Project	**IEEE 802.16 Broadband Wireless Access Working Group <http://ieee802.org/16>**	
Title	**Clarification TLV for repetition**	
Date Submitted	**2005-07-14**	
Source(s)	Kyungjoo Suh	joo.suh@samsung.com
	Jaehee Cho	Voice: +82-31-279-5123
	Hyongoo Kang	
	Joongkeun Cho	jaehee1.cho@samsung.com
	Samsung Electronics CO., LTD.	Voice: +82-31-279-5596
Re:	Call for comments, Sponsor Ballot on 802.16e/D9	
Abstract	Draft includes Repetition Coding Indication field which indicates Repetition Coding Indication to perform proper modulation in the cell edge, as a result to get signaling gain. We propose to extend the RNG-REQ and RNG-RSP message encodings.	
Purpose	Change RNG-REQ and RNG-RSP message encodings for repetition	
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 <http://ieee802.org/16/ipr/patents/policy.html>, 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 <mailto:chair@wirelessman.org> 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 <http://ieee802.org/16/ipr/patents/notices>.	

Clarification of TLV for Repetition

Kyungjoo Suh, Jaehee Cho, Hyongoo Kang, Joongkeun Cho

– Samsung Electronics

1. Motivation

This draft deal with the repetition issues. In IEEE 802.16 BRG meeting, the comment 5626 and contribution C802.16e-05/298 was accepted, and the resolution of group mentions "Adopt Contribution C802.16e-05/234r5". However, the comment 234r5 didn't deal with the repetition issues. Therefore, we want to submit this comment .

Even though the current specification supports a number of MCS modulation level, the RNG-REQ and RNG-RSP message contain only DIUC. Therefore, when MS perform handover or initial ranging at the cell edge , there is no way for MS to communicate BS using a certain MCS level. In this Draft, we offer a solution to overcome this problem including the Repetition Coding Indication.

2. Changes summary

[Insert the new text in the table 364 of section 11.5 as shown below:]

11.5 RNG-REQ management message encodings

Table 364-RNG-REQ message encodings

Name	**Type (1 byte)**	**Length**	**Value (variable-length)**	**PHY Scope**
Requested Downlink Burst Profile	1	variable	The size of this field is dependent on following repetition coding level indication. If repetition coding is requested, the size of this field is 2. Bits 0-3 : DIUS of the downlink burst profile requested by the SS for downlink traffic. Bits 4-7 : 4 LSB of Configuration change count value of DCD defining the burst profile associated with DIUC. The following bits indicate repetition coding level indication requested by the MS for downlink traffic. If these bits are not present in the RNG-REQ, it shall be assumed that repetition coding is not requested. Bit 8 – 9 : Repetition coding level indication: 0b00 - no repetition 0b01 - Repetition coding of 2 0b10 - Repetition coding of 4 0b11 - Repetition coding of 6 The BS shall ignore these bits if the DIUC requested in the 'requested downlink burst profile' TLV refers to modulations higher than QPSK. Bit 10- 15 : reserved	All

[Insert the new text in the table 367 of section 11.6 as shown below:]

11.6 RNG-RSP management message encodings

Table 367-RNG-RSP message encodings

Name	**Type (1 byte)**	**Length**	**Value (variable-length)**	**PHY Scope**
Downlink Operational Burst Profile	7	2	This parameter is sent in response to the RNG-REQ Requested Downlink Burst Profile parameter. Byte 0: ~~Specifies the least robust DIUS that may be used by the BS for transmissions to the SS.~~ bits 0-3: Specifies the least robust DIUC that may be used by the BS for transmissions to the MS. bits 4-7: Specifies Repetition Coding Indication 0b0000 - No repetition coding 0b0001 - Repetition coding of 2 0b0010 - Repetition coding of 4 0b0011 - Repetition coding of 6 The repetition coding indication shall be 0b0000 if the DIUC refers to modulations higher than QPSK. Byte 1: Configuration Change Count value of DCD defining the burst profile associated with DIUC.	All