

8/6/2005

IEEE 802.16-05/042r5

Document under Review: **P802.16-2004/Cor1/D3**

Ballot Number: **0001008**

Comment Date

Comment # **124**

Comment submitted by: **Lei**

Wang

Member

7/10/2005

Comment Type **Technical, Binding** Starting Page # **57** Starting Line # **65** Fig/Table# **F88** Section **6.3.10.3.2**

With OFDMA, the periodic ranging may be invoked at BS by either receiving CDMA ranging code (as shown in Figure 89) or receiving UL data from SS (as shown in Figure 88). However, the current Figure 88 has couple of problems, one is that it still checks if receiving ranging code after received UL data; the other is that it does not show the case of receiving RNG-REQ message.

Suggested Remedy

see details in contribution C80216maint-05_116 (modified Figure 88).

Proposed Resolution

Recommendation:

Recommendation by

Reason for Recommendation

Resolution of Group

Decision of Group: Rejected

Reason for Group's Decision/Resolution

- 1) the figure is incomplete; missing the "yes" case on one "Good enough box".
- 2) The decision to send a RNG-RSP (success or continue) has nothing to do with RNG-REQ. the only use of RNG-REQ is to notify the BS of ranging anomalies at the SS (max power, etc...)
- 3) RNG-RSP can be sent in an unsolicited way, which is not covered by the figure.

Group's Notes

Group's Action Items

Editor's Notes

Editor's Actions

Editor's Questions and Concerns

Editor's Action Items

8/6/2005

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Document under Review: **P802.16-2004/Cor1/D3**

Ballot Number: **0001008**

Comment Date

Comment # **211**

Comment submitted by: **Paul**

Piggin

Member

7/10/2005

Comment Type **Technical, Binding** Starting Page # **88** Starting Line # **56** Fig/Table# **266** Section **8.3.11.1**

Rx SNR values for OFDM are incorrect in table 266 (page 491 of 802.16-2004). The values should be:

Modulation	Coding rate	Rx SNR
BPSK	1/2	3
QPSK	1/2	6
QPSK	3/4	8.5
16QAM	1/2	11.5
16QAM	3/4	15
64QAM	2/3	18.5
64QAM	3/4	21

The values currently in Table 266 are in error, as they neglected to include coding gains. See IEEE C802.16maint-05/112 for full details.

Suggested Remedy

Adopt changes suggested in section called 'Suggested Corrections to 802.16-2004', and subsection called '8.3.11.1' in C802.16maint-05/112

Proposed Resolution

Recommendation:

Recommendation by

Reason for Recommendation

Resolution of Group

Decision of Group: Rejected

Reason for Group's Decision/Resolution

Vote to accept the comment:

In favor: 7

Against: 3

Fails

Reason for rejection:

The contribution changes system requirements and does not fix any problems that prevents the system from working.

Group's Notes

Group's Action Items

Editor's Notes

Editor's Actions

Editor's Questions and Concerns

Editor's Action Items

Document under Review: **P802.16-2004/Cor1/D3**

Ballot Number: **0001008**

Comment Date

Comment # **257**

Comment submitted by: **Lalit**

Kotecha

Member

7/10/2005

Comment Type **Technical, Binding**

Starting Page # **103**

Starting Line # **40**

Fig/Table#

Section **8.4.4.7**

Deletion of sec 8.4.4.7 violates PAR.

Sec 8.4.4.7 was introduced to enrich 802.16 standards for using beam-forming technologies. This section has gone through numerous informal and formal discussion before adopted by working group as a part of the standard

Suggested Remedy

Revert deletion of sec 8.4.4.7 - bring back this section into standards

Proposed Resolution

Recommendation:

Recommendation by

Reason for Recommendation

Resolution of Group

Decision of Group: **Rejected**

Reason for Group's Decision/Resolution

The section was deleted since members identified a number of operational problems in the direct beam forming mode and unless the problems are fixed the section should be deleted.

