Project	**IEEE 802.16 Broadband Wireless Access Working Group <**http://ieee802.org/16**>**
Title	**MR_Code-REP header**
Date Submitted	**2007-07-17**
Source(s)	Kanchei (Ken) Loa, Yi-Hsueh Tsai, Yung-Ting Lee, Hua-Chiang Yin, Shiann-Tsong Sheu, Youn-Tai Lee, Institute for Information Industry 8F, No. 218, Sec. 2, Dunhua S. Rd., Taipei City 106, Taiwan Voice: +886-2-27399616 Fax: +886-2-23782328 loa@nmi.iii.org.tw
Re:	IEEE 802.16j-07/019: "Call for Technical Comments Regarding IEEE Project 802.16j"
Abstract	This contribution proposes a MR_Code-REP header
Purpose	Text proposal for 802.16j Baseline Document.
Notice	*This document does not represent the agreed views of the IEEE 802.16 Working Group or any of its subgroups*. It represents only the views of the participants listed in the "Source(s)" field above. It is offered as a basis for discussion. It is not binding on the contributor(s), who 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	The contributor is familiar with the IEEE-SA Patent Policy and Procedures: <http://standards.ieee.org/guides/bylaws/sect6-7.html#6> and <http://standards.ieee.org/guides/opman/sect6.html#6.3>. Further information is located at <http://standards.ieee.org/board/pat/pat-material.html> and <http://standards.ieee.org/board/pat>.

MR_Code-REP header

Kanchei (Ken) Loa, Yi-Hsueh Tsai, Yung-Ting Lee,
Hua-Chiang Yin, Shiann-Tsong Sheu, Youn-Tai Lee
Institute for Information Industry (III)

Introduction

MS CDMA BR ranging is expected to be used frequently in MR system. However, it takes 15~25 bytes in the relay path to send one MR Code-REP message. In order to conserve the bandwidth in the relay path, we propose an alternative option, 6-byte MR_Code-REP header used by RS to request the MR-BS to generate dummy CDMA Allocation IEs and allocated corresponding UL bandwidth.

In order to facilitate the incorporation of this proposal into IEEE 802.16j standard, specific changes to the baseline working document IEEE 802.16j-06/026r4 are listed below.

Text Proposal

6.3.2.1.2.2.2 Extended MAC Signaling Header Type II

[Change the following table in line 24 of page 9 as indicated]

Table 19a Extended Type field encodings for Extended MAC signaling header type II

Extended Type field	MAC header Type	Reference figure	Reference table
5	MR_Code-REP header	Figure xxx	Table xxx
64-7	Reserved		

[Insert the following subclause 6.3.2.1.2.2.2.5 in page 14:]

6.3.2.1.2.2.2.5 MR_Code-REP header

MR_Code-REP header, illustrated in Table xxx, is used by a non-transparent RS in a system with centralized bandwidth allocation to request the MR-BS to generate incomplete CDMA Allocation IEs in the UL-MAP that it assigns to the RS to broadcast on the access link. An incomplete CDMA_Allocation_IE contains zeros in the fields for Frame Number Index, Ranging Code, Ranging Symbol, and Ranging Subchannel.

Table xxx Description of fields in MR_Code-REP header

Name	Length	Description
HT	1 bit	= 1
EC	1 bit	= 1
Type	1 bit	= 1
Extended Type	3 bits	= 5
Number of Received BR CDMA Codes	6 bits	Number of CDMA bandwidth request ranging code
Reserved	12 bits	
Basic CID	16 bits	RS basic CID
HCS	8 bits	Header Check Sequence (same usage as HCS entry in Table 5).

6.3.6.7.2.1 ~~Contention-based CDMA~~ Bandwidth ~~R~~request~~s for Relay~~ handling and transmission in centralized mode

[Change the second paragraph of this subclause in contribution 439r2 as follows:]

When a transparent RS receives a bandwidth request CDMA ranging code from a subordinate SS, it shall forward an MR_Code-REP message to the MR-BS. The MR_Code-REP contains the CDMA ranging code that was sent by the SS as well as its transmit region and channel adjustment information. Using this code and its transmit region information, the MR-BS shall generate the appropriate CDMA_Allocation_IE that prompts the SS to forward its bandwidth request header on the access uplink. The MR-BS shall also create bandwidth allocations along the relay path for the purpose of forwarding this SS bandwidth request header to the MR-BS (see Figure 60f).

When a non-transparent RS receives one or more bandwidth request CDMA ranging codes in a frame from its subordinate SSs, it shall forward an MR_Code-REP header using its RS basic CID to the MR-BS. The MR_Code-REP header shall indicate the number of bandwidth request CDMA ranging codes the RS received.

Upon receiving an MR_Code-REP header from a non-transparent RS, the MR-BS shall insert incomplete CDMA Allocation IEs into the UL-MAP that it assigns to that RS to broadcast on the access link. These CDMA_Allocation_IEs will have zeros in the fields for Frame Number Index, Ranging Code, Ranging Symbol, and Ranging Subchannel.

When a non-transparent RS receives a message from the MR-BS with an assigned UL-MAP containing incomplete CDMA_Allocation_IEs, the RS shall fill in the corresponding ranging code and transmit region information into the appropriate fields of the incomplete CDMA Allocation IEs and then broadcast this updated UL-MAP on the access link.