Requested downlink repetition coding level	[1]11.5	m	
10	Ranging Purpose Indication	[1]11.5	m	
11	CMAC Tuple	[1] 11.1.2.2	m	
Comments:				

Table 315 - PDU : RNG-RSP

Item	Capability	Reference	Status	Support
1	Management Message type=5	[1] 6.3.2.3.6	m	
2	Reserved	[1] 6.3.2.3.6	m	
Comments:				

Table 316 - RNG-RSP TLV

Item	Capability	Reference	Status	Support
1	Timing Adjust Information	[1] 6.3.2.3.6, 11.6	m	
2	Power Adjust Information	[1] 6.3.2.3.6, 11.6	m	
3	Ranging Status	[1] 6.3.2.3.6, 11.6	m	
4	DL Frequency Override	[1] 6.3.2.3.6, 11.6	m	
5	Basic CID	[1] 6.3.2.3.6, 11.6	m	
6	Primary Management CID	[1] 6.3.2.3.6, 11.6	m	
7	SS MAC Address	[1] 6.3.2.3.6, 11.6	m	
8	Ranging code attributes		m	
9	CID_update	[1]11.6	m	
10	Offset Frequency_Adjust	[1]11.6	m	
11	Global_Service_Name	[1]11.6	o	
12	QoS_Parameters	[1]11.6	o	
13	SFID	[1]11.6	o	
14	Resource_Retain_Flag	[1]11.6	o	
15	HO_Process_Optimization	[1]11.6	m	
16	HO_ID	[1]11.6	m	
17	SBC-RSP_encoding	[1]11.6	m	
18	REG-RSP encoding	[1]11.6	m	
19	Location Update_Reponse	[1]11.6	m	
20	Paging Information	[1] 11.1.9.3	m	
21	Paging_Contrller_ID	[1] 11.1.9.2	m	
22	Next_Periodic_Ranging	[1] 11.1.8.3	MS: m BS: o	
23	Enabled-Action_Triggered	[1] 11.1.8.1	o	
24	CMAC Tuple	[1] 11.1.2.2	m	
25	Preamble Index Override	[1] 6.3.2.3.6	m	
26	Ranging Abort Timer	[1] 6.3.2.3.6	m	
Comments: In case of initial network entry, CMAC-Tuple TLV shall not be included. Items 4, 25, and 26 will be only present in case of RNG-RSP for initial network entry, NW re-entry from idle mode and handover scenarios.				

2.7.1.6 SBC-REQ and SBC-RSP

Table 317 - PDU: SBC-REQ

Item	Capability	Reference	Status	Support
1	Management Message type=26	6.3.2.3.23	m	
Comments:				

Table 318 - SBC-REQ TLV

Item	Capability	Reference	Status	Support
1	Physical Parameters supported (see Table 305)	11.8.1	m	
2	Capabilities for Construction and Transmission of MAC PDUs	11.8.2	m	
3	Security negotiation parameters	11.8.4	m	
4	Extension capability	11.8.6	m	
5	HO trigger metric support	11.8.7	m	
6	CMAC Tuple	11.1.2.2	m	
7	Uplink Service Flow [145]	11.1.4	o	
8	Downlink Service Flow [146]	11.1.4	o	
9	HARQ service flow UL, [145].44	11.13.32	m	
10	HARQ service flow DL, [146].44	11.13.32	o	
11	HARQ channel mapping UL, [145].46	11.13.35	m	
12	HARQ channel mapping DL, [146].46	11.13.35	o	
13	PDU SN Extended Subheader for HARQ Reordering TLV UL, [145].42	11.13.36	m	
14	PDU SN Extended Subheader for HARQ Reordering TLV DL, [146].42	11.13.36	o	

Comments:

- In case of initial network entry, CMAC-Tuple TLV shall not be included.
- Item 11 is mandatory only for BS.

Table 319 - Physical Parameters Supported fields for SBC-REQ

Item	Capability	Reference	Status	Support
1	Subscriber transition gap	11.8.3.1	m	
2	Maximum transmit power	11.8.3.2	m	
3	Current transmit power	11.1.1, 11.8.3.3	m	
4	OFDMA MS FFT sizes	11.8.3.7.1	m	
5	OFDMA SS demodulator	11.8.3.7.2	m	
6	OFDMA SS modulator	11.8.3.7.3	m	
7	The number of UL HARQ channel	11.8.3.7.3	m	
8	OFDMA SS permutation support	11.8.3.7.4	m	
9	OFDMA SS CINR measurement capability	11.8.3.7.9	m	
10	The number of DL HARQ channel	11.8.3.7.2	m	
11	HARQ Chase combining and CC-IR buffer capability	11.8.3.7.19.2	m	
12	OFDMA SS uplink power control support	11.8.3.7.11	m	
13	OFDMA MAP capability	11.8.3.7.12	m	
14	Uplink control channel support	11.8.3.7.13	m	
15	OFDMA MS CSIT capability	11.8.3.7.14	m	
16	Maximum number of burst per frame capability in HARQ	11.8.3.7.15	m	
17	OFDMA SS demodulator for MIMO support	11.8.3.7.5	m	
18	OFDMA SS modulator for MIMO support	11.8.3.7.16	m	
19	OFDMA parameter sets	11.8.3.7.20	m	
Comments: With regards to item 3, MS may ignore power updates between RNG-RSP and this message.				

Table 320 - PDU : SBC-RSP

Item	Capability	Reference	Status	Support
1	Management Message type=27	6.3.2.3.24	m	
Comments:				

Table 321 - SBC-RSP TLV

Item	Capability	Reference	Status	Support
1	Physical Parameters supported (see Table 308)	11.8.1	m	
2	Capabilities for Construction and Transmission of MAC PDUs	11.8.2	m	
3	Security negotiation parameters	11.8.4	m	
4	Extension capability	11.8.6	m	
5	HO trigger metric support	11.8.7	m	
6	CMAC Tuple	11.1.2.2	m	
7	Uplink Service Flow [145]	11.1.4	o	
8	Downlink Service Flow [146]	11.1.4	o	
9	HARQ service flow UL, [145].44	11.13.32	m	
10	HARQ service flow DL, [146].44	11.13.32	o	
11	HARQ channel mapping UL, [145].46	11.13.35	m	
12	HARQ channel mapping DL, [146].46	11.13.35	o	
13	PDU SN Extended Subheader for HARQ Reordering TLV UL, [145].42	11.13.36	m	
14	PDU SN Extended Subheader for HARQ Reordering TLV DL, [146].42	11.13.36	o	
Comments: In case of initial network entry, CMAC-Tuple TLV shall not be included.				

