Project	**IEEE 802.16 Broadband Wireless Access Working Group <http://ieee802.org/16>**
Title	Error Fixes on CQICH_Alloc_IE
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Re:	IEEE P802.16-2004/Cor1/D2
Abstract	This contribution provides bug fix on CQICH_Alloc_IE
Purpose	Review and Adopt the suggested changes into IEEE P802.16-2004/Cor1/D2
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1 Introduction

There are some errors and text clarification needed in the CQICH_Alloc_IE to ensure proper operation of the BS and MS.

2 Proposed Text Change

[*Make the following changes to Table 300, page 111, line 5 – 60. Changes are highlighted in 'red'*]

Table 300—CQICH alloc IE format

Syntax	Size	Notes
CQICH_Alloc_IE() ~~{~~ {		
Extended ~~D~~UIUC	4 bits	CQICH = 0x03
Length	4 bits	Length of the message in bytes (variable).
CQICH_ID	variable	Index to uniquely identify the CQICH resource assigned to the SS. The size of this field is dependent on system parameter defined in DCD.
Duration (d)	3 bits	A CQI feedback is transmitted on the CQI channels indexed by the CQICH_ID for 10 x 2^d frames. If d == 0b000, the CQICH is deallocated. If d == 0b111, the SS shall report until the BS command for the SS to stop.
If (Duration != 0b000) {		
Allocation offset	6 bits	Index to the fast feedback channel region marked by UIUC = 0.
Period (p)	2 bits	A CQI feedback is transmitted on the CQICH every ~~2p~~2^p frames.
Frame offset	3 bits	The SS starts reporting at the frame of which the number has the same 3 LSB as the specified frame offset. If the current frame is specified, the SS ~~should~~ shall start reporting in eight frames
~~**Duration (d)**~~	~~3 bits~~	~~A CQI feedback is transmitted on the CQI channels indexed by the CQICH_ID for 10 x 2^d frames. If d == 0, the CQI-CH is deallocated. If d == 0b111, the SS should report until the BS command for the SS to stop.~~

MIMO_permutation_feedback_cycle	2 bits	0b00 = No MIMO and permutation mode feed-back 0b01 = The MIMO and permutation mode indication shall be transmitted on the CQICH indexed by the CQICH_ID every four ~~frames~~ CQICH transmission opportunities. The first indication is sent on the ~~eighth~~fourth CQICH ~~frame~~ transmission opportuniy. 0b10 = The MIMO mode and permutation mode indication shall be transmitted on the CQICH indexed by the CQICH_ID every eight ~~frames~~ CQICH transmission opportunities. The first indication is sent on the eighth CQICH ~~frame~~ transmission opportunity. 0b11 = The MIMO mode and permutation mode indication shall be transmitted on the CQICH indexed by the CQICH_ID every 16 ~~frames~~ CQICH transmission opportunities. The first indication is sent on the 16th CQICH ~~frame~~ transmission opportunity.
}		
Padding	*variable*	~~The padding bits is used to ensure the IE size is integer number of bytes.~~Number of bits required to align to byte length, shall be set to zero.
}		

[*Make the following changes to the text on page 112, line 1 – 7. Changes are highlighted in 'red'*]

MIMO_permutation_feedback_Cycle
This field specifies the MIMO and permutation mode fast feedback cycle. See ~~8.4.5.4.10.2~~8.4.5.4.10.3 for fast feedback channel payload encoding for MIMO and permutation feedback. When MIMO_permutation_feedback_cycle is not equal to 0b00, the MIMO and permutation mode indication shall be transmitted at certain CQICH frames instead of the normal CQI value.

[*Make the following changes to the text on page 112, line 11 – 16. Changes are highlighted in 'red'*]

For MIMO capable SSs, BS may allocate one or multiple CQICH channels to the SS in UL_MAP. If one CQICH channel is allocated, SS shall report the average post processing S/R. If multiple CQICH channels are allocated, SS shall report post processing SNR of individual layers., ~~t~~The order of CQICH channel allocation shall match the order of layer index.