Group's Notes

Group's Action Items

Editor's Notes

Editor's Actions

Editor's Questions and Concerns

Editor's Action Items

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Document under Review: **P802.16-2004/Cor1/D3**

Ballot Number: **0001008**

Comment Date

Comment # **340**

Comment submitted by: Peiyang

Zhu

Member

7/10/2005

Comment Type **Technical, Binding** Starting Page # **128** Starting Line # **35** Fig/Table# Section **8.4.5.4.10.1**

The current draft specifies a mechanism for adaptive coding and modulation (MCS) based on average CINR which may be fed backed through CQICH channel by SS. In CQICH Allocation IE, it indicates that SS will report channel quality indicator through fast feedback channel, where it defines CINR as the channel quality indicator. However, it is difficult to find a unique mapping between CINR and MCS due to the various receiver implementations, different deployment environment and mobile speed.

In addition, it is not clear in the standard where SS should measure the CINR. For a system with mixed zones, especially with mixed frequency reuse factor, adaptive coding and modulation may not work well.

In this contribution, we propose to clarify the channel quality indicator (CQI) feedback. Instead of using CINR as channel quality, we propose to allow CS to report an effective CINR. The effective CINR shall be a function of CINR, implementation aspect, channel type and Doppler. The actual measurement of CQI should be up to the implementation. However, a reference mapping between effective CQI and MCS should be clearly established and used by both BS and SS. This reference mapping can be specified in the standard or in the conformance document. By default, we can use the Table 338 as the reference for packet error rate 10-2. The conformance spec can override the reference table for different class of SSs, for example, it may define multiple tables for various FEC types.

Suggested Remedy

Adopt contribution C80216main-05_133.pdf

Proposed Resolution

Recommendation:

Recommendation by

Reason for Recommendation

Resolution of Group

Decision of Group: Rejected

Reason for Group's Decision/Resolution

Rejected upon the request of the commentor

Group's Notes

D

Group's Action Items

Editor's Notes

Editor's Actions

Editor's Questions and Concerns

Editor's Action Items

Document under Review: **P802.16-2004/Cor1/D3**

Ballot Number: **0001008**

Comment Date

Comment # **460**

Comment submitted by: Pieter-Paul

Giesberts

Member

7/10/2005

Comment Type **Technical, Binding** Starting Page # **168** Starting Line # **59** Fig/Table# Section **8.4.9.4.4**

The uplink example is no longer correct for two reasons:

- * The change in MSB/LSB of the initialization vector of the Data Randomization function of Section 8.4.9.1 as introduced in Cor1/D3.
- * The changed initialization vector and usage of the subcarrier randomization function of Section 8.4.9.4.1 as introduced in Cor1/D3

First steps of the correction provided below, the last step (mapping onto subcarriers) is still to be done.

Suggested Remedy

Revise the example as follows.

Randomized Data (Hex)

~~06 DF 2F 59 42 1E 34 D7 03 19 68 46~~
~~55 8A C4 A5 3A 17 24 E1 63 AC 2B F9~~
~~1E C1 7F 1C A3 82 71 9E 9C AC 29 F9~~

Convolutional encoded Data (Hex)

~~36 F5 E1 7E E8 98 6E 27 EB B9 F2 A6 57 B6 A0 51 FA BD 4E E0 E5 A9 E7 F2~~
~~28 33 E4 8D 39 20 26 D5 B6 DG 5E 4A F4 7A DD 29 49 4B 6C 89 15 13 48 CA~~
~~13 16 8E 18 8A 23 25 D8 4A E0 62 A2 C7 49 E0 0A B6 B4 4A 39 15 1D B9 0A~~

Interleaved Data (Hex)

~~6D BB DF FD B4 94 38 C6 1B 9E D8 53 AE FC 2A DE FD 76 68 AE 94 56 16 65~~
~~4B 04 7D FA 42 F2 A5 D5 F6 1C 02 1A 58 51 E9 A3 09 A2 4F D5 80 86 BD 1E~~
~~63 90 F4 15 98 0B 68 55 2A EE C9 23 1C 81 A0 2C CD 0E 53 78 0A A5 12 26~~