Table 322 - Physical Parameters Supported fields for SBC-RSP

Item	Capability	Reference	Status	Support
1	Subscriber transition gap	11.8.3	m	
2	OFDMA MS FFT sizes	11.8.3.7.1	m	
3	OFDMA SS demodulator	11.8.3.7.2	m	
4	OFDMA SS modulator	11.8.3.7.3	m	
5	The number of UL HARQ channel	11.8.3.7.3	m	
6	OFDMA SS permutation support	11.8.3.7.4	m	
7	OFDMA SS CINR measurement capability	11.8.3.7.9	m	
8	The number of DL HARQ channel	11.8.3.7.2	m	
9	HARQ Chase combining and CC-IR buffer capability	11.8.3.7.19.2	m	
10	OFDMA SS uplink power control support	11.8.3.7.11	m	
11	OFDMA MAP capability	11.8.3.7.12	m	
12	Uplink control channel support	11.8.3.7.13	m	
13	OFDMA MS CSIT capability	11.8.3.7.14	IO-SND	
14	Maximum number of burst per frame capability in HARQ	11.8.3.7.15	m	
15	OFDMA SS demodulator for MIMO support	11.8.3.7.5	IO-MIMO	
16	OFDMA SS modulator for MIMO support	11.8.3.7.16	IO-MIMO	
17	OFDMA parameter sets	11.8.3.7.20	m	
Comments:				

2.7.1.7 ARQ messages

Table 323 - PDU: ARQ feedback message

Item	Capability	Reference	Status	Support
1	Management Message type=33	[1] 6.3.2.3.30	m	
Comments:				

Table 324 - ARQ Feedback Information Elements

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

Table 325 - PDU: ARQ Discard message

Item	Capability	Reference	Status	Support
1	Management Message type=34	[1] 6.3.2.3.31	m	
2	Connection ID	[1] 6.3.2.3.31	m	
3	Fragmentation Sequence Number	[1] 6.3.2.3.31	m	
Comments:				

Table 326 - PDU : ARQ Reset message

Item	Capability	Reference	Status	Support
1	Management Message type=35	[1] 6.3.2.3.32	m	
2	Connection ID	[1] 6.3.2.3.32	m	
3	Type	[1] 6.3.2.3.32	m	
4	Direction	[1]6.3.2.3.32	m	
5	Reserved	[1]6.3.2.3.32	m	
Comments:				

2.7.1.8 RES-CMD

Table 327 - PDU: RES-CMD

Item	Capability	Reference	Status	Support
1	Management Message type=25	[1] 6.3.2.3.22	m	
Comments:				

Table 328 - RES-CMD TLV

Item	Capability	Reference	Status	Support
1	CMAC Tuple	[1] 11.1.2.2	o	
Comments:				

2.7.1.9 CLK-CMP

Table 329 - PDU: CLK-CMP

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

2.7.1.10 DREG-REQ and DREG-CMD

Table 330 - PDU: DREG-REQ

Item	Capability	Reference	Status	Support
1	Management Message type=49	[1] 6.3.2.3.42	m	
2	De-registration request code	[1] 6.3.2.3.42	m	
Comments:				

Table 331 - DREG-REQ TLV

Item	Capability	Reference	Status	Support
1	CMAC Tuple	[1] 11.1.2.2	m	
2	Paging Cycle Request	[1] 6.3.2.3.42	m	
3	Idle Mode Retain Information	[1] 6.3.2.3.42	m	
Comments:				

Table 332 - PDU: DREG-CMD

Item	Capability	Reference	Status	Support
1	Management Message type=29	[1] 6.3.2.3.26	m	
2	action code	[1] 6.3.2.3.26	m	
Comments:				

Table 333 - DREG-CMD TLV

Item	Capability	Reference	Status	Support
1	CMAC Tuple	[1] 11.1.2.2	m	
2	Paging Information	[1] 11.1.9.3	m	
3	Paging Controller ID	[1] 11.1.9.2	m	
4	Idle Mode Retain Information	[1] 6.3.2.3.26	m	
5	REQ-Duration	[1] 6.3.2.3.26	m	
Comments:				

2.7.1.11 DSX-RVD

Table 334 - PDU : DSX-RVD

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

2.7.1.12 REP-REQ and REP-RSP

Table 335 - PDU: REP-REQ

Item	Capability	Reference	Status	Support
1	Management Message type=36	[1] 6.3.2.3.33	m	
Comments:				

Table 336 - REP-REQ TLV for report request

Item	Capability	Reference	Status	Support
1	Report type	[1] 11.11	m	
2	Channel Type request	11.11	m	
3	Zone-specific physical CINR request	11.11	m	
4	Preamble physical CINR request	11.11	m	
5	Zone-specific effective CINR request	11.11	m	
Comments:				

Table 337 - PDU: REP-RSP

Item	Capability	Reference	Status	Support
1	Management Message type=37	[1] 6.3.2.3.33	m	
Comments:				

Table 338 - REP-RSP TLV for report

Item	Capability	Reference	Status	Support
1	CINR report	[1] 11.12	m	
2	RSSI report	[1] 11.12	m	
3	Normal sub-channel Report (CQI value)	11.12	m	
4	Enhanced Band AMC Report	11.12	m	
5	physical CINR measured on PUSC zone with 'use all SC=0'	11.12	m	
6	physical CINR measured on PUSC zone with 'use all SC=1'	11.12	m	
7	physical CINR measured on FUSC zone	11.12	m	
8	physical CINR measured on AMC zone	11.12	m	
9	The estimation of physical CINR measured from preamble for frequency reuse configuration=1	11.12	m	
10	The estimation of physical CINR measured from preamble for frequency reuse configuration=3	11.12	m	
11	effective CINR measured on PUSC zone with 'use all SC=0'	11.12	m	
12	effective CINR measured on PUSC zone with 'use all SC=1' / PUSC AAS zone	11.12	m	
13	Not used			
14	effective CINR measured on AMC AAS zone	11.12, Page 93 of [4].	m	
Comments:				

