

Project	<b>IEEE 802.16 Broadband Wireless Access Working Group</b> < <a href="http://ieee802.org/16">http://ieee802.org/16</a> >	
Title	<b>The Location of MBS-MAP</b>	
Date Submitted	<b>2004-11-04</b>	
Source(s)	Duke Dang  HUAWEI HuaWei Bld., No.3 Xinxu Rd., Shang-Di Infomation Industry Base, Hai-Dian District Beijing P.R. China, 100085	Voice: 86-10-82882755 Fax: 86-10-82882940 <a href="mailto:dsjun@huawei.com">mailto:dsjun@huawei.com</a>
Re:	Contribution on comments to IEEE P802.16e/D5	
Abstract	In the current IEEE P802.16e/D5, the MBS is introduced, and the message MBS-MAP is introduced to support MBS. And the information element MBS-MAP-IE() is used to indicate the location of the burst including message MBS-MAP. However, in information element MBS-MAP-IE(), only "OFDMA Symbol offset" can't indicate the burst including message MBS-MAP. We propose to enhance the information element in order to indicate the location of the burst including message MBS-MAP.	
Purpose	Adoption	
Notice	This document has been prepared to assist IEEE 802.16. It is offered as a basis for discussion and is not binding on the contributing individual(s) or organization(s). The material in this document is subject to change in form and content after further study. The contributor(s) reserve(s) the right to add, amend or withdraw material contained herein.	
Release	The contributor grants a free, irrevocable license to the IEEE to incorporate material contained in this contribution, and any modifications thereof, in the creation of an IEEE Standards publication; to copyright in the IEEE's name any IEEE Standards publication even though it may include portions of this contribution; and at the IEEE's sole discretion to permit others to reproduce in whole or in part the resulting IEEE Standards publication. The contributor also acknowledges and accepts that this contribution may be made public by IEEE 802.16.	
Patent Policy and Procedures	The contributor is familiar with the IEEE 802.16 Patent Policy and Procedures < <a href="http://ieee802.org/16/ipr/patents/policy.html">http://ieee802.org/16/ipr/patents/policy.html</a> >, including the statement "IEEE standards may include the known use of patent(s), including patent applications, provided the IEEE receives assurance from the patent holder or applicant with respect to patents essential for compliance with both mandatory and optional portions of the standard." Early disclosure to the Working Group of patent information that might be relevant to the standard is essential to reduce the possibility for delays in the development process and increase the likelihood that the draft publication will be approved for publication. Please notify the Chair < <a href="mailto:chair@wirelessman.org">mailto:chair@wirelessman.org</a> > as early as possible, in written or electronic form, if patented technology (or technology under patent application) might be incorporated into a draft standard being developed within the IEEE 802.16 Working Group. The Chair will disclose this notification via the IEEE 802.16 web site < <a href="http://ieee802.org/16/ipr/patents/notices">http://ieee802.org/16/ipr/patents/notices</a> >.	

## The Location of MBS-MAP

*Duke Dang*  
*HUAWEI*

### 1. Introduction

In the current IEEE P802.16e/D5, the MBS is introduced as one of the major features. On one hand, it supports performance enhancement with Macro Diversity. On the other hand, it supports power-efficient reception in idle and sleep modes. For the realization of the above enhancements, the message MBS-MAP is introduced, and the information element MBS-MAP-IE() is introduced to locate the MBS ZONE in the DL-frame and the burst including the message MBS-MAP.

For the MSS that tune the MBS service, after acquiring the MBS related parameters, such as “MBS zone identifier”, “Multicast CID” and security key, it will receive the MBS data stream according to the following steps:

1. The MSS analyzes the information element MBS-MAP-IE() in the message DL-MAP.
2. If “Multicast CID” and “MBS zone identifier” in the information element MBS-MAP-IE() are consistent with those it owns, the MSS will use the other information in MBS-MAP-IE() to locate the MBS ZONE and the burst including the message MBS-MAP.
3. The MSS analyzes the message MBS-MAP.
4. By the information in the message MBS-MAP, the MSS can locate the burst including the data corresponding to the given “Multicast CID”, and receive the contents in it.
5. By the information in the message MBS-MAP, the MSS will know the No. of the next DL-frame including the MBS content data corresponding to the given “Multicast CID”, and the offset of the MBS ZONE in the DL-frame. Then repeat step 3.

In the current information element MBS-MAP-IE() at IEEE P802.16e/D5, only “OFDMA Symbol offset” indicates “The offset of the OFDMA symbol in which the MBS zone starts, measured in OFDMA symbols from the beginning of the downlink frame in which the DL-MAP is transmitted”. The MSS can't locate the burst including the message MBS-MAP from the MBS-MAP-IE(). For the reception of the message MBS-MAP, we propose to enhance the information element MBS-MAP-IE() and use it to indicate the location of the burst including message MBS-MAP. In addition to “OFDMA Symbol offset”, we propose to add “Subchannel offset”, “No. OFDMA Symbols”, “No. Subchannels” etc. in the information element MBS-MAP-IE() to indicate the location of the burst including the message MBS-MAP.

## 2. Proposed Text Changes

[Modify the corresponding sections as follows:]

[Change Table 283b in section 8.4.5.3.11 as the following]

Syntax	Size	Notes
MBS_MAP_IE {		
Extended DIUC	4 bits	MBS_MAP = 0x05
Length	4 bits	Length = 0x03
Multicast CID	12 bits	12 LSB of CID for multicast
<b>MBS zone identifier</b>	7 bits	MBS Zone identifier corresponds to the identifier provided by the BS at connection initiation
<b>OFDMA Symbol offset</b>	8 bits	The offset of the OFDMA symbol in which the MBS zone starts, measured in OFDMA symbols from the beginning of the downlink frame in which the DL-MAP is transmitted.
<u>Subchannel offset</u>	<u>6 bits</u>	
<u>Boosting</u>	<u>3 bits</u>	<u>000: normal (not boosted); 001: +6dB; 010: -6dB; 011: +9dB; 100: +3dB; 101: -3dB; 110: -9dB; 111: -12dB;</u>
<u>No. OFDMA Symbols</u>	<u>7 bits</u>	
<u>No. Subchannels</u>	<u>6 bits</u>	
<u>DIUC</u>	<u>4 bits</u>	
<b>Repetition Coding Indication</b>	2 bits	0b00 - No repetition coding 0b01 - Repetition coding of 2 used 0b10 - Repetition coding of 4 used 0b11 - Repetition coding of 6 used
<b>Macro diversity enhanced</b>	1 bits	0 = Non Macro-Diversity enhanced zone 1 = Macro-Diversity enhanced zone
If (Macro diversity enhanced == 1){		
<b>Permutation</b>	2 bits	0b00 = PUSC permutation 0b01 = FUSC permutation 0b10 = Optional FUSC permutation 0b11 = Adjcent subcarrier permutation
<b>IDcell</b>	6 bits	
}		
else {		
<b>Reserved</b>	8 bits	
}		
}		