

Project	<b>IEEE 802.16 Broadband Wireless Access Working Group</b> < <a href="http://ieee802.org/16">http://ieee802.org/16</a> >	
Title	<b>Describe RS uplink region in UCD</b>	
Date Submitted	<b>2007-07-05</b>	
Source(s)	Kanchei (Ken) Loa, Yi-Hsueh Tsai, Yung-Ting Lee, Hua-Chiang Yin, Shiann-Tsong Sheu, Youn-Tai Lee	Voice: +886-2-27399616 Fax: +886-2-23782328 loa@nmi.iii.org.tw
	Institute for Information Industry 8F, No. 218, Sec. 2, Dunhua S. Rd., Taipei City 106, Taiwan	
Re:	IEEE 802.16j-07/019: "Call for Technical Comments Regarding IEEE Project 802.16j"	
Abstract	This contribution proposes to describe RS uplink regions in UCD, which periodically appear in frames.	
Purpose	Text proposal for 802.16j Baseline Document.	
Notice	<i>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.</i>	
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: < <a href="http://standards.ieee.org/guides/bylaws/sect6-7.html#6">http://standards.ieee.org/guides/bylaws/sect6-7.html#6</a> > and < <a href="http://standards.ieee.org/guides/opman/sect6.html#6.3">http://standards.ieee.org/guides/opman/sect6.html#6.3</a> >. Further information is located at < <a href="http://standards.ieee.org/board/pat/pat-material.html">http://standards.ieee.org/board/pat/pat-material.html</a> > and < <a href="http://standards.ieee.org/board/pat">http://standards.ieee.org/board/pat</a> >.	

## Describe RS uplink region in UCD

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

### 1. Introduction

In 11.3.1 of P80216\_Cor2\_D4, it has been proposed to describe the UL region of ranging, HARQ, fast feedback, and sounding in the UCD message instead of UL-MAP. This contribution proposes the same approach for RS in order to reduce the overheads of R-MAP messages.

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.

### 2. Spec Changes

This section contains the suggested text for the 802.16 specification changes.

*[Insert the following text at end of Table 601 in line24 of page 172]*

Name	Type (1 byte)	Length	Value
<u>RS Ranging Region</u>	<u>TBA</u>	<u>5/10/ 15/20</u>	<u>The value of TLV consists of up to 4 concatenated sections (one section per Ranging method), each having the following structure: Bit #0~31, Contains the following fields to describe ranging region: OFDMA symbol offset (8 bits), Subchannel offset (7 bits), No. OFDMA symbols (7 bits), No. subchannels (7 bits), Ranging method (2 bits), Dedicated ranging indicator = '0' Bit #31~34, Parameter d that defines periodicity of 2<sup>d</sup> frames Bit #35~39, Allocation phase expressed in frames</u>
<u>RS HARQ Ack Region</u>	<u>TBA</u>	<u>4</u>	<u>Bit #0~23, Contains the following fields as in the HARQ ACKCH region allocation IE OFDMA Symbol offset (8 bits), Subchannel offset (7 bits), No. OFDMA symbols (5 bits), No. subchannels (4 bits) Bit #32~34, Parameter d that defines periodicity of 2<sup>d</sup> frames Bit #35~39, Allocation phase expressed in frames</u>
<u>RS Fast Feedback Region</u>	<u>TBA</u>	<u>5</u>	<u>Bit #0~31, Contains the following fields as in the FAST FEEDBACK Allocation IE: OFDMA symbol offset (8 bits), Subchannel offset (7 bits), No. OFDMA symbols (7 bits), No subchannels (7 bits), Reserved (3 bits) Bit #32~34, Parameter d that defines periodicity of 2<sup>d</sup> frames Bit #35~39, Allocation phase expressed in frames</u>

<u>RS Sounding Region</u>	<u>TBA</u>	<u>5/10</u>	<u>For 5 bytes per each sounding region</u> <u>Bit #0~31, Contains the following fields as in the PAPR reduction/Safety zone/Sounding zone allocation IE:</u> <u>OFDMA symbol offset (8 bits), Subchannel offset (7 bits), No. OFDMA symbols (7 bits), No. subchannels (7 bits), PAPR Reduction/Safety Zone (1 bit), Sounding Zone bit = '1', Reserved (1 bit)</u> <u>Bit #32~34, Parameter d that defines periodicity of 2^d frames</u> <u>Bit #35~39, Allocation phase expressed in frames</u>
---------------------------	------------	-------------	--