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Re:	IEEE 802.16 Working Group Letter Ballot #24, on P802.16h/D1	
Abstract	In this contribution, some proposals which has discussed in the interference management ad-hoc group are introduced for TG decision.	
Purpose	Propose the current proposals on potential interference detection for TG decision.	
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Proposals for Potential Interference Detection

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Introduction

As the action item of meeting #46 in Mont Tremblant, an ad-hoc group discussing the interference management in network entry and operating stage is created. One of the big problems of this ad-hoc is resolving the blind area problem [2]. In this contribution, I'll introduce the proposals we have discussed in the ad-hoc group [3] and ask for task group decision.

I thank John for attending ad-hoc actively and offering many good proposals.

Proposals discussed in ad-hoc

First, we all agree to solve the blind area problem, potential interference should be detected and solved first. John proposes to use DL CMI channel for detecting interference and UL CMI channel for reporting interference. But I think because SS is not installed with GPS, so it is impossible for SS to find CMI slot and decode CMI message before it enters network (I think it is impossible that SS without any pre-information can get DL synchronization and decode burst correctly in one frame). And another fault about this scheme is that SS can't report anything before performing ranging with the target BS. The third problem is this scheme can only be used in a common PHY profile. If these problems can be resolved, then this is the best way for the problem. I and John can't get consistence and we need more PHY experts.

In the ad-hoc group, we all also agree that a periodic quiet slot should be reserved for SS in blind area if the scheme mentioned in the first paragraph is impossible. There are three proposals.

One of the proposals is using CX_CC channel, including CMI slots for SS in blind area. But CX_CC channel is too spare and short for initialization of SS.

Another way is reserving a zone during master sub-frame for SS in blind area. This zone should large enough for SS reporting channel measurement and random enough to avoiding conflict. So this scheme is inefficient.

The third way is letting BS work on more than one channel. For example, during common sub-frame and master sub-frame, BS works on a channel, and during slave sub-frame, BS works on another channel. Because the slave sub-frame is periodic and longer enough, everything can do in this period, including SS registration and data transmission. The benefit of this scheme is the probability of blind area is decrease since each BS works independently on more than one channel. Another benefit of this scheme is the capacity of system is improved since BS works at all time. The main disadvantage is that there is not suitable channel exist. John has doubted its complexity, but I don't think so. I give a detailed description in another contribution [4].

Conclusion

These are all proposals regarding to this problem. It is the duty of TG who decides which scheme to be adopted. There are three schemes available now:

- ✧ Use DL CMI/CSI channel for interference detection and UL CMI channel for interference report.

- More PHY experts needed for realizability

✧ Reserve a zone during master sub-frame

✧ System works on more than one channel.

Or we continue the ad-hoc until better solution is found.

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_094, Dynamic Interference Maintenance in Coexistence Community
[3] http://dot16.org/forum/index.php?topic=55.0
[4] C80216h-06_103, A method which can improve capacity in WirelessMAN-CX