2.7.1.13 FPC

Table 339 - PDU: FPC

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

2.7.1.14 REG-REQ and REG-RSP

Table 340 - PDU: Registration Request (REG-REQ)

Item	Capability	Reference	Status	Support
1	Management Message type=6	6.3.2.3.7	m	
Comments:				

Table 341 - PDU: REG-REQ TLV

Item	Capability	Reference	Status	Support
1	SS management support	6.3.2.3.7, 11.7.2	o	
2	IP management mode	6.3.2.3.7, 11.7.3	o	
3	Vendor ID Encoding	[1] 11.1.5	o	
4	Vendor specific information	[1] 11.1.6	o	
5	Number of UL transport CIDs supported	[1] 11.7.6.1	m	
6	Number of DL transport CIDs supported	[1] 11.7.6.2	m	
7	CMAC Tuple	11.1.2.2	m	
8	Classification, PHS options, SDU encapsulation support	11.7.7.1	m	
9	Maximum number of classification rules	11.7.7.2	m	
10	PHS support	11.7.7.3	m	
11	ARQ support	11.7.8.1	m	
12	DSx flow control	11.7.8.2	m	
13	Maximum MAC data per frame support	11.7.8.10	m	
14	Packing support	11.7.8.11	m	
15	MAC extended rtPS support	11.7.8.12	m	
16	Maximum number of bursts transmitted concurrently to the MS	11.7.8.13	m	
17	Handover supported	11.7.13.5	m	
18	HO process optimization MS timer	11.7.13.2	m	
19	Handover Indication Readiness Timer	11.7.13.4	m	
20	BS Switching Timer	11.7.13.5	m	
21	Mobility feature supported	11.7.14.1	m	
22	Power saving class capability	11.7.14.2	m	
23	Sleep-mode recovery time	11.7.15	m	
24	Idle mode timeout	11.7.20.1	m	
25	ARQ-ACK type	11.7.23	m	
26	MS HO connections parameters processing time	11.7.13.4	m	
27	MS HO TEK processing time	11.7.24	m	
28	MAC header and subheader support	11.7.25	m	
29	MS periodic ranging timer information	11.7.27	o	
Comments: Item 8 Classification, PHS options, SDU encapsulation support. Length field has the value of 2.				

Table 342 - PDU: Registration Response (REG-RSP)

Item	Capability	Reference	Status	Support
1	Management Message type=7	6.3.2.3.8	m	
2	Response	6.3.2.3.8	m	
Comments:				

Table 343 - PDU: REG-RSP TLV

Item	Capability	Reference	Status	Support
1	SS management support	6.3.2.3.8, 11.7.2	o	
2	IP management mode	6.3.2.3.8, 11.7.3	o	
3	IP version	11.7.4	o	
4	Vendor ID Encoding	11.1.5	o	
5	Vendor-specific information	11.1.6	o	
6	Uplink transport CIDs supported	11.7.6.1	m	
7	Downlink transport CIDs supported	11.7.6.2	m	
8	CMAC Tuple	11.1.2.2	m	
9	Classification, PHS options, SDU encapsulation support	11.7.7.1	m	
10	Maximum number of classification rules	11.7.7.2	m	
11	PHS support	11.7.7.3	m	
12	ARQ support	11.7.8.1	m	
13	DSx flow control	11.7.8.2	m	
14	Maximum MAC data per frame support	11.7.8.10	m	
15	Packing support	11.7.8.11	m	
16	MAC extended rtPS support	11.7.8.12	m	
17	Maximum number of bursts transmitted concurrently to the MS	11.7.8.13	m	
18	Handover supported	11.7.12, 11.7.13.5	m	
19	HO process optimization MS timer	11.7.13.2	m	
20	Mobility feature supported	11.7.14.1	m	
21	Idle mode timeout	11.7.20.1	m	
22	ARQ-ACK type	11.7.23	m	
23	MS HO connections parameters processing time	11.7.24	m	
24	MS HO TEK processing time	11.7.24	m	
25	MAC header and subheader support	11.7.25	m	
26	CID update encodings	11.7.10	m	
27	Compressed CID update encodings	11.7.10.1	m	
28	Not used			
29	System resource retain timer	11.7.13.1	m	
30	Not used			
31	MS handover retransmission timer	11.7.13.3	m	
32	Handover Indication Readiness Timer	11.7.13.4	m	
33	Not used			
34	Power saving class capability	11.7.14.2	m	
35	SAID update encodings	11.7.18	m	

Item	Capability	Reference	Status	Support
36	Total number of provisioned service flow	11.7.19	m	
37	Not used			
38	SA TEK update	11.7.21	m	
39	Not used			
40	Not used			
41	Not used			
42	Not used			
Comments: Item 9 Classification, PHS options, SDU encapsulation support. Length field has the value of 2.				

2.7.1.15 PKM-REQ and PKM-RSP Messages

Table 344 - PDU: PKM Request (PKM-REQ)

Item	Capability	Reference	Status	Support
1	Management Message type=9	[1] 6.3.2.3.9	m	
2	Code	[1] 6.3.2.3.9	m	
3	PKM Identifier	[1] 6.3.2.3.9	m	
Comments:				

Table 345 - PDU : PKM Reply (PKM-RSP)

Item	Capability	Reference	Status	Support
1	Management Message type=10	[1] 6.3.2.3.9	m	
2	Code	[1] 6.3.2.3.9	m	
3	PKM Identifier	[1] 6.3.2.3.9	m	
Comments:				

Table 346 - PKMv2 SA_TEK_Challenge TLV support

Item	Capability	Reference	Status	Support
1	BS_random	11.9.22	m	
2	Key sequence number	11.9.5	m	
3	AKID	11.9.32	m	
4	Key lifetime	11.9.4	m	
5	CMAC Digest	11.9.27	m	
Comments:				

Table 347 - PKMv2 SA_TEK_Request TLV support

Item	Capability	Reference	Status	Support
1	MS_random	11.9.21	m	
2	BS_random	11.9.22	m	
3	Key sequence number	11.9.5	m	
4	AKID	11.9.32	m	
5	Security capabilities	11.9.13	m	
6	Security negotiation parameters	11.8.4	m	
7	CMAC Digest	11.9.27	m	
Comments:				

Table 348 - PKMv2 SA_TEK_Response TLV support

Item	Capability	Reference	Status	Support
1	MS_random	11.9.21	o	
2	BS_random	11.9.22	o	
3	Key sequence number	11.9.5	m	
4	AKID	11.9.32	m	
5	(one or more) SA_TEK_Update	11.7.21	m	
6	Frame Number	11.9.37	m	
7	(one or more) SA descriptor(s)	11.9.17	m	
8	Security negotiation parameters	11.8.4	m	
9	PKMv2 configuration settings	11.9.36	m	
10	CMAC Digest	11.9.27	m	
Comments: In case of initial network entry, SA_TEK_Update TLV shall not be included.				