Constellation Mapping (data shall be transformed to constellation values: I value/Q value. The value 0.707 represents $\sqrt{2}/2$):

~~+0.707/ 0.707, -0.707/+0.707, -0.707/ 0.707, +0.707/ 0.707, -0.707/+0.707, -0.707/ 0.707, -0.707/~~
~~+0.707, -0.707/ 0.707, -0.707/ 0.707, +0.707/ 0.707, -0.707/ 0.707, -0.707/ 0.707, -0.707/ 0.707,~~
~~0.707/ 0.707, -0.707/ 0.707, +0.707/ 0.707, -0.707/+0.707, -0.707/ 0.707, +0.707/ 0.707, +0.707/~~
~~+0.707, -0.707/+0.707, +0.707/ 0.707, +0.707/ 0.707, +0.707/+0.707, +0.707/+0.707, -0.707/~~
~~0.707, -0.707/+0.707, +0.707/+0.707, -0.707/ 0.707, +0.707/+0.707, +0.707/ 0.707, -0.707/+0.707,~~
~~+0.707/+0.707, +0.707/ 0.707, -0.707/+0.707, -0.707/ 0.707, -0.707/+0.707, +0.707/ 0.707, -0.707/~~
~~-0.707, -0.707/+0.707, -0.707/ 0.707, +0.707/ 0.707, -0.707/+0.707, +0.707/+0.707, +0.707/ 0.707,~~
~~+0.707/ 0.707, +0.707/+0.707, -0.707/ 0.707, -0.707/+0.707, -0.707/+0.707, -0.707/ 0.707, -0.707/~~
~~+0.707, -0.707/ 0.707, -0.707/ 0.707, -0.707/ 0.707, +0.707/+0.707, +0.707/+0.707, -0.707/+0.707,~~
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~~0.707/+0.707, +0.707/ 0.707, -0.707/+0.707, -0.707/+0.707, +0.707/+0.707, -0.707/+0.707, -0.707/~~
~~+0.707, -0.707/ 0.707, -0.707/+0.707, -0.707/+0.707, +0.707/ 0.707, +0.707/ 0.707, +0.707/+0.707,~~
~~+0.707/ 0.707, +0.707/ 0.707, +0.707/ 0.707, -0.707/+0.707, -0.707/+0.707, +0.707/ 0.707, +0.707/ 0.707,~~

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Change the following paragraph:

~~These results shall be mapped~~ Mapping onto subcarriers and multiplied by PN [assuming the use of logical data subchannel 16, mapped onto physical subchannel 16 in the first time slot and to physical subchannel 17~~29~~ at the second time slot, ~~structure includes pilots and is in the structure of (Symbol Number, Subcarrier Index, I value / Q Value)~~]:

Remove the example below the paragraph (make the old text strike-out and remove new text)

Reason for Group's Decision/Resolution

Group's Notes

Group's Action Items

Editor's Notes

Editor's Actions

Editor's Questions and Concerns

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Document under Review: **P802.16-2004/Cor1/D3**

Ballot Number: **0001008**

Comment Date

Comment # **505**

Comment submitted by: **Lei**

Wang

Member

7/10/2005

Comment Type **Technical, Binding** Starting Page # **198** Starting Line # **2** Fig/Table# Section **11.13.19**

"no CS" is one of the CS types in CS specification. However, the specification for the "no CS" type is incomplete, e.g., there is no "cst" value defined for it, and also no parameter encodings defined for it. For a "no CS" type connection, at minimum the protocol type of the MAC SDU to-be-transported over the connection should be specified. The parameter encoding of "protocol" in 11.13.19.3.4.3 can be used for this.

Suggested Remedy

1. on page 198, line 2, insert the following:

11.13.19.2 CS Parameter Encoding Rules

insert the following row in before the row of "ATM" in the table of "cst" value definition.

98 no-CS

2. on page 198, replace the paragraph in line 18 to line 22 by the following text:

The encoding of the value field is that defined by the IANA document "Protocol Numbers".

