

Project	<b>IEEE 802.16 Broadband Wireless Access Working Group</b> < <a href="http://ieee802.org/16">http://ieee802.org/16</a> >	
Title	<b>Text Clean-Up For MAC Feedback Header</b>	
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Re:	Response to Sponsor Ballot on IEEE802.16e/D7 document	
Abstract	To text clarification and clean-up regarding MAC Feedback header	
Purpose	To incorporate the text changes proposed in this contribution into the 802.16e/D8 draft.	
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# Text Clean-Up For MAC Feedback Header

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## 1 Introduction

This contribution as a reply comment to MAC header text clean-up only provides proposed text changes for MAC Feedback header section.

## 2 Proposed Text

Notes to editor: In this section, the text in 'black' is the original text in p802.16e/D7. Instruction to editor is in 'blue'. Proposed text change is in 'red'.

### ~~6.3.2.1.2.2~~**6.1 Feedback MAC Header**

#### ~~6.3.2.1.6.1~~ **Feedback header**

#### ~~6.3.2.1.6.2~~ **Mini Feedback header**

*[merge section 6.3.2.1.6.3 below into the Feedback header section since the MIMO Channel Feedback is one of the Feedback type of the Feedback header]*

### ~~6.3.2.1.6.3~~**2.2.1 MIMO Channel Feedback header**

The MIMO Channel Feedback header is used for MSS to provide DL MIMO channel quality feedback to the BS. The MIMO Channel Feedback header can be used to provide a single or composite channel feedback.

The MIMO Channel Feedback header with or without basic CID field is illustrated in Figure 20e and Figure 20f respectively.

[Replace drawing in Figure 20e on page 28 in p802.16e/D7 with the following drawing]

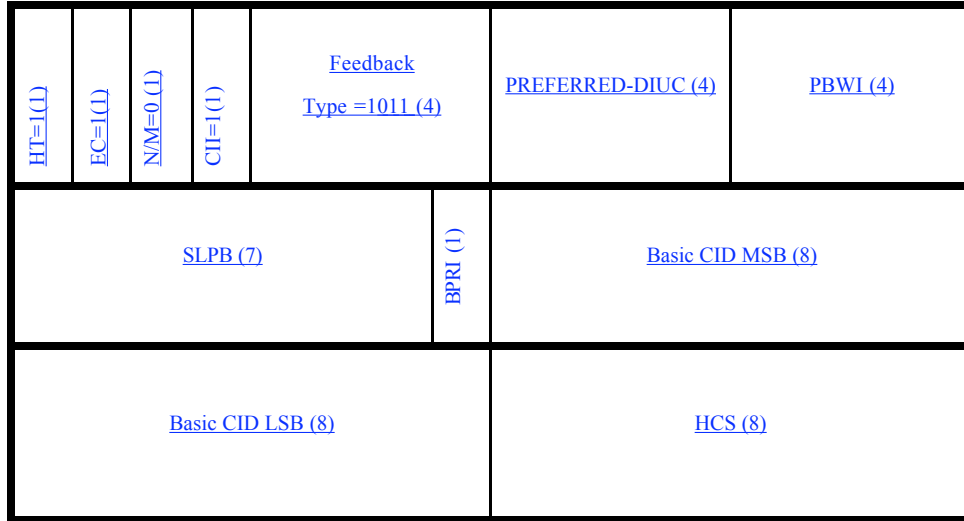


Figure 20e—MIMO Channel Feedback header with CID field

[Replace drawing in Figure 20f on page 28 in p802.16e/D7 with the following drawing]

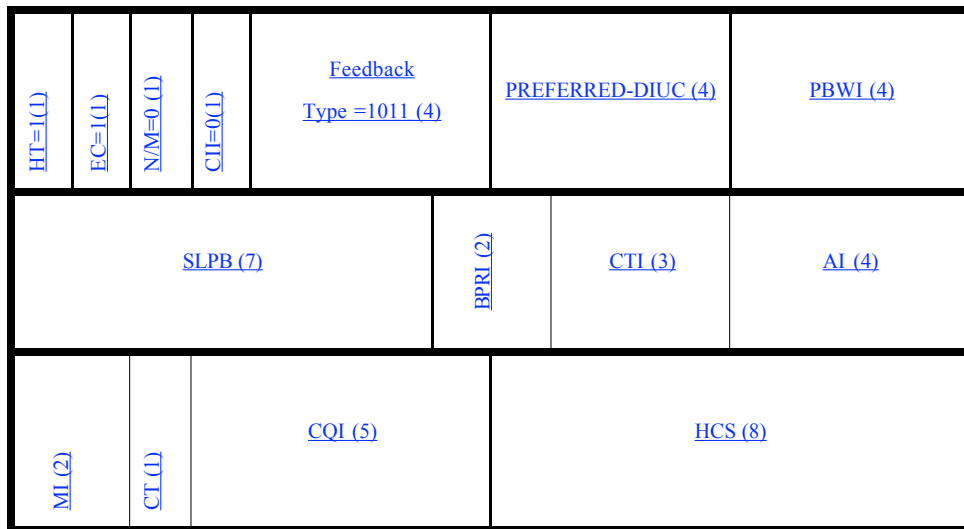


Figure 20f—MIMO Channel Feedback header without CID field

The MIMO Channel Feedback header shall have the following properties:

- f) The length of the header shall always be 6 bytes.
- ag) The TYPE field shall be 0b10000b1011.
- bh) PREFERRED-DIUC indicates the preferred DIUC suggested by the MSS.
- ci) PBWI provides the size of the preferred bandwidth<sub>2</sub> which can be used for DIUC transmission.

