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| Project        | <b>IEEE 802.16 Broadband Wireless Access Working Group</b> < <a href="http://ieee802.org/16">http://ieee802.org/16</a> >   |   |
| Title          | <b>Variable-size MAC Signaling Header Format (16.2.2.1.3)</b>  |   |
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| Source(s)      | Lei Wang<br>InterDigital Communications, LLC   | Voice : +1 858 205-7286<br>E-mail: <a href="mailto:leiw@billeigean.com">leiw@billeigean.com</a> |
| Re:            | IEEE 802.16 Working Group Letter Ballot #30b on P802.16m/D3  |   |
| Abstract       | The contribution proposes a variable-size MAC Signaling Header format (16.2.2.1.3).  |   |
| Purpose        | To be discussed and adopted by TGM for the 802.16m DRAFT amendment.  |   |
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# Variable-size MAC Signaling Header Format (16.2.2.1.3)

*Lei Wang*

*InterDigital Communications, LLC*

## 1 Introduction

In the 802.16m/D3, the MAC signaling header is of fixed size, i.e., 6 bytes, as shown in Table 655. Why do we have to have a fixed size MAC signaling header? The following answer was given: the minimum allocation size is 6 bytes.

Please note that MAC signaling header can also be concatenated with other MAC PDUs in a data burst, so the mini-size of 6 bytes of a data burst shall not be used as a binding factor of the signaling header design. Of course, if the group agrees, we can use 1 LRU with 6 bytes as the max size for our 16m MAC signaling header. It is important to allow MAC signaling headers to be of variable sizes, because the MAC signaling headers are designed to efficiently transport short control/signaling information. As shown in the current MAC signaling headers, with the fixed size, some unnecessary padding bits are needed, thus resulting in unnecessary overhead. Basically, it is the matter of padding inside the signaling header vs. leaving the bits outside the signaling header for possible other uses.

In addition, allowing variable-size MAC signaling header does not impact on the 16m MAC implementation complexity, because the 16m MAC already requires the processing capability of processing variable size MAC PDUs, variable-size MAC extended headers, etc.

This contribution proposes variable-size MAC Signaling Header format.

## 2 Suggested changes in the 802.16m/D3

The following is the proposed change in the 802.16m/D3. Note that the new text is marked with blue and underline; the deleted text are marked with red and strikethrough.

**Suggested change #1:** page 22, line 13

Change Table 655 as follows:

**Table 655—MAC Signaling Header Format**

| Syntax                 | Size (bit)                             | Notes   |
|------------------------|--|---|
| MAC Signaling Header { |  |   |
| Flow ID                | 4                                      | Flow identifier. This field indicates MAC signaling header.                             |
| Type                   | 4                                      | MAC signaling header type.  |
| contents               | <del>40</del> <a href="#">variable</a> | MAC signaling header Contents, <a href="#">with the size implied by the Type field.</a> |
| }                      |  |   |

### 3 References

[1] IEEE Std 802.16-2009

[2] IEEE P802.16m/D3, “DRAFT Amendment to IEEE Standard for Local and metropolitan area networks”