For IPv4, the value of the field specifies a matching value for the IP Protocol field. If this parameter omitted, then the comparison of the IP header Protocol field for this entry is irrelevant.

For IPv6 (IETF RFC 2460), this refers to next header entry in the last header of the IP header chain. If this parameter omitted, then the comparison of the IP header Protocol field for this entry is irrelevant.

For "no CS", the value field specifies the protocol type of the MAC SDUs that are transported over the no-CS connection. This parameter shall be specified for a no-CS connection.

Proposed Resolution

Recommendation:

Recommendation by

Reason for Recommendation

Resolution of Group

Decision of Group: Accepted-Modified

remove the "no cs" option from the standard (by changing the value of 0 in section 11.13.19.1 to "Reserved" and removing it from section C.1.1.1.1.2)

Reason for Group's Decision/Resolution

Vote to accept the comment as modified:

In favor: 6

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Against: 5
Fails

Motion by Carl Eklund seconded by Lei Wang to remove the "no cs" option from the standard (by changing the value of 0 in section 11.13.19.1 to "Reserved" and removing it from section C.1.1.1.1.2)

Vote:
In favor: 7
Against: 2
Passes

Group's Notes

Vote to call the question:
In favor: 13
Against: 0

Group's Action Items

Editor's Notes

Editor's Actions

Editor's Questions and Concerns

Editor's Action Items

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Document under Review: **P802.16-2004/Cor1/D3**

Ballot Number: **0001008**

Comment Date

Comment # **522**

Comment submitted by: John

Humbert

Member

7/10/2005

Comment Type **Technical, Binding** Starting Page # **208** Starting Line # **24** Fig/Table# Section **12.4**

[Identical comment submitted by John Humbert, Chris Seagren, Ivy Kelly, Mark Lipford, Serge Manning, Nick J. Baustert]

Due to regulatory changes in spectrum channel allocations (for example, in US BRS band), the enabled channel bandwidths are not currently available in licensed band allocation in the system profiles

Suggested Remedy

Make 10 MHz OFDMA channels available for use in licensed bands.

In Table 411, change OFDMA_profP8 description to "WirelessMAN-OFDMA and WirelessHUMAN(-OFDMA) 10 MHz channel basic PHY Profile"

Change section title of 12.4.3.9 to "WirelessMAN-OFDMA and WirelessHUMAN(-OFDMA) 10 MHz channel basic PHY Profile"

Delete Operation Mode from Table 421

Proposed Resolution

Recommendation:

Recommendation by

Reason for Recommendation

Resolution of Group

Decision of Group: Rejected

Reason for Group's Decision/Resolution

Vote to accept the comment:

In favor: 13

Against: 14

Fails

1. The BRS band focuses on mobility and not fixed applications
2. The solution is incomplete since it does not address the RF profiles

Group's Notes

Group's Action Items

Editor's Notes

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Editor's Action Items

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Document under Review: **P802.16-2004/Cor1/D3**

Ballot Number: **0001008**

Comment Date

Comment # **523**

Comment submitted by: John

Humbert

Member

7/10/2005

Comment Type **Technical, Binding** Starting Page # **208** Starting Line # **26** Fig/Table# Section **12.4**

[Identical comment submitted by John Humbert, Chris Seagren, Ivy Kelly, Mark Lipford, Serge Manning, Nick J. Baustert]

Due to regulatory changes in spectrum channel allocations (for example, in US BRS band), the enabled channel bandwidths are not currently available in licensed band allocation in the system profiles

Suggested Remedy

Make 20 MHz OFDMA channels available for use in licensed bands.

