

Project	<b>IEEE 802.16 Broadband Wireless Access Working Group</b> < <a href="http://iee802.org/16">http://iee802.org/16</a> >		
Title	<b>Reply Contribution for #164 and #506</b>		
Data Submitted	<b>2007-02-15</b>		
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Re:	IEEE Std 802.16-2004/Cor2/D2		
Abstract			
Purpose	Adoption of proposed changes into IEEE Std 802.16-2004/Cor2/D2		
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**Reply Contribution for #164 and #506**

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**Introduction**

There is an ambiguity regarding the usage of EC bit of MAC header. The standard does not mention how to set the EC bit in the case payload ~~is is~~ not included. Hence, it is necessary to clarify this problem.

This contribution addresses Cor2 CR #164 and CR #506. Although this contribution does not propose any changes to the section addressed by CR #506, the following changes make the changes in the resolution of CR #506 unnecessary.

### Proposed changes

**[In section 6.3.2.1.1, add the following to page 13 of P80216\_Cor2\_D2]**

*Change the last sentence of 6.3.2.1.1*

The ESF bit in the Generic MAC header indicates that the extended subheader is present. Using this field, a number of additional subheaders can be used within a PDU. The extended subheader shall always appear immediately after the Generic MAC header and before all other subheaders: ~~All extended subheaders are not encrypted. (See 6.3.2.2.7.)~~ Contrary to the other subheaders, extended subheaders are not considered part of the MAC PDU payload and, hence are not encrypted. When an entity transmits a MAC PDU without a payload, it shall set the EC bit in the Generic MAC header to 0, even if the connection on which it transmits the MAC PDU is associated with data encryption. When an entity receives an MAC PDU which that does not contain a payload, it shall process this MAC PDU if the EC bit is set to 0, and should discard this MAC PDU if the EC bit is set to 1.

*Modify the text as follows in section 6.3.2.1.1, Table 5*

EC	1	Encryption Control
		0 = Payload is not encrypted <u>or payload is not included</u>
		1 = Payload is encrypted

**[In section 6.3.2.2.7, perform the indicated changes to page 18 of P80216\_Cor2\_D2]**

The extended subheader group (see Figure 20l), when used, shall always appear immediately after the Generic MAC header and before all subheaders; ~~and, if the MAC PDU contains an encrypted payload (i.e., the EC bit is set to 1), the~~ PN number ~~[if MAC PDU is protected (i.e., when EC=1)],~~ as described in 6.3.2.2. The extended subheader group format is specified in Table 13a, Table 13b, and Table 13c. Extended subheaders shall not be encrypted. ~~If ESF is sent in a PDU without payload, the EC bit in the MAC PDU header shall be ignored, even if this service flow has an associated encryption suite.~~

**[In section 6.3.3.6, perform the indicated changes to page 100 and 101 of P80216\_Cor2\_D2, changes are indicated with RED]**

Encryption of the payload is indicated by the EC bit field. A value of 1 indicates the payload is present and encrypted and the EKS field contains meaningful data. A value of 0 indicates the payload is not encrypted or not present. Any ~~unencrypted~~ MAC PDU containing an unencrypted payload received on a connection mapped to an SA requiring encryption shall be discarded. ~~If a MAC PDU does not have payload, the transmitter side shall set the EC bit in the MAC PDU header according to the SA attribute associated with the connection, and the receiver side shall ignore the~~

EC bit.

**[In section 7.2.2.1 page 172 of P80216\_Cor2\_D2, add the following which is modification of the 802.16e-2005.]**

*Modify the last paragraph as follows in the section 7.2.2.1*

The payloads of MAC PDUs ~~with a payload~~ sent on connections that belong to an SA that includes data encryption, shall be encrypted. A MAC PDU with a payload received on such ~~a~~ connections, with the EC bit not set, shall be discarded. A MAC PDU without a payload received on such a connection shall be processed if its EC bit is set to 0, and should be discarded if its EC bit is set to 1.