Table 349 - PKMv2 EAP_Start TLV support

Item	Capability	Reference	Status	Support
1	Key sequence number	11.9.5	m	
2	CMAC Digest	11.9.27	m	
Comments:				

Table 350 - PKMv2 EAP_Transfer TLV support

Item	Capability	Reference	Status	Support
1	EAP payload	11.9.33	m	
2	Key sequence number	11.9.5	m	
3	CMAC Digest	11.9.27	m	
Comments:				

Table 351 - PKMv2 Key-Request TLV

Item	Capability	Reference	Status	Support
1	Key Sequence Number	11.9.5	m	
2	SAID	11.9.7	m	
3	Nonce	11.9.20	o	
4	CMAC Digest	11.9.27	m	
Comments:				

Table 352 - PKMv2 Key-Reply

Item	Capability	Reference	Status	Support
1	Key Sequence Number	11.9.5	m	
2	SAID	11.9.7	m	
3	TEK-Parameters (older)	11.9.8	m	
4	TEK-Parameters (newer)	11.9.8	m	
5	GKEK-Parameters (older)	11.9.28	o	
6	GKEK-Parameters (newer)	11.9.28	o	
7	Nonce	11.9.20	o	
8	CMAC Digest	11.9.27	m	
Comments:				

Table 353 - PKMv2 Key-Reject TLV

Item	Capability	Reference	Status	Support
1	Key Sequence Number	11.9.5	m	
2	SAID	11.9.7	m	
3	Error-code	11.9.10	m	
4	Display-String	11.9.1	o	
5	Nonce	11.9.20	o	
6	CMAC Digest	11.9.27	m	
Comments:				

Table 354 - PKMv2 SA-Addition

Item	Capability	Reference	Status	Support
1	Key Sequence Number	11.9.5	o	
2	SA-Descriptor	11.9.17	o	
3	CMAC Digest	11.9.27	o	
Comments:				

Table 355 - PKMv2 TEK-Invalid

Item	Capability	Reference	Status	Support
1	Key Sequence Number	11.9.5	m	
2	SAID	11.9.7	m	
3	Error-code	11.9.10	m	
4	Display-String	11.9.1	o	
5	CMAC Digest	11.9.27	m	
Comments:				

2.7.1.16 DSA-REQ, DSA-RSP and DSA-ACK messages

Table 356 - PDU: DSA-REQ

Item	Capability	Reference	Status	Support
1	Management Message type=11	[1] 6.3.2.3.10	m	
2	Transaction ID	[1] 6.3.2.3.10	m	
Comments:				

Table 357 - DSA-REQ parameters

Item	Capability	Reference	Status	Support
1	Service flow identifier - SFID transmitted from BS side, received at MS side	[1] 11.13.1	m	
2	CID transmitted from BS side, received at MS side	[1] 11.13.2	m	
3	Service class name	[1] 11.13.3	o	
4	QOS parameter set type	[1] 11.13.4	m	
5	Traffic priority	[1] 11.13.5	m	
6	Maximum sustained traffic rate	[1] 11.13.6	m	
7	Minimum reserved traffic rate	[1] 11.13.8	m	
8	Vendor specific QOS parameters	[1] 11.13.10	o	
9	Uplink Grant scheduling type	[1] 11.13.11	m	
10	Request/transmission policy	[1] 11.13.12	m	
11	Tolerated jitter	[1] 11.13.13	m	
12	Maximum latency	[1] 11.13.14	m	
13	Fixed length versus variable length SDU indicator	[1] 11.13.15	o	
14	SDU size	[1] 11.13.16	o	
15	Target SAID	[1] 11.13.17	m	
16	ARQ enable	[1] 11.13.18.1	m	
17	ARQ_WINDOW_SIZE	[1] 11.13.18.2	m	
18	ARQ RETRY TIMEOUT – Transmitter Delay	[1] 11.13.18.3	m	
19	ARQ RETRY TIMEOUT – Receiver Delay	[1] 11.13.18.3	m	
20	ARQ_BLOCK_LIFETIME	[1] 11.13.18.4	m	
21	ARQ_SYNC_LOSS_TIMEOUT	[1] 11.13.18.5	m	
22	ARQ_DELIVER_IN_ORDER	[1] 11.13.18.6	m	
23	ARQ_RX_PURGE_TIMEOUT	[1] 11.13.18.7	m	
24	ARQ_BLOCK_SIZE	[1] 11.13.18.8	m	
25	RECEIVER_ARQ_ACK_PROCESSING_TIME	11.13.18.9	o	
26	Unsolicited Grant Interval	[1] 11.13.20	m	
27	Unsolicited Polling Interval	[1] 11.13.21	m	
28	FSN size	11.13.22	o	
29	MBS Service	11.13.23	BS Status: IO-MBS MS Status: IOMS-MBS	
30	Global Service Class Name	11.13.24	m	
31	Type of Data Delivery Services	11.13.25	m	
32	Time Base	11.13.27	m	

