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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: | IEEE 802.16 Working Group Letter Ballot Recirc #38a (IEEE P802.16.1a/D2) | |
| Abstract | This contribution provides clarification on talk-around direct communication in IEEE P802.16.1a/D2 | |
| 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 provides clarification on talk-around direct communication in IEEE P802.16.1a/D2.

# References

[1] IEEE P802.16.1a/D2, WirelessMAN-Advanced Air Interface for Broadband Access Systems – Draft Amendment: Higher Reliability Networks, Apr. 2012.

# Proposed Text

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 message in each sections in the IEEE P802.16.1a/D2]*

**6.2.3.65.37 AAI-DC-RTS**

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**Table 106kk – AAI-DC-RTS message field description**

|  |  |  |  |
| --- | --- | --- | --- |
| **Field** | **Size**  **(bits)** | **Value/Description** | **Condition** |
| Source DCTID | 24 | Indicates a source HR-MS address |  |
| Destination DCTID or DCGID | 24 | Indicates a destination HR-MS (Group) address |  |
| Maximum Index of Burst Size | 8 | Indicates a maximum index of burst size that the sending HR-MS suggests to the receiving HR-MS ~~to ecommend~~. The ~~receiving~~sending HR-MS selects the maximum index of burst size ~~that is less than~~ in Table 303. |  |
| Maximum Number of HARQ Retransmission | 2 | Indicates maximum number of PHY burst retransmission for HARQ operation.  0: HARQ retransmission is disabled  1~3: Maximum number of HARQ retransmission ~~is enabled~~ |  |
| Destination Address Type | 1 | Indicates type of destination address.  0: DCTID  1: DCGID |  |
| Piggyback Message Indicator | 1 | Indicates whether a control message is  piggybacked or not  0: no piggyback  1: MAC control message |  |
| Transmit Power | 6 | Unsigned integer from 1 to 64 in units of 1 dBm, where  0b000000=1 dBm and 0b111111=64 dBm. |  |
| *Reserved* | 6 |  |  |
| MAC Control Message | *varia*  *ble* | MAC control messages in Table 1216 except  AAI-DC-RTS and AAI-DC-CTS messages. | Present if  Piggyback  message  indicator is set  to 1 |

**6.2.3.65.38 AAI-DC-CTS**

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**Table 106ll – AAI-DC-CTS message field description**

|  |  |  |  |
| --- | --- | --- | --- |
| **Field** | **Size**  **(bits)** | **Value/Description** | **Condition** |
| Source DCTID | 24 | Indicates a source HR-MS address |  |
| Destination DCTID or DCGID | 24 | Indicates a destination HR-MS (Group) address |  |
| ~~Recommended~~ Index of Burst Size | 8 | Indicates a ~~recommended~~ index of burst size for a dedicated channel. The receiving HR-MS selects the index of burst size that is smaller than maximum index of burst size in the AAI-DC-RTS message. |  |
| Maximum Number of HARQ Retransmission | 2 | Indicates maximum number of PHY burst retransmission for HARQ operation.  0: HARQ retransmission is disabled  1~3: Maximum number of HARQ retransmission |  |
| Piggyback Message Indicator | 1 | Indicates whether a control message is  piggybacked or not  0: no piggyback  1: MAC control message |  |
| *Reserved* | 5 |  |  |
| MAC Control Message | *varia*  *ble* | MAC control messages in Table 1216 except  AAI-DC-RTS and AAI-DC-CTS messages. | Present if  Piggyback  message  indicator is set  to 1 |

**6.2.3.65.39 AAI-DC-MCHG-CMD**

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**Table 106mm – AAI-DC-MCHG-CMD message field description**

|  |  |  |  |
| --- | --- | --- | --- |
| **Field** | **Size**  **(bits)** | **Value/Description** | **Condition** |
| ~~Maximum~~New index of burst size | 8 | Indicates a ~~maximum~~new index of burst size for a dedicated channel |  |

# *[Remedy2: Modify the following text in the section 6.12.2.3.2.4 in the IEEE P802.16.1a/D2]*

**6.12.2.3.2.4 Supplementary Channel**

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As shown in Figure 255 ~ Figure 258, *Ci* is the *i*-th supplementary sub-channel corresponding to the *i*-th dedicated sub-channel. A supplementary sub-channel is composed of two sub-blocks distributed in the frequency domain. Since all HR-MSs should listen the supplementary channels, to obtain Tx. And Rx. Switching time, no signal is transmitted in the last OFDM symbol of supplementary channel (6-th OFDM symbol). The sub-block of supplementary sub-channel is composed of ~~3~~2 subcarriers-by- 5 OFDM symbols. The supplementary sub-channels corresponding to the dedicated sub-channels in slot 1 are located in slot 2, and the supplementary sub-channels corresponding to the dedicated sub-channels in slot 2 are located in slot 1. By assigning a dedicated sub-channel and the corresponding supplementary sub-channel in a cross way, the setup time of communication link and the retransmission latency can be minimized. For example, if an HR-MS transmits a packet by using the dedicated sub-channel 1 in slot 1, because the corresponding supplementary sub-channel is located in slot 2, the receiving HR-MS can transmit ACK/NACK signal by using the supplementary sub-channel in the same superframe, and the retransmission packet can be transmitted in the next superframe.

…

Figure 255 describes the ~~proposed~~ Sup-CH structure for TDC. Details of the Sub-CH structure are defined in 6.12.2.3.2.1. One Sup-CH is composed of four distributed mini-tiles, where a mini-tile has (2 subcarriers)Ⅹ(5 symbols) rectangular-shaped resource elements. A Sup-CH includes ranging channel, CQI channel, and feedback channel, which are transmitted in TDM (time division multiplexing) manner.

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