

Project	IEEE 802.16 Broadband Wireless Access Working Group < http://ieee802.org/16 >	
Title	Enhancing the Procedure Flow in WirelessMAN-CX Operating Stage----Methods to Fairly Use Channels in WirelessMAN-CX Operating Stage	
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Re:		
Abstract	This contribution proposes to enhance adaptive channel selection using 2-hop BS working channel ID to increase spacial efficiency.	
Purpose	To consolidate the working document	
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Methods to Fairly Use Channels in WirelessMAN-CX Operating Stage

By

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Introduction

802.16h draft [1] defines the procedure of WirelessMAN-CX systems in operating stage. But the procedure in [1] does not describe what should the systems in a congested channel do when they find channels with fewer systems working in them. The procedure in [1] also does not provide the methods to avoid the channel switching collisions and to guarantee the fair channel usage when the systems switch to a new working channel.

[2] provides the methods to fix these issues. This document provide editorial changes according to [2].

15.1.3 Procedure flow in WirelessMAN-CX

15.1.3.1 Procedure flow for BS

(2) Operating stage

Insert the following red text:

If a new free channel is detected and the working channel of system is too crowd, system may switch to the new free channel. System may request its coexistence neighbors to delete it from their coexistence neighbor list using CXP message. And the coexistence neighbor may update their frame structure after system switching to another channel.

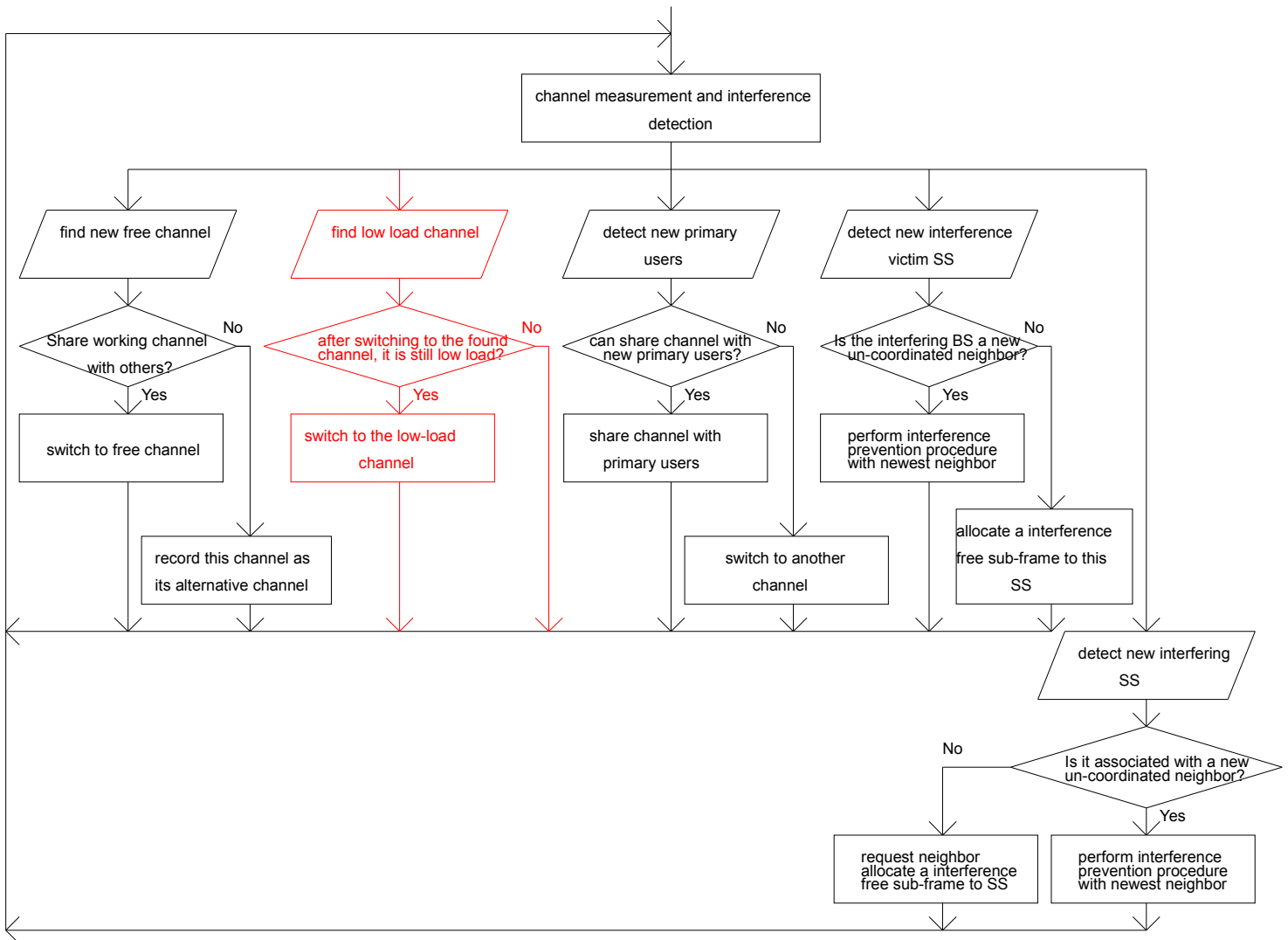
If , after a system in operating stage finds a channel with fewer systems and switches to it, the new working channel does not become more congested than the original working channel, the system may switch its working channel to the channel with fewer systems. The switching system may request its coexistence neighbors to delete it from their coexistence neighbor list by using CXP message. The switching system shall also negotiate with the systems working in the new working channel channel about the new frame structure, OCSI. The switching system may also update its neighbors with its new working channel, OCSI after it joins the new community.

Insert the following red text:

If the interference from a interfering SS is released, e.g. if interfering SS powers off or leaves interference area, BS will check if all interference with one neighbor is released, that is, the number of victim SS interfered by the neighbor is zero and the neighbor of interfering SS which causes interference to the system is zero. If not, system may request its neighbor updates the resource allocation to this SS. If all interference with one neighbor is released, system may delete this neighbor in its coexistence neighbor list and update frame structure according to new neighborhood.

The higher priorities (smaller backoff periods) are given to the systems in more congested channels. The Systems with 3 (maximal value) overlapping neighbors working in the same channel has the smaller backoff window. The Systems with 2 overlapping neighbors working in the same channel has the larger backoff window. The systems trying to switch to a new channel select a random numbers from the backoff windows. A BS will generate a backoff period before it tries to switch its working channel to an idle channel or a channel with fewer systems working in it. During the backoff procedure, the BS and its associated SSs shall allocate more resource to measure the channel that it tries to switch to. In case another BS switch to that channel, the BS shall stop the backoff procedure. If the channel is still a sparsely used channel, the BS may start another backoff procedure or keep stay in the original working channel.

Change Figure h17 as follows:



Reference

- [1] Draft in progress, Part 16: Air Interface for Fixed and Mobile Broadband Wireless Access Systems---- Amendment for Improved Coexistence Mechanisms for License-Exempt “Operation, 80216h-06_d2.pdf
- [2] IEEE S80216h-06_101: Enhancements to the optimization of channel distribution