Item	Capability	Reference	Status	Support
33	MBS zone identifier assignment	11.13.29	BS Status: IO-MBS MS Status: IOMS-MBS	
34	Paging preference	11.13.30	m	
35	SN Feedback Enabled	11.13.31	m	
36	HARQ Service Flows	11.13.32	m	
37	Authorization Token	11.13.34	o	
38	HARQ Channel mapping	11.13.35	m	
39	PDU SN extended subheader for HARQ reordering (TLV)	11.13.36	m	
40	CS specification	[1] 11.13.19.1	m	
41	Packet Classification Rule	[1] 11.13.19.3.4	m	
42	Classification Rule Priority	[1] 11.13.19.3.4.1	m	
43	IP Type of Service/DSCP	[1] 11.13.19.3.4.2	m	
44	Protocol	[1] 11.13.19.3.4.3	m	
45	IP Masked Source Address	[1] 11.13.19.3.4.4	m	
46	IP Masked Destination Address	[1] 11.13.19.3.4.5	m	
47	Protocol Source Port Range	[1] 11.13.19.3.4.6	m	
48	Protocol destination Port Range	[1] 11.13.19.3.4.7	m	
49	Ethernet Destination MAC Address	[1] 11.13.19.3.4.8	IO-ETH1 or IO-ETH2 or IO-ETH3	
50	Ethernet Source MAC Address	[1] 11.13.19.3.4.9	IO-ETH1 or IO-ETH2 or IO-ETH3	
51	Ethertype/IEEE 802.2 SAP	[1] 11.13.19.3.4.10	IO-ETH1 or IO-ETH2 or IO-ETH3	
52	Associated Payload Header Suppression Index	[1] 11.13.19.3.4.13	m	
53	Vendor Specific Classification rule Parameters	[1] 11.13.19.3.4.15	o	
54	Payload Header Suppression Rule	[1] 11.13.19.3.7	m	
55	Payload Header Suppression Index	[1] 11.13.19.3.7.1	m	
56	Payload Header Suppression Field	[1] 11.13.19.3.7.2	m	
57	Payload Header Suppression Mask	[1] 11.13.19.3.7.3	m	
58	Payload Header Suppression Size	[1] 11.13.19.3.7.4	m	
59	Payload Header Suppression Verification	[1] 11.13.19.3.7.5	m	
60	Vendor Specific PHS Parameters	[1] 11.13.19.3.7.6	o	

Item	Capability	Reference	Status	Support
61	Packet classification rule index	[1] 11.13.19.3.4.14	m	
62	CMAC Tuple	[1] 11.1.2.2	m	
63	Classifier Action Rule	11.13.19.3.4.17	m	
64	ROHC Parameter Payload	11.13.38	o	
Comments:				

Table 358 - PDU : DSA-RSP

Item	Capability	Reference	Status	Support
1	Management Message type=12	[1] 6.3.2.3.11	m	
2	Transaction ID	[1] 6.3.2.3.11	m	
3	Confirmation code	[1] 6.3.2.3.11	m	
4	ARQ enable	[1] 11.13.18.1	m	
Comments:				

Table 359 - DSA-RSP TLV for Service flow parameters

Item	Capability	Reference	Status	Support
1	Service flow identifier - SFID transmitted from BS side, received at MS side	[1] 11.13.1	m	
2	CID transmitted from BS side, received at MS side	[1] 11.13.2	m	
3	Target SAID	[1] 11.13.17	m	
4	MBS Service	[1] 11.13.23	BS Status: IO-MBS MS Status: IOMS-MBS	
5	ARQ TLVs for ARQ-enabled connections	[1] 11.13.18	m	
6	MBS zone identifier assignment	11.13.29	BS Status: IO-MBS MS Status: IOMS-MBS	
7	ROHC Parameter Payload	11.13.38	o	
8	CMAC Tuple	[1] 11.1.2.2	m	
Comments:				

Table 360 - PDU: DSA-ACK

Item	Capability	Reference	Status	Support
1	Management Message type=13	[1] 6.3.2.3.12	m	
2	Transaction ID	[1] 6.3.2.3.12	m	
3	Confirmation code	[1] 6.3.2.3.12	m	
Comments:				

Table 361 - DSA-ACK TLV

Item	Capability	Reference	Status	Support
1	CMAC Tuple	[1] 11.1.2.2	m	
Comments:				

2.7.1.17 DSC-REQ, DSC-RSP and DSC-ACK messages

Table 362 - PDU: DSC-REQ

Item	Capability	Reference	Status	Support
1	Management Message type=14	[1] 6.3.2.3.13	m	
2	Transaction ID	[1] 6.3.2.3.13	m	
Comments:				

Table 363 - DSC-REQ parameters

Item	Capability	Reference	Status	Support
1	Classifier DSC action	[1] 11.13.19.3.2	m	
2	CMAC Tuple	[1] 11.1.2.2	m	
3	Service flow identifier – SFID	[1] 11.13.1	m	
4	CID	[1] 11.13.2	m	
5	Service class name	[1] 11.13.3	o	
6	QOS parameter set type	[1] 11.13.4	m	
7	Traffic priority	[1] 11.13.5	m	
8	Maximum sustained traffic rate	[1] 11.13.6	m	
9	Minimum reserved traffic rate	[1] 11.13.8	m	
10	Vendor specific QOS parameters	[1] 11.13.10	o	
11	Tolerated jitter	[1] 11.13.13	m	
12	Maximum latency	[1] 11.13.14	m	
13	Unsolicited Grant Interval	[1] 11.13.20	m	
14	Unsolicited Polling Interval	[1] 11.13.21	m	
15	Global Service Class Name	11.13.24	o	
16	Time Base	11.13.27	m	
17	Paging preference	11.13.30	m	
18	SN Feedback Enabled	11.13.31	m	
19	Authorization Token	11.13.34	o	
20	ROHC Parameter Payload	11.13.38	o	
Comments				

Table 364 - PDU : DSC-RSP

Item	Capability	Reference	Status	Support
1	Management Message type=15	[1] 6.3.2.3.14	m	
2	Transaction ID	[1] 6.3.2.3.14	m	
3	Confirmation code	[1] 6.3.2.3.14	m	
Comments:				

Table 365 - DSC-RSP TLV

Item	Capability	Reference	Status	Support
1	ROHC Parameter Payload	11.13.38	o	
2	CMAC Tuple	[1] 11.1.2.2	m	
Comments:				

Table 366 - PDU: DSC-ACK

Item	Capability	Reference	Status	Support
1	Management Message type=16	[1] 6.3.2.3.15	m	
2	Transaction ID	[1] 6.3.2.3.15	m	
3	Confirmation code	[1] 6.3.2.3.15	m	
Comments:				

