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| Project | **IEEE 802.16 Broadband Wireless Access Working Group <**<http://ieee802.org/16>**>** | |
| Title | **Clarification of talk-around direct communication in IEEE 802.16.1a/D5** | |
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| Re: | In response to Sponsor Ballot on P802.16a | |
| Abstract | Changes are provided to accommodate corrections on Talk-around direct communication in IEEE 802.16.1a/D5 | |
| Purpose | To discuss and adopt the proposed text in the draft amendment document on GRIDMAN | |
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**Clarification of talk-around direct communication in IEEE 802.16.1a/D5**

Hyun Lee, Miyoung Yun, Seokki Kim, Won-Ik Kim, Sungkyung Kim, Chulsik Yoon, Sungcheol Chang

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# Introduction

This document provides the clarification of talk-around direct communication in IEEE 802.16.1a/D5.

Changes are provided to accommodate corrections for talk-around direct communication as the following proposed texts.

# References

[1] IEEE 802.16-12-0132-00, GRIDMAN System Requirement Document including SARM annex, January 2012.

[2] IEEE P802.16.1aTM/D5, WirelessMAN-Advanced Air Interface for Broadband Access Systems - Draft Amendment: Higher Reliability Networks, June 2012.

# 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----------------------------------------------]

**[Remedy #1: Adopt the following proposed modification from line #10, page #167 to line #34, page #167]**

6.12.2.3.2.5.1 Frame-level synchronization

To share a common frame timing and configuration reference, an HR-MS listens to a synchronization

channel and receives synchronization preambles in the synchronization channel. The HR-MS selects a

reference time among candidate values including synchronization preambles, GPS, and HR-BS preambles.

When deciding to send a synchronization preamble on synchronization channel, the HR-MS sends it

periodically with a period Tsync.

An HR-MS follows a priority rule to select a reference time in descending order of priority as the

followings:

1) HR-BS preamble

2) GPS

3) Synchronization preamble that has ~~a) smaller value of the ‘hop counter’ field and b) larger value of the received signal strengths in Synchronization channel message IE~~ the largest value of the received signal strength in Synchronization channel message IE which has the smallest value of the ‘hop counter’ field, when the received Synchronization channel message IE is compared with the Synchronization channel message IE selected for the referenced time. The reference source is either HR-BS or GPS.

4) Synchronization preamble that has ~~a) smaller value of the ‘hop counter’ field and b) larger value of the received signal strengths in Synchronization channel message IE~~ the largest value of the received signal strength in Synchronization channel message IE which has the smallest value of the ‘hop counter’ field, when the received Synchronization channel message IE is compared with the Synchronization channel message IE selected for the referenced time. The reference source is HR-MS local clock.

5) HR-MS local clock.

An HR-MS follows a rule to select itself for broadcasting SYNC-CH preamble and SYNC-CH message if

the received signal strength of a SYNC-CH preamble selected for the reference time is less than value of

‘Reference Signal Strength’ field in received SYNC-CH messages with hop counter of SYNC-CH

preamble selected for the reference time plus one. The selected HR-MS picks up a DC frame in which

synchronization channel is expected to be no signal randomly and broadcast SYNC-CH preamble and

SYNC-CH message periodically.

**[Remedy 6: Adopt the following proposed modification from line# 22, page#259 to line#47, page #259 in IEEE P802.16.1a/D5.]**

-- +-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-

-- Direct communication token advertisement

-- +-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-

AAI-DC-TKN-ADV ::= SEQUENCE {

directModeZoneType INTEGER {

cdmz (0),

cdmze (1),

csdmz (2)

} (0..3),

dCHNumber INTEGER (0..15),

pTTTokenStatus INTEGER {

available (0),

~~unabailable~~ unavailable (1)

} (0..3),

destinationDCGID BIT STRING (SIZE(24)),

...

}

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