y

Project	**IEEE 802.16 Broadband Wireless Access Working Group <**http://ieee802.org/16**>**	
Title	**CDMA_Allocation_IE-REQ header**	
Date Submitted	**2007-07-05**	
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 CDMA_Allocation_IE-REQ 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>.	

CDMA_Allocation_IE-REQ 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 17~27 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 CDMA_Allocation_IE-REQ header, for MR system with small number of hot counts and limited number of RS (less than 128).

The CDMA_Allocation_IE-REQ header (see Table 1) provides ranging code attributes for MR-BS to generate CDMA Allocation IE (see Table 2).

Table 1 Description of fields in CDMA_Allocation_IE-REQ header

Name	Length	Description
HT	1 bit	= 1
EC	1 bit	= 1
Type	1 bit	= 1
Extended Type	3 bits	= 3
Frame Number Index	**4 bits**	**LSBs of relevant frame number**
Ranging Code	**8 bits**	**Indicates the CDMA Code sent by the MS.**
Ranging Symbol	**8 bits**	**Indicates the OFDMA symbol used by the MS.**
Ranging subchannel	**7 bits**	**Identifies the Ranging subchannel used by the MS.**
RCID 7	7 bits	7-bit LSB of RS basic CID (9-bit MSB of CID are all zeros; see subclause 8.4.5.3.20.1)
HCS	8 bits	Header Check Sequence (same usage as HCS entry in Table 5).

Table 2 CDMA_Allocation_IE()

Syntax	Size	Note
CDMA_Allocation_IE () {		
Duration	6 bits	
UIUC	4 bits	UIUC for transmission
Repetition Coding Indication	2 bits	0b00: No repetition coding 0b01: Repetition coding of 2 used 0b10: Repetition coding of 4 used 0b11: Repetition coding of 6 used
Frame Number Index	**4 bits**	**LSBs of relevant frame number**
Ranging Code	**8 bits**	
Ranging Symbol	**8 bits**	
Ranging subchannel	**7 bits**	
BW request mandatory	1 bits	1: Yes; 0: No
}		

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	CDMA_Allocation_IE-REQ header	Figure xxx	Table xxx
6~~4~~-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 CDMA_Allocation_IE-REQ header

CDMA_Allocation_IE-REQ header, illustrated in Table xxx, is used by RS to request the MR-BS to generate a CDMA Allocation IE for the associated ranging code attributes.

Table xxx Description of fields in CDMA_Allocation_IE-REQ header

Name	Length	Description
HT	1 bit	= 1
EC	1 bit	= 1
Type	1 bit	= 1
Extended Type	3 bits	= 5
Frame Number Index	4 bits	LSBs of relevant frame number
Ranging Code	8 bits	Indicates the CDMA Code sent by the MS.
Ranging Symbol	8 bits	Indicates the OFDMA symbol used by the MS.
Ranging subchannel	7 bits	Identifies the Ranging subchannel used by the MS.
RCID 7	7 bits	7-bit LSB of RS basic CID. (9-bit MSB of CID are all zeros; see subclause 8.4.5.3.20.1)
HCS	8 bits	Header Check Sequence (same usage as HCS entry in Table 5).

6.3.6.7.2.1 Contention-based CDMA Bandwidth Requests for Relay

[Change the following text in page 73 as indicated]

Upon receiving this code, the MR-BS shall respond by allocating uplink bandwidth to the RS along the relay path so that the RS can send the MR-Code-REP message or CDMA_Allocation_IE-REQ header to the MR-BS.