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Proposal for CXCC consolidation

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1 Introduction

The scope of this contribution is to consolidate the CXCC structure, based on the proposals in IEEE C802.16h/07-051 and C802.16h/07-005.

2 Proposed text

Delete Table 10.5.3

Replace the text starting with page 69, line 37 and ending at page 70 line 20

The following text captures the agreement made at session #49 but does not include complect text changes for the document.

Start:

3 Basic principles

The CXCC allocation usage will follow the following rules:

- The CXCC allocations are mapped to Master and Shared sub-frames.
- During the CXCC allocations, no Slave or Shared activity is allowed; however, depending of context, the Master sub-frames may be used for transmitting regular data. The common sub-frame preceding a Slave within a CXCC allocation will not be transmitted.
- The timing of the CXCC allocation, relative to the MAC Frame, is given in clause 10.5.2.
- The timing of the CSI allocation is given in (ref)
- CX_MAC Frame numbering is binary having the length of 10bits; the CX_MAC_Frame = 0 is synchronized with the absolute time 00:00:00.
- The repetition period of CXCC for 5ms MAC Frames is 5.12s (1024 MAC Frames).
- A sub-channel is formed from eight CXCC allocations, mapped within Master and Shared sub-frames, four for the DL and four for the UL.
- The CXCC four sub-channels are scheduled in consecutive order.
- The duration of a CXCC sub-channel is:
    - 1024 / 4 = 256 MAC frames (1280 ms)
    - The CXCC allocations appear in average every 256/8 = 32 MAC Frames (160ms).

- The CXCC allocations during a CXCC sub-channel are:
    - Master 1 sub-frame DL: CX_MAC_NO mod 256 = 0
    - Master 1 sub-frame UL: CX_MAC_NO mod 256 = 32
    - Master 2 sub-frame DL: CX_MAC_NO mod 256 = 64+1
    - Master 2 sub-frame UL: CX_MAC_NO mod 256 = 96+1
    - Master 3 sub-frame DL: CX_MAC_NO mod 256 = 128+2
    - Master 3 sub-frame UL: CX_MAC_NO mod 256 = 160+2

- Shared sub-frame DL: CX_MAC_NO mod 256 = 192+3
- Shared sub-frame UL: CX_MAC_NO mod 256 = 224+3.

4 CXCC sub-channel allocation

4.1 Sub-channel 1

Every DL and UL allocation in the sub-channel 1 starts by transmitting the secondary synchronization signals, followed by a total silent interval for all systems till the end of the UL or DL MAC Frame. The silent interval will be used to determine the specific spectrum users or the spectrum users not compliant with WirelessMAN-CX coordinated approach.

4.2 Sub-channel 2

Sub-channel 2 will be used for data transmission between systems using a same PHY profile and their specific Master sub-frames. Sub-channel CXCC allocations, corresponding to specific Master sub-frames, will be claimed by the systems and used to transmit randomly chosen but periodic BSD and SSURF messages. Only the system claiming a specific CXCC allocation will transmit, while all other systems will remain silent.
The Shared sub-frames will only be used to transmit BSD and SSURF for purposes of interferer identification.

4.3 Sub-channel 3

Sub-channel 3 will be used for Secondary sync / Freq keying (NURBC transmission with freq keying) and signaling to other (Ad-hoc) systems.

4.4 Sub-channel 4

Sub-channel 4 will be used for interference assessment for WirelessMAN_CX compliant systems.
The data or Radio Signature will be transmitted using the max. power during the corresponding Master sub-frames. Every system using a specific Master sub-frame will use the CXCC allocation mapped into that Master sub-frame for letting a new system to assess the maximum interference in a Master sub-frame and frequency channel.

4.5 CSI Allocations

The CSI allocations will be transmitted, if supported, in the last 100us of the Master sub-frame w allocations. No other transmissions are allowed during these intervals.
The detailed structure is presented in (insert paragraph).

- Master 1 sub-frame DL: CX_MAC_NO mod OCSI_cycle = 0
- Master 2 sub-frame DL: CX_MAC_NO mod OCSI_cycle = 1
- Master 3 sub-frame DL: CX_MAC_NO mod OCSI_cycle = 2
- Shared sub-frame DL: CX_MAC_NO mod OCSI_cycle = 3

end