
Project **IEEE 802.16 Broadband Wireless Access Working Group** <<http://ieee802.org/16>>

Title Correction on Dedicated MIMO DL Control IE Format

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Submitted

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Re: IEEE 802.16-2005/D9

Abstract The document contains the clarification for stream, layer and burst.

Purpose Adoption of proposed changes into P802.16-2005/D9

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Correction on Dedicated MIMO DL Control IE Format

(Reply Comment #6214)

1. Problem statement

Comment #5441 in last meeting BRG was accepted. But it is not correctly reflected on IEEE802.16e/D9. [Delete line 8 - line 49 in page 306 within Table 286t] in #5441 in last meeting BRG, but editor deleted line 8 (page 306) ~ line 35 (page 307) in 16e/D9.

2. Proposed Remedy

[Modify the following Table 286t of D9 as following]

Table 286t-Dedicated MIMO DL Control IE format

| Syntax | Size (bits) | Notes |
|----------------------------------|-------------|---|
| Dedicated MIMO DL Control IE() { | | |
| Length | 5 bits | Length of following control information in Nibble. |
| Control header | 3 bits | Bit #0 : MIMO Control Info Bit #1 : CQI Control Info Bit #2 : Closed MIMO Control Info |
| N_layer | 2 bits | Number of coding/modulation layers 00 = 1 layer 01 = 2 layers 10 = 3 layers 11 = 4 layers |
| if(MIMO Control Info == 1){ | | |
| Matrix | 2 bits | Indicates transmission matrix (See 8.4.8) 0b00 = Matrix A 0b01 = Matrix B 0b10 = Matrix C 0b11 = Codebook |
| if (Dedicated Pilots == 1) { | | Dedicated Pilots field in STC_Zone_IE() |

| | | |
|-------------------------------|--------|--|
| Num_Beamformed_Streams | 2 bits | Indicates the number of beamformed streams which is equal to the number of pilot patterns 00 = 1 stream 01 = 2 streams 10 = 3 streams 11 = 4 streams |
| } | | |
| } | | |
| If(CQICH Control Info == 1){ | | |
| Period | 3 bits | Period (in frame) = 2^{period} |
| Frame offset | 3 bits | |
| Duration | 4 bits | A CQI feedback is transmitted on the CQI channels indexed by the CQICH_ID for 10×2^d frames. |
| For (j=0;N_layer+1;j++) { | | |
| Allocation index' | 6 bits | Index to CQICH assigned to this layer. |
| } | | |
| CQICH_Num | 2 bits | Number of additional CQICHs assigned to this SS (0-3) |
| for (i=0; i<CQICH_Num; i++) { | | |
| Feedback type | 3 bits | Type of feedback on this CQICH |
| Allocation index | 6 bits | |
| } | | |
| } | | |

| | | |
|--|-------------------------------|--|
| <u>if(Closed MIMO Control Info == 1){</u> | | |
| <u>if(MIMO Control Info==1) {</u> | | |
| <u>MIMO mode = Matrix</u> | | |
| <u>} Else {</u> | | |
| <u>MIMO mode = Matrix in STC_Zone_IE()</u> | | |
| <u>}</u> | | |
| <u>If (MIMO mode == 00 or 01) {</u> | | |
| <u>Antenna Grouping Index</u> | <u>3 bits</u> | <u>Indicates the index of antenna grouping See 8.4.8.3.4 and 8.4.8.3.5 If(Matrix_indicator == 00) 000~010 = 0b101110~0b110000 in Table 298c else 000~101 = 0b110001~0b110110 in Table 298c</u> |
| <u>} elseif (MIMO mode == 10) {</u> | | |
| <u>Num_stream</u> | <u>2 bits</u> | <u>Indicates the number of streams in Table 316f for 3 Tx and Table 316g for 4 Tx.</u> |
| <u>Antenna Selection Index</u> | <u>3bits</u> | <u>Indicates the index of antenna selection See 8.4.8.3.4 and 8.4.8.3.5 000~110 = 0b110000~0b110101 in Table 298d</u> |
| <u>} elseif (MIMO mode == 11) {</u> | | |
| <u>Num_stream</u> | <u>2bits</u> | <u>Indicates number of streams</u> |
| <u>Codebook Precoding Index</u> | <u>6 bits</u> | <u>Indicates the index of precoding matrix W in the codebook See 8.4.8.3.6</u> |

| | | |
|----------------|-----------------|--------------------------------------|
| } | | |
| } | | |
| <i>Padding</i> | <i>Variable</i> | Padding to Nibble; shall be set to 0 |
| } | | |