Table 367 - DSC-ACK TLV

Item	Capability	Reference	Status	Support
1	CMAC Tuple	[1] 11.1.2.2	m	
Comments:				

2.7.1.18 DSD-REQ and DSD-RSP messages

Table 368 - PDU: DSD-REQ

Item	Capability	Reference	Status	Support
1	Management Message type=17	[1] 6.3.2.3.16	m	
2	Transaction ID	[1] 6.3.2.3.16	m	
3	Service flow ID	[1] 6.3.2.3.16	m	
Comments:				

Table 369 - DSD-REQ TLV

Item	Capability	Reference	Status	Support
1	CMAC Tuple	[1] 11.1.2.2	m	
Comments:				

Table 370 - PDU : DSD-RSP

Item	Capability	Reference	Status	Support
1	Management Message type=18	[1] 6.3.2.3.17	m	
2	Transaction ID	[1] 6.3.2.3.17	m	
3	Confirmation code	[1] 6.3.2.3.17	m	
4	Service flow ID	[1] 6.3.2.3.17	m	
Comments:				

Table 371 - DSD-RSP TLV

Item	Capability	Reference	Status	Support
1	CMAC Tuple	[1] 11.1.2.2	m	
Comments:				

2.7.1.19 TLVs for Handover, Sleep and Idle Mode

Table 372 - MOB_SLP-REQ TLV

Item	Capability	Reference	Status	Support
1	Enabled-Action-Triggered	[1] 6.3.2.3.44, 6.3.21.1, and 11.1.8.1	m	
2	CMAC Tuple	[1] 6.3.2.3.44, 11.1.2.1 and 11.1.2.2	m	
Comments:				

Table 373 - MOB_SLP-RSP TLV

Item	Capability	Reference	Status	Support
1	Enabled-Action-Triggered	[1] 6.3.2.3.45, 6.3.21.1	m	
2	Next Periodic Ranging	[1] 6.3.2.3.45	o	
3	CMAC Tuple	[1] 11.1.2.2	m	
Comments:				

Table 374 - MOB_TRF-IND TLV

Item	Capability	Reference	Status	Support
1	SLPID_Update	[1] 6.3.2.3.46, 6.3.21.1, 6.3.21.5, and 11.1.8.2	m	
Comments:				

Table 375 - PDU : MOB_SLP-REQ

Item	Capability	Reference	Status	Support
1	Management Message type=50	[1] 6.3.2.3.44	m	
2	Number of Classes	[1] 6.3.2.3.44	m	
3	Definition	[1] 6.3.2.3.44	m	
4	Operation	[1] 6.3.2.3.44	m	
5	Power_Saving_Class_ID	[1] 6.3.2.3.44	m	
6	Start_frame_number	[1] 6.3.2.3.44	m	
7	Reserved	[1] 6.3.2.3.44	m	
8	Power_Saving_Class_Type = 1	[1] 6.3.2.3.44	m	
9	Direction	[1] 6.3.2.3.44	m	
10	TRF-IND Required	[1] 6.3.2.3.44	m	
11	Traffic_triggered_wakening_flag	[1] 6.3.2.3.44	m	
12	Reserved	[1] 6.3.2.3.44	m	
13	Initial-sleep window	[1] 6.3.2.3.44	m	
14	Listening-window	[1] 6.3.2.3.44	m	
15	Final-sleep window base	[1] 6.3.2.3.44	m	
16	Final-sleep window exponent	[1] 6.3.2.3.44	m	
17	Number_of_Sleep_CIDs	[1] 6.3.2.3.44	m	
18	CID	[1] 6.3.2.3.44	m	
Comments:				

Table 376 - PDU : MOB_SLP-RSP

Item	Capability	Reference	Status	Support
1	Management Message type=51	[1] 6.3.2.3.45	m	
2	Number of Classes	[1] 6.3.2.3.45	m	
3	Length of Data	[1] 6.3.2.3.45	m	
4	Sleep Approved	[1] 6.3.2.3.45	m	
5	Definition	[1] 6.3.2.3.45	m	
6	Operation	[1] 6.3.2.3.45	m	
7	Power_Saving_Class_ID	[1] 6.3.2.3.45	m	
8	Start_frame_number	[1] 6.3.2.3.45	m	
9	Stop_CQI_Allocation_Flag	[1] 6.3.2.3.45	m	
10	Reserved	[1] 6.3.2.3.45	m	
11	Power_Saving_Class_Type	[1] 6.3.2.3.45	m	
12	Direction	[1] 6.3.2.3.45	m	
13	Initial-sleep window	[1] 6.3.2.3.45	m	
14	Listening-window	[1] 6.3.2.3.45	m	
15	Final-sleep window base	[1] 6.3.2.3.45	m	
16	Final-sleep window exponent	[1] 6.3.2.3.45	m	
17	TRF-IND required	[1] 6.3.2.3.45	m	
18	Traffic_triggered_wakenging_flag	[1] 6.3.2.3.45	m	
19	Reserved	[1] 6.3.2.3.45	m	
20	SLPID	[1] 6.3.2.3.45	m	
21	Reserved	[1] 6.3.2.3.45	m	
22	Number_of_CIDs	[1] 6.3.2.3.45	m	
23	CID	[1] 6.3.2.3.45	m	
24	Padding	[1] 6.3.2.3.45	m	
25	REQ-duration	[1] 6.3.2.3.45	m	
Comments:				

Table 377 - PDU : MOB_TRF-IND

Item	Capability	Reference	Status	Support
1	Management Message type=52	[1] 6.3.2.3.46	m	
2	FMT	[1] 6.3.2.3.46	m	
3	SLPID Group Indication bit-map	[1] 6.3.2.3.46	m	
4	Traffic Indication Bitmap	[1] 6.3.2.3.46	m	
5	Num_Pos	[1] 6.3.2.3.46	m	
6	SLPID	[1] 6.3.2.3.46	m	
7	Padding	[1] 6.3.2.3.46	m	
Comments:				

