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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) the smalle~~r~~st value of the ‘hop counter’ fields and b) among the synchronization preambles with the smallest value of the 'hop count' fields, the large~~r~~st value of the received signal strengths ~~in Synchronization channel message IE~~ of all the received synchronization preambles. ~~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) the smalle~~r~~st value of the ‘hop counter’ fields and b) among the synchronization preambles with the smallest value of the 'hop count', the large~~r~~st value of the received signal strengths ~~in Synchronization channel message IE~~ of all the received synchronization preambles. ~~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------------------------------------------------]