Project	IEEE 802.16 Broadband Wireless Access Working Group <**http://ieee802.org/16**>
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Source(s)	Shulan Feng Hisilicon Tech. Co., LTD Bld.17, No.8, Dongbeiwang West Road, Hai-Dian District, Beijing, P. R. China	Voice: +86-10-82829151 Fax: e-mail to : fengsl@hisilicon.com
Re:	IEEE 802.16 Working Group Letter Ballot #24, on P802.16h/D1
Abstract	This contribution proposes to perform channel detection using quiet period, including slave sub-frame, extended quiet period and quiet period during CSI/CMI.
Purpose	Define how to perform channel measure during the operating stage.
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Using Quiet Period for Channel Measurement

Shulan Feng
Hisilicon Technologies Co., LTD

Introduction

The current 16h draft has defined the procedure of working channel selecting during initial stage but not considered the detailed procedure in the operating stage. Considering the wireless environment change from time to time, the channels not free in IBS initial stage may be free later, or a channel which is available in the initial stage may be not available because of detection of primary user or overcrowded. And to support channel distribution optimization procedure, systems in the operating stage needs to perform channel measurement to find an alternative channel. So it is perfect if the system in the operating stage listens for the availability of other channels.

On the other hand, system will be quiet during slave CSI/CMI. These quiet periods are periodic and may be more than 1ms. So it is possible for the system to use these quiet periods to sense the status of another channel.

Reference

[1] IEEE 802.16h-D1: Air Interface for Fixed Broadband Wireless Access Systems: Amendment for Improved Coexistence Mechanisms for License-Exempt Operation

Proposed Text

15.3.1.4 Interference Identity in non-working channel

After entering network, BS will find a free OCSI and claim this OCSI as its master OCSI. BS will broadcast its information during its master OCSI. The other OCSI will be the slave OCSI and BS will be quiet during ICSI and its slave OCSI. So during these quiet periods, BS may switch to non-working channel and determine the interference status on that channel.

During the ICSI, BS may switch to the channel to be measured and broadcast its interference information on that channel. The SSs working on the measured channel will detect it and report to their serving BS. Then the BS working on the measured channel will send add-coexistence-neighbor-request message to the measurement BS to add its as an neighbor on the measurement channel. This procedure is performed just like community entry procedure of new BS (15.3.1.3) except that there is no need to perform interference avoidance coordination. BS and its neighbor BS on the measured channel just update its information table.

15.3.2.4 Interference Identity in non-working channel

After entering network, BS will find a free CX_CMI_D and claim this CX_CMI_D as its master CX_CMI_D. BS will broadcast its BSD information during its master CX_CMI_D. The other CX_CMI_D will be the salve CX_CM_D and during its salve CX_CMI_D, BS will be quiet on the working channel.

During the slave CX_CMI_D slot, BS may switch to the channel to be measured channel and find a free CX_CMI_D to broadcast its interference information on that channel just like community entry procedure of new BS (15.3.2.3) except that there is no need to perform interference avoidance coordination. BS and its neighbor BS on the measured channel just update its information table.