- d) SLPB points to the starting preferred bandwidth location. Combining with PBWI field, BS knows the exact size and location of the preferred bandwidth in the channel
- e) BPRI can be used to rank up to four preferred burst profiles within the DL channel.
- f) CTI provides coherent time information.
- g) AI can support up to four antennas.
- h) MI suggests the preferred STC/MIMO Matrix for the MSS.
- i) CT/CQI can support two types of CQI report.

The fields of MIMO Channel Feedback header are defined in Table 7k

**Table 7kj—Description of MIMO Channel Feedback content fields (Feedback type = 0b1011) header fields**

Name	Length (bits)	Description
HF	1	Header Type = 1
EC	1	Always set to 1
N/M	1	Always set to zero
CI	1	<del>The CI field (CID Inclusion Indication) shall be set to 1 for the header with CID field and set to 0 for the header without CID field.</del>
Feedback Type	4	Type = 0b1011
PREFERRED-DIUC	4	Index of the DIUC preferred by the MSS.
PBWI	4	Preferred Bandwidth Index indicates the ratio of the preferred bandwidth over used channel bandwidth:  0000: 1 0001: 3/4 0010: 2/3 0011: 1/2 0100: 1/3 0101: 1/4 0110: 1/5 0111: 1/6 1000: 1/8 1001: 1/10 1010: 1/12 1011: 1/16 1100: 1/24 1101: 1/32 1110: 1/48 1111: 1/64  Where Ratio = $BW_{preferred}/BW_{used}$ $BW_{preferred}$ : Preferred bandwidth for DIUC transmission $BW_{used}$ : Actual used channel bandwidth (excluding guard bands)
SLPB	7	Starting Location of Preferred Bandwidth: 0-127 The effective bandwidth (used bandwidth) is divided into 1/128 interval, from 0 to 127 representing from lower to higher band. SLPB indicates the starting location of preferred bandwidth for the DIUC burst profile

BPRI	1/2	<p>Burst Profile Ranking Indicator (without basic CID): BPRI indicates the ranking for DL channel condition of the preferred bandwidth as reported in the current header where 0 is the most preferred bandwidth)</p> <p>00: 1<sup>st</sup> preferred burst profile  10: 2<sup>nd</sup> preferred burst profile  01: 3<sup>rd</sup> preferred burst profile  11: 4<sup>th</sup> preferred burst profile</p> <p>Burst Profile Ranking Indicator (including basic CID):  0: 1<sup>st</sup> preferred burst profile  1: 2<sup>nd</sup> preferred burst profile.</p> <p><u>This field is 1 bit only present when CII is set to 1, otherwise this field is 2 bits.</u></p>
CTI	3	<p>Coherent Time Index: CTI indicates the proximate duration of the valid MIMO channel conditions</p> <p>000: Infinite  001: 1 frame  010: 2 frames  011: 3 frames  100: 4 frames  101: 8 frames  110: 14 frames  111: 24 frames</p> <p><u>This field is only present when CII is set to 0.</u></p>
AI	4	<p>This report can be a composite channel condition report, each bit represents for each antenna; "1" is applicable, "0" is not applicable</p> <p>Antenna Index:  Bit 0 (MSB)- Antenna 0  Bit 1 – Antenna 1  Bit 2 – Antenna 2  Bit 3 (LSB) – Antenna 3</p> <p><u>This field is only present when CII is set to 0.</u></p>
MI	2	<p>Matrix Indicator:  00: No STC  01: Matrix A  10: Matrix B  11: Matrix C</p> <p><u>This field is only present when CII is set to 0.</u></p>
CT	1	<p>CQI Type: The type of CQI feedback in the CQI field  0: DL average CQI feedback  1: CQI feedback for the preferred bandwidth indicated in the current header</p> <p><u>This field is only present when CII is set to 0.</u></p>
CQI	5	<p>CQI feedback</p> <p><u>This field is only present when CII is set to 0.</u></p>
CID	16	MSS basic CID. <u>This field is only present when CII is set to 1.</u>
HCS	8	Header Check Sequence (same usage as HCS entry in Table 5).

-----End text-----

### 3 References

- [1] IEEE P802.16-REVe/D7-2004  
[2] IEEE P802.16-2004

