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| Title | Using Quiet Period for Channel Measurement | | |
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| 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

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Introduction

At the meeting #46 in Dallas, contribution C80216h-06_105r1[2] is presented and Task group decide to make final decision at meeting #47 in London (comment #560 in 80216-06_068r2[3]). Contribution C80216h-06_105r1 is updated to C80216h-06_105r3 following the suggestion of TG.

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
- [2] C80216h-06_105r1, Using quiet period for channel measurement
- [3] 80216h-06_068r2, Commentary Database for LB 24

Proposed Text

15.3.1.4 Interference Identification 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 and will be quiet during ICSI and other OCSIs. So during these quiet periods, BS may switch to non-working channel and identify the interference neighbor 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 it as a 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 Identification in non-working channel

After entering network, BS will find a free CX_CMI_D slot and use this CX_CMI_D as its master CX_CMI_D. BS will broadcast its BSD information during its master CX_CMI_D. During the other

CX_CMI_Ds which are not owned by the system, BS will be quiet on the working channel. Then BS may switch to the channel to be measured, 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.