Table 378 - DL Sleep control extended subheader

Item	Capability	Reference	Status	Support
1	Power_Saving_Class_ID	[1] 6.3.2.7.2	m	
2	Operation	[1] 6.3.2.7.2	m	
3	Final_Sleep_Window_Exponent	[1] 6.3.2.7.2	m	
4	Final_Sleep_Window_Base	[1] 6.3.2.7.2	m	
5	Stop_CQI_Allocation_Flag	[1] 6.3.2.7.2	m	
6	Start frame	[1] 6.3.2.7.2	m	
Comments:				

Table 379 - Bandwidth request and uplink sleep control header

Item	Capability	Reference	Status	Support
1	Type	6.3.2.1.2.1.6	m	
2	BR	6.3.2.1.2.1.6	m	
3	Power_Saving_Class_ID	6.3.2.1.2.1.6	m	
4	Operation	6.3.2.1.2.1.6	m	
5	Reserved	6.3.2.1.2.1.6	m	
6	CID	6.3.2.1.2.1.6	m	
7	HCS	6.3.2.1.2.1.6	m	
Comments:				

2.7.1.20 MOB_NBR-ADV

Table 380 - PDU: MOB_NBR-ADV

Item	Capability	Reference	Status	Support
1	Management Message type=53	[1] 6.3.2.3.47	m	
2	Skip-optional-fields bitmap	[1] 6.3.2.3.47	m	
3	DCD Configuration Change Count	[1] 6.3.2.3.47	m	
4	UCD Configuration Change Count	[1] 6.3.2.3.47	m	
5	Configuration Change Count	[1] 6.3.2.3.47	m	
6	Fragmentation Index	[1] 6.3.2.3.47	m	
7	Total Fragmentation	[1] 6.3.2.3.47	m	
8	N_NEIGHBORS	[1] 6.3.2.3.47	m	
9	PHY Profile ID	[1] 6.3.2.3.47	m	
10	Preamble Index/Subchannel Index	[1] 6.3.2.3.47	m	
Comments:				

Table 381 - MOB_NBR-ADV TLV

Item	Capability	Reference	Status	Support
1	Mobility Feature Supported	[1] 6.3.2.3.47, 11.7.14.1	m	
2	DCD_settings	[1] 6.3.2.3.47, 11.1.7	m	
3	UCD_settings	[1] 6.3.2.3.47, 11.1.7	m	
4	PHY Mode ID	[1] 6.3.2.3.47, 11.18.1	m	
5	Neighbor BS Trigger	[1] 6.3.2.3.47, 11.1.7	m	
Comments: For item 4, PHY mode ID TLV is only included if neighbor BS has different FFT or BW compared to the serving BS. Support does not imply the TLV is always present in the message.				

2.7.1.21 MOB_SCN-REQ

Table 382 - PDU: MOB_SCN-REQ

Item	Capability	Reference	Status	Support
1	Management Message type=54	[1] 6.3.2.3.48	m	
2	Scan duration	[1] 6.3.2.3.48	m	
3	Interleaving interval	[1] 6.3.2.3.48	m	
4	Scan Iteration	[1] 6.3.2.3.48	m	
5	N_Recommended_BS_Index	[1] 6.3.2.3.48	m	
6	Configuration Change Count for MOB_NBR-ADV	[1] 6.3.2.3.48	m	
7	Neighbor_BS_Index	[1] 6.3.2.3.48	m	
8	Scanning type	[1] 6.3.2.3.48	m	
9	Recommended BS ID	[1] 6.3.2.3.48	m	
10	N_Recommended_BS_Full	[1] 6.3.2.3.48	m	
Comments:				

Table 383 - MOB_SCN-REQ TLV

Item	Capability	Reference	Status	Support
1	CMAC Tuple	[1] 11.1.2.2	m	
Comments:				

2.7.1.22 MOB_SCN-RSP

Table 384 - PDU: MOB_SCN-RSP

Item	Capability	Reference	Status	Support
1	Management Message type=55	[1] 6.3.2.3.49	m	
2	Scan duration	[1] 6.3.2.3.49	m	
3	Report mode	[1] 6.3.2.3.49	m	
4	Report period	[1] 6.3.2.3.49	m	
5	Report metric	[1] 6.3.2.3.49	m	
6	Start Frame	[1] 6.3.2.3.49	m	
7	Interleaving interval	[1] 6.3.2.3.49	m	
8	Scan iteration	[1] 6.3.2.3.49	m	
9	Configuration Change Count for MOB_NBR-ADV	[1] 6.3.2.3.49	m	
10	N_Recommended_BS_Index	[1] 6.3.2.3.49	m	
11	Neighbor_BS_Index	[1] 6.3.2.3.49	m	
12	Scanning type	[1] 6.3.2.3.49	m	
13	N_Recommended_BS_Full	[1] 6.3.2.3.49	m	
14	Recommended BS ID	[1] 6.3.2.3.49	m	
15	Rendezvous time	[1] 6.3.2.3.49	o	
16	CDMA code	[1] 6.3.2.3.49	o	
17	Transmission opportunity offset	[1] 6.3.2.3.49	o	
Comments:				

Table 385 - MOB_SCN-RSP TLV

Item	Capability	Reference	Status	Support
1	CMAC Tuple	[1] 11.1.2.2	m	
Comments:				

2.7.1.23 MOB_SCN-REP

Table 386 - PDU: MOB_SCN-REP

Item	Capability	Reference	Status	Support
1	Management Message type=60	[1] 6.3.2.3.50	m	
2	Report mode	[1] 6.3.2.3.50	m	
3	N_current_BSs	[1] 6.3.2.3.50	m	
4	Report metric	[1] 6.3.2.3.50	m	
5	BS CINR mean	[1] 6.3.2.3.50	m	
6	BS RSSI mean	[1] 6.3.2.3.50	m	
7	BS RTD	[1] 6.3.2.3.50	m	
8	N_Neighbor_BS_Index	[1] 6.3.2.3.50	m	
9	N_Neighbor_BS_Full	[1] 6.3.2.3.50	m	
10	Configuration Change Count for MOB_NBR-ADV	[1] 6.3.2.3.50	m	
11	Neighbor_BS_Index	[1] 6.3.2.3.50	m	
12	Neighbor BSID	[1] 6.3.2.3.50	m	
Comments:				

Table 387 - MOB_SCN-REP TLV

Item	Capability	Reference	Status	Support
1	CMAC Tuple	[1] 11.1.2.2	m	
Comments:				

