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| Project | **IEEE 802.16 Broadband Wireless Access Working Group <**<http://ieee802.org/16>**>** |
| Title | **Clarification on Talk-around Direct Communication** |
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| Re: | Call for comments on the 802.16.1a Draft AWD, IEEE 802.16n-11/0033 |
| Abstract | This provides AWD text proposals for clarification on talk-around communication in IEEE 802.16.1a |
| Purpose | To be discussed and adopted by TGn |
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**Clarification on Talk-around Direct Communication**

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# Introduction

This contribution is for clarification on talk-around direct communication.

# Proposed Text for the 802.16.1a AWD

Note:

The text in **BLACK** color: the existing text in the 802.16.1a AWD

The text in **~~RED~~** color: the removal of existing 802.16.1a AWD

The text in **BLUE** color: the new text added to the 802.16.1a AWD

[-------------------------------------------------Start of Text Proposal---------------------------------------------------]

# *[Remedy1: Modify the following text in each Sections in the 802.16.1a AWD]*

6.12.2.3.2.1.1 Resource for talk-around direct communication

For talk-around direct communication, ~~two~~three types of infra-structure communication resources are dedicatedly assigned:

- Common Direct Mode Zone (CDMZ): set of PRUs in the uplink infra-structure communication resources with fixed size and positions which are commonly assigned to all cells (must be CRU)

 - Common Direct Mode Zone Extended (CDMZ-E): set of PRUs in the downlink infrastructure communication resources with fixed size and positions which are commonly assigned to all cells (must be CRU)

 - Cell Specific Direct Mode Zone (CSDMZ): additionally assigned direct-mode resource blocks independently assigned by each HR-BS (CRU or DRU) and information to receive cell specific direct mode region can be obtained from common direct mode zone

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6.12.2.3.2.1.2 Frame structure for CDMZ

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The first subframe of the CDMZ logical frame is occupied by synchronization channel. All the HR-MSs receives the synchronization signal on the Sync-CH except HR-MSs transmitting the Sync-CH. The HR-MSs are synchronized to the received synchronization signal if the signal timing has priority to HR-MS’s synchronization timing itself. The details of timing priority is ~~FFS~~described in 6.12.2.3.2.5. Some HR-MSs sends the synchronization signal on the Sync-CH at selected subframes. HR-MS selects its slots for sending synchronization timing in distributed way. The details of how to select is ~~FFS~~described in 6.12.2.3.2.6. The synchronization channel is composed of two parts: synchronization channel preamble part (P-SCH1) and synchronization message part (P-SCH2). The synchronization channel preamble part is used for acquiring time and frequency synchronization, and synchronization sequence part is used for transmitting SYNC-CH IE which includes ~~frame structure information, hop count, transmitter ID et. Al~~transmitter HR-MS ID, reference time, hop count, reference signal strength, frame structure information. The detailed design of synchronization channel is described in 6.12.2.3.2.2.

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A supplementary sub-channel is one-to-one mapped with a dedicated sub-channel. As shown in Figure 913, Sup-CH for Ded-CH in slot 1 is located in slot 2, and Sup-CH for Ded-CH in slot 2 is located in slot 1. ~~By using the supplementary sub-channel, the following indication of MAC messages transmission, PHY signalings and short feedback messages related with the corresponding dedicated subchannel are transmitted.~~

 ~~- MAC messages: indication of MAC messages e.g. AAI-DC-RTS, AAI-DC-CTS for corresponding dedicated subchannel~~

 ~~- PHY signalings: periodic ranging sequence et. al.~~

 ~~- Short feedback messages: ACK, NAK, CQI et. al.~~

…

6.12.2.3.2.4 Supplementary channel

There are two subframes to transmit supplementary channel in a super frame. One subframe for supplementary channel is located in the first uplink subframe of the second frame, and the other subframe for supplementary channel is located in the first uplink subframe of the fourth frame. A supplementary sub-channel is one-to-one mapped with each dedicated sub-channel. By using the supplementary sub-channel, the following ~~MAC messages,~~ PHY signalings and short feedback messages related with the corresponding dedicated sub-channel are transmitted.

 ~~- MAC messages: AAI-DC-RTS, AAI-DC-CTS, MCS information, ranging response et. al.~~

 - PHY signalings: periodic ranging sequence~~, sounding signal~~ et. al.

 - Short feedback messages: ACK, NACK, CQI~~, CSI, RI (rank information)~~ et. al.

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[-------------------------------------------------End of Text Proposal---------------------------------------------------]

# References

[1] IEEE 802.16n-11/0033, “WirelessMAN-Advanced Air Interface for Broadband Wireless Access System; Enhancements to Support Higher Reliability Operations”