

Project	IEEE 802.16 Broadband Wireless Access Working Group < http://ieee802.org/16 >	
Title	Text Clean-Up For MAC Feedback Header	
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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 MAC header formats

Two ~~six~~ **Two** MAC header formats are defined. The first is the generic MAC header that begins each MAC PDU containing either MAC management messages or CS data, ~~where HT is set to "0" as shown in Table 4a. The second is the MAC header without payload, where HT is set to "1". For the latter format, the MAC header is not followed by any payload in the MAC PDU, however, the CRC is mandatory. The third is the MAC header format with HT = 1 and EC = 1 as shown in Table 4a. For this format, there is no payload following the MAC header. The second is the bandwidth request header used to request additional bandwidth. The single bit Header Type (HT) field distinguishes the generic MAC header and bandwidth request header formats. The HT field shall be set to zero for the Generic Header and to one for a bandwidth request header. The third is the PHY channel report header used for the MS to send a PHY channel report to the BS. The fourth is the feedback header used for the MS to provide its feedback. The fifth is the bandwidth request and UL TX power report header used for the MS to send a combined bandwidth request and UL Tx power report. The sixth is the SN report header used by the MS to feedback SDU SN during fast BS switching. The single-bit header type (HT) field distinguishes the generic MAC header and the rest of the header formats. The HT field shall be set to zero for the generic header and~~
~~to one for other MAC headers.~~

Note that the DL MAC header format with HT/EC = 0b11, as defined as "Compressed DL-MAP", is defined specifically to work with only OFDMA PHY. Therefore, the description is not in any part of this section; the detailed description can be found in section 8.4.5.6.1.

6.3.2.1.1 Generic MAC **h**Header

6.3.2.1.2 MAC header without payload

6.3.2.1.2.1 Request/Report MAC Header

6.3.2.1.2.1.1 Bandwidth request header

6.3.2.1.2.1.2 ~~3~~ PHY channel report header

6.3.2.1.2.1.3 ~~4~~ Bandwidth request and uplink sleep control header

6.3.2.1.2.1.4 ~~5~~ SN report header

6.3.2.1.2.2 ~~6~~ Feedback **MAC H**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]

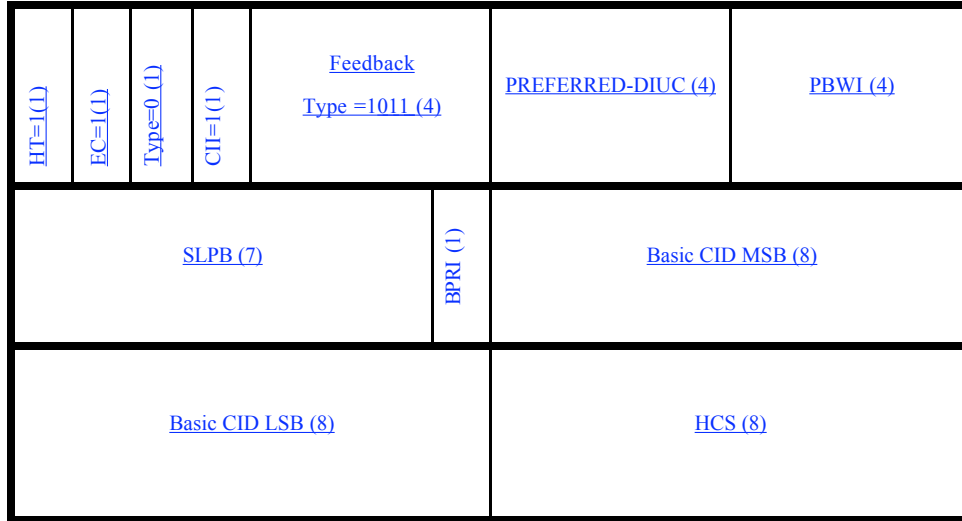


Figure 20e—MIMO Channel Feedback header with CID field

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

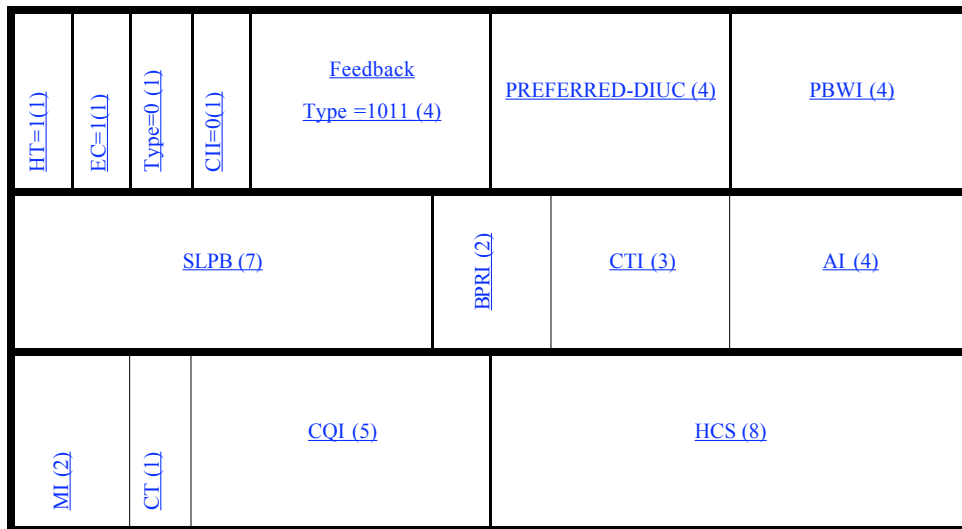


Figure 20f—MIMO Channel Feedback header without CID field

The MIMO Channel Feedback header shall have the following properties:

- f) ~~The length of the header shall always be 6 bytes.~~
- ag) The ~~TYPE~~Feedback Type field ~~shall be 0b1000~~is defined in Table 7i—Feedback type and feedback content.
- bh) PREFERRED-DIUC indicates the preferred DIUC suggested by the MSS.
- ci) PBWI provides the size of the preferred bandwidth₃ 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 7k—Description of MIMO Channel Feedback header fields

Name	Length (bits)	Description
HT	1	Header Type = 1
EC	1	Always set to 1
N/M	1	Always set to zero
CI	1	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.
Feedback Type	4	Feedback 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: 1st preferred burst profile 10: 2nd preferred burst profile 01: 3rd preferred burst profile 11: 4th preferred burst profile</p> <p>Burst Profile Ranking Indicator (including basic CID): 0: 1st preferred burst profile 1: 2nd 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	<p>MSS basic CID. <u>This field is only present when CII is set to 1.</u></p>
HCS	8	<p>Header Check Sequence (same usage as HCS entry in Table 5).</p>

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

3 References

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

