Project	**IEEE 802.16 Broadband Wireless Access Working Group <http://ieee802.org/16>**	
Title	**Changes to the Sections 6.3.2.3.67/68 Re:BS_CCID_IND and BS_CCID_RSP messages**	
Date Submitted	**2007-01-08**	
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Re:	Changes to Draft Stanadard	
Abstract	Editorial Changes in response to Comment of LB#24	
Purpose	Add consistency and clarity to draft document.	
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Changes to the Sections 6.3.2.3.67/68 Re: BS_CCID_IND and BS_CCID_RSP messages

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Introduction

As consequence of comments 91,93,94,96 of [2], Sections 6.3.2.3.67 and 6.3.2.3.68 in current draft document [1] need specific editorial revisions and technical details in order to maintain consistency and compliance.

A number of comments from the [2] are resolved through this contribution. Specifically,

Comment 91: Text aligned to reflect new concept on CXCC.

Comment 93: Changes made to remove reference to old terminology and add new terms.

Comment 94: Changes made to remove reference to old terminology and add new terms.

Comment 96: Clarification and specific identification provided

Specific Editorial Changes

This section provides a list of changes to [2] .

Blue Underlined text represents specific editorial additions
~~Red strikethrough text~~ is to be deleted.
Black text is already in the draft.
Bold Italic text is editorial instructions to the editor.

Add the following additional lines to the paragraph between lines 42 and 44 on page14 of the current working draft document [1]

The message is ~~sent~~ also sent when non-WirelessMAN-CX systems are detected, such RLAN signals or radars which have higher regulatory priority to the bandwidth. Information about the specific interferer can be sent, assuming that this information can be specifically determined by the interfered-with SS. Such information can include the classification of a radar or type bursty non-WirelessMAN-CX system. Thresholds for sending BS_CCID_RSP messages in response to non-Wireless MAN-CX interference can be set in the complementary BS_CCID_IND message.

Add the following changes to the sentence between lines 58 and 60 on page 14 of the current working draft document [1]

BS RF_Sector_ID: The RF antenna sector ID is used to identify the RF antenna ~~in a~~ at the interfering base station ~~if~~ where multiple RF antennas ~~are~~ may be used ~~for RF reuse purpose~~; ~~it is taken~~ this information is derived from the BSD. It contains information about the azimuth direction (with respect to True North) and 3 dB azimuth beamwidth of the antenna pattern that created the interference.

Add the following changes to the sentence on lines 65 on page14 of the current working draft document [1]

~~**CMI_ID_XX**~~ **CX_CMI_D(n):** The Coexistence Messaging downlink Interval (where n=1-3) during which the interference was received.

Add the following changes to the paragraph between on lines 6 and 10 on page 15 of the current working draft document [1]

INT_BSD_Frq: The frequency of interference BSD events detected per ~~CMI~~ Coexistence Control Channel (Tcxcc) cycles (calculated as the number of BSD interference events per N ~~full~~ ~~CMI~~ Tcxcc cycles [1 cycle= 10 Sec ~~1 min TBD~~]). For this specific BSD and BSID, as relayed by this BS_CCID_IND message. This value can be set by the home base station to make the SS less responsive to interference detection (such as highly sporadic and transient events). This value is a threshold value determining when a BS_CCID_IND needs to be sent by the interfered with SS. Only when this value has been exceeded will the BS_CCID_RSP message be sent.

Add the following changes to the paragraph between on lines 12 and 18 on page 15 of the current working draft document [1]

DFS_LE_PWR_FRQ: This parameter is used to identify the types of interfering devices and provide information that may be specific to the particular devices. The parameter contains the mean RSSI of the radar signals or non-WirelessMAN-CX systems detected during the (No+Io) measurement slots of the Tcxcc ~~in CMI_ID_54~~. Radar signals may be detected at below DFS threshold values, and the RSSI level given will be the mean value of such signals. Other radar information such as PPS and Pulse duration will be given in the Device Detection Specific Fields (TBD)~~and the value given for their signature will be radar events (pulses) per minute.~~ If non- WirelessMAN-CX systems their signature will be given as number of detected ~~CMI_ID_54~~ interference events per N Tcxcc cycles ~~CMI cycles [1 minute=1 Cycle TBD].~~ **This parameter will be used to support specific interference detectors that may be mandated by for use in specific bands. Additional bit fields are provided in support of these TBD requirements.**

Make the following changes to Table 108af located between on lines 21 and 49 on page 15 of the current working draft document [1]

Table 108af-- BS_CCID_IND message format

Syntax	Size	Notes
BS_CCID_IND_Message_Format ( ) {		
Management Message Type =72	**8 bits**	
SS_ID	**48 bits**	**Subscriber station ID**
DFS_LE_PWR_FRQ	**32 bits**	**Bits 0-3: Device Type** **Bits 4-15: Device detection specific** **Bits 16-23: 8 bit mean RSSI**

		Bits 24-31: TBD
INT_BSD_Frq	**16 bits**	**Bits 0-7 For Wireless MAN-CX detection: The frequency of interference BSD ~~(or non-WirelessMAN-CX)~~ ~~Interference~~detection~~-~~ events ~~at set detection power threshold~~ per N Tcxcc cycles. Bits 8-15 For non-Wireless MAN-CX detection: The number of interference events per Tcxcc cycles exceeding a threshold RSSI specific to the SS detector.**
BS ID	**48 bits**	**Foreign BS_ID**
BS_RF_Sector_~~id~~ID	**~~8~~ 16 bits**	**~~1-255 for RF reuse BS~~ Bits 0-7 For azimuth of beam wrt True North, 2 degree steps Bits 8-15 for –3db azimuth Beamwidth , 2 degree steps. ~~0 reserved for no RF reuse BS~~**
BS EIRP	**8 bits**	**Nominal EIRP of interfering BS = FF device is non-Wireless MAN-CX**
~~CMI_ID_XX~~ CX_CMI_D(n)	**8 bits**	**Coexistence Messaging Interval ID In which Wireless MAN-CX interference detected. Otherwise =0 when detection (leading to this response) done in (No+Io) slot of CXCC. ~~(CMI_ID_54 for non-Wireless MAN-CX)~~**
IP_BS Proxy_Address	**Variable**	**(Proxy IP)**
}		

Make the following changes the paragraph located between on lines 54 and 59 on page 15 of the current working draft document [1]

This message is sent to the SS initiating the BS_CCID_IND message. It is sent by the BS and it is used to indicate whether the interference events identified in the BS_CCID_IND have been resolved. For DFS and non-

IEEE 802.16h interference events ~~responses~~, ~~other responses~~ in addition to this message there likely will be other actions issued by the network management systems, which can entail moving to other channels~~,~~. For WirelessMAN-CX systems the actions could include reducing EIRP at the interfering BS or assigning the interfered-with SS to a different sub-frame, etc., ~~at the SS~~. This message is also sent to adjust the threshold of interference detection at the SS, both to Wireless MAN-CX and other system interference.

References

[1] IEEE P802.16h/D1: *Air Interface for Fixed Broadband Wireless Access Systems Improved Coexistence Mechanisms for License-Exempt Operation*, Draft Standard.

[2] IEEE 80216h-06_068r2: *Letter Ballot #24 Commentary file with resolutions from Session #46.*