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| Project | **IEEE 802.16 Broadband Wireless Access Working Group <**<http://ieee802.org/16>**>** | |
| Title | **Modification of synchronization channel pilot structure for talk-around direct communication** | |
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| Re: | Sponsor Ballot on IEEE P802.16.1a/D5 | |
| Abstract | This contribution proposes change to synchronization channel pilot structure for talk-around direct communication | |
| Purpose | For discussion in GRIDMAN TG and adoption into 16.1a draft | |
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**Modification of synchronization channel pilot structure for talk-around direct communication**

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# Introduction

This contribution proposes change to synchronization channel pilot structure for talk-around direct communication. The number of pilot subcarriers is not sufficient to estimate wireless channel in current structure.

# References

[1] IEEE P802.16.1a/D5, WirelessMAN-Advanced Air Interface for Broadband Access Systems – Draft Amendment: Higher Reliability Networks, Aug. 2012.

# Proposed Text

Note:

The text in **BLACK** color: the existing text in the 16.1a draft

The text in **~~RED~~** color: the removal of existing 16.1a draft

The text in **BLUE** color: the new text added to the 16.1a draft

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

# *[Remedy1: Modify the following figure and text in each sections in the IEEE P802.16.1a/D5]*

**6.12.2.3.2.2.3.1 Pilot structure for OFDM symbols transmitting SYNC-CH IE**

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**Figure 251 – Pilot structure for OFDM symbols transmitting SYNCH-CH IE**

**6.12.2.3.2.2.3.2 Resource mapping of SYNC-CH IE**

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Figure 252 shows the physical processing block diagram for the SYNC-CH IE. The Sync-CH IE shall be appended with a 16-bit CRC, per the CRC16-CCITT specification in Rec. ITU-T X25. The number of bits including the 16-bit CRC is ~~64~~32 bits. The resulting sequence of bits shall be encoded by the TBCC described in 6.3.10.2 with parameter M=(~~2~~4Kbufsize-48) and Kbu~~r~~fsize =3L, where L is the number of information bits. Then the effective code rate is ~~1/6~~2/21. The encoded bit sequence shall be modulated using QPSK. The modulated symbols shall be mapped to two transmission streams using SFBC as described in 6.3.6.1.1. The two streams using SFBC shall be processed and mapped to the transmit antenna as described in 6.3.6.1.2. Antenna specific symbols at the output of the MIMO precoder shall 1 be mapped to the resource elements in the last three OFDM symbols described in 6.12.2.3.2.1.

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