2.7.1.24 MOB_BSHO-REQ

Table 388 - PDU: MOB_BSHO-REQ

Item	Parameter	Reference	Status	Support
1	Management Message type=56	[1] 6.3.2.3.52	m	
2	Mode	[1] 6.3.2.3.52	m	
3	HO operation mode	[1] 6.3.2.3.52	m	
4	N_Recommended	[1] 6.3.2.3.52	m	
5	Resource Retain Flag	[1] 6.3.2.3.52	m	
6	Unsolicited UL grant for HO-IND flag	[1] 6.3.2.3.52	m	
7	Neighbor BSID	[1] 6.3.2.3.52	m	
8	Service Level Prediction	[1] 6.3.2.3.52	m	
9	Preamble Index/Subchannel Index	[1] 6.3.2.3.52	m	
10	HO process optimization	[1] 6.3.2.3.52	m	
11	Network Assisted HO supported per neighbor BS	[1] 6.3.2.3.52	m	
12	HO_ID_included_indicator	[1] 6.3.2.3.52	m	
13	HO_authorization policy indicator	[1] 6.3.2.3.52	m	
14	HO_ID	[1] 6.3.2.3.52	o	
15	HO_authorization_policy_support	[1] 6.3.2.3.52	o	
16	Action Time	[1] 6.3.2.3.52	m	
Comments: In Item 9, only Preamble Index is applicable for OFDMA.				

Table 389 - MOB_BSHO-REQ TLV

Item	Capability	Reference	Status	Support
1	CMAC Tuple	[1] 11.1.2.2	m	
2	Resource Retain Time	[1] 6.3.2.3.52	m	
Comments:				

2.7.1.25 MOB_BSHO-RSP

Table 390 - PDU: MOB_BSHO-RSP

Item	Capability	Reference	Status	Support
1	Management Message type=58	[1] 6.3.2.3.54	m	
2	Mode	[1] 6.3.2.3.54	m	
3	Action Time	[1] 6.3.2.3.54	m	
4	Resource Retain Flag	[1] 6.3.2.3.54	m	
5	Unsolicited UL grant for HO-IND flag	[1] 6.3.2.3.54	m	
Comments:				

Table 391 - MOB_BSHO-RSP TLV

Item	Capability	Reference	Status	Support
1	CMAC Tuple	[1] 11.1.2.2	m	
2	Resource Retain Time	[1] 6.3.2.3.54	m	
Comments:				

2.7.1.26 MOB_MSHO-REQ

Table 392 - PDU: MOB_MSHO-REQ

Item	Capability	Reference	Status	Support
1	Management Message type=57	[1] 6.3.2.3.53	m	
2	Report metric	[1] 6.3.2.3.53	m	
3	N_New_BS_Index	[1] 6.3.2.3.53	m	
4	N_New_BS_Full	[1] 6.3.2.3.53	m	
5	Configuration Change Count for MOB_NBR-ADV	[1] 6.3.2.3.53	m	
6	Neighbor_BS_Index	[1] 6.3.2.3.53	m	
7	Neighbor BSID	[1] 6.3.2.3.53	m	
8	Preamble index/ Subchannel Index	[1] 6.3.2.3.53	m	
Comments:				

Table 393 - MOB_MSHO-REQ TLV

Item	Capability	Reference	Status	Support
1	CMAC Tuple	[1] 11.1.2.2	m	
Comments:				

2.7.1.27 MOB_HO-IND

Table 394 - PDU: MOB_HO-IND

Item	Parameter	Reference	Status	Support
1	Management Message type=59	[1] 6.3.2.3.55	m	
2	Mode	[1] 6.3.2.3.55	m	
3	HO_IND_TYPE	[1] 6.3.2.3.55	m	
4	Ranging Params valid indication	[1] 6.3.2.3.55	m	
5	Target_BS_ID	[1] 6.3.2.3.55	m	
6	Preamble Index/ Subchannel Index	[1] 6.3.2.3.55	m	
Comments:				

Table 395 - MOB_HO-IND TLV

Item	Capability	Reference	Status	Support
1	CMAC Tuple	[1] 11.1.2.2	m	
Notes:				
Comments:				

2.7.1.28 PDUs fields for Idle Mode

Table 396 - PDU: MOB_PAG-ADV

Item	Capability	Reference	Status	Support
1	MS MAC Address Hash	6.3.24.1	m	
2	Paging Group ID	6.3.24.8.1.1	m	
3	Action Code	6.3.2.3.56	m	
Comments:				

Table 397 - PHY Synchronization Field

Item	Capability	Reference	Status	Support
1	Frame size and frame number	6.3.24.3	m	
Comments:				

2.7.1.29 NSP Selection

Table 398 - PDU: Service Identity Information (SII-ADV) message

Item	Capability	Reference	Status	Support
1	Management Message Type=68	802.16Rev2/D2:: 6.3.2.3.63	m	
Comments:				

Table 399 - TLVs for NSP Selection

Item	Capability	Reference	Status	Support
1	NSP List TLV	802.16Rev2/D2:: 11.1.11.1, 6.3.2.3.63	m	
2	Service Information Query (SIQ) TLV	802.16Rev2/D2:: 11.8.9	m	
3	NSP Change Count TLV	802.16Rev2/D2:: 11.4.1, 6.3.2.3.63	m	
4	Verbose NSP Name List TLV	802.16Rev2/D2:: 11.1.11.2	m	
5	Visited NSP ID TLV	802.16Rev2/D2:: 11.8.11	m	
6	Visited NSP Realm TLV	802.16Rev2/D2:: 11.8.13	m	
7	SII-ADV Message Pointer TLV	802.16Rev2/D2:: 11.8.14	m	

Comments:

For Item 1, scope of the TLV is SBC-RSP or SII-ADV.

For Item 2, scope of the TLV is SBC-REQ.

For Item 3, scope of the TLV is DCD.

For Item 4, scope of the TLV is SBC-RSP or SII-ADV.

For Item 5, scope of the TLV is SBC-REQ.

For Item 6, scope of the TLV is SBC-RSP.

For Item 7, scope of the TLV is SBC-RSP.

This change is conditioned on the approval of the BOD to this exception to the certification reference.