In Table 411, change OFDMA_profP9 description to "WirelessMAN-OFDMA and WirelessHUMAN(-OFDMA) 20 MHz channel basic PHY Profile"

Change section title of 12.4.3.10 to "WirelessMAN-OFDMA and WirelessHUMAN(-OFDMA) 20 MHz channel basic PHY Profile"

Delete Operation Mode from Table 422

Proposed Resolution

Recommendation:

Recommendation by

Reason for Recommendation

Resolution of Group

Decision of Group: Rejected

Reason for Group's Decision/Resolution

Vote to accept the comment:

In favor: 17

Against: 11

Fails

Motion to delete the following reason for rejection:

"The BRS band focuses on mobility and not fixed applications" by Zion Hadad, seconded by Yossi Segal

In favor: 16

Against: 8

Fails on grounds of not gaining 75%

Reason for rejection of the comment:

The BRS band focuses on mobility and not fixed applications ...

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The solution is incomplete since it does not address the RF profiles

Group's Notes

Group's Action Items

Editor's Notes

Editor's Actions

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Document under Review: **P802.16-2004/Cor1/D3**

Ballot Number: **0001008**

Comment Date

Comment # **525**

Comment submitted by: John

Humbert

Member

7/10/2005

Comment Type **Technical, Binding** Starting Page # **208** Starting Line # **28** Fig/Table# Section **12.4**

[Identical comment submitted by John Humbert, Chris Seagren, Ivy Kelly, Mark Lipford, Serge Manning, Nick J. Baustert]

Due to regulatory changes in spectrum channel allocations (for example, in US BRS band), the enabled channel bandwidths are not currently available in licensed band allocation in the system profiles

Suggested Remedy

Make 5 MHz OFDMA channels available for use in licensed and unlicensed bands.

In Table 411, add OFDMA_profP10 with description "WirelessMAN-OFDMA and WirelessHUMAN(-OFDMA) 5 MHz channel basic PHY Profile"

Add Section 12.4.3.11 as follows:

12.4.3.11 "WirelessMAN-OFDMA and WirelessHUMAN(-OFDMA) 5 MHz channel basic PHY Profile"

Profile identifier: OFDMA_ProfP10.

Systems implementing OFDMA_ProfP10 shall meet the minimum performance requirements listed in Table 422b:

Table 422b—Minimum Performance requirements for OFDMA_ProfP10

Capability	Minimum Performance
Channel bandwidth	5 MHz
BER performance threshold, BER=10 ⁻⁶ (using all subchannels BS/SS)	
QPSK-1/2	<= -86dBm
QPSK-3/4	<= -84dBm
16QAM-1/2	<= -79dBm
16QAM-3/4	<= -77dBm
64QAM-2/3 (if 64-QAM supported)	<= -72dBm
64QAM-3/4 (if 64-QAM supported)	<= -71dBm
[Add to sensitivity 10*log10(NumberOfSub-ChannelsUsed/32) when using less subchannels in the BS Rx]	
Reference frequency tolerance	
BS	<= ± 2*10 ⁻⁶
SS to BS synchronization tolerance	<= 50 Hz
Frame duration code set	{2, 4,6}

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Proposed Resolution

Recommendation:

Recommendation by

Reason for Recommendation

Resolution of Group

Decision of Group: [Withdrawn](#)

Reason for Group's Decision/Resolution

Group's Notes

Group's Action Items

Editor's Notes

Editor's Actions

Editor's Questions and Concerns

Editor's Action Items

Document under Review: **P802.16-2004/Cor1/D3**

Ballot Number: **0001008**

Comment Date

Comment # **552**

Comment submitted by: John

Humbert

Member

7/10/2005

Comment Type **Technical, Binding** Starting Page # Starting Line # Fig/Table# Section **12.3**

[Identical comment submitted by John Humbert, Chris Seagren, Ivy Kelly, Mark Lipford, Serge Manning, Nick J. Baustert]

Due to regulatory changes in spectrum channel allocations (for example, in US BRS band), the enabled channel bandwidths are not currently available in licensed band allocation in the system profiles

Suggested Remedy

Make 10 MHz OFDM channels available for use in licensed bands.

In Table 398, change profP3_10 description to "WirelessMAN-OFDM and WirelessHUMAN(-OFDM) 10 MHz channel basic PHY Profile"

Change section title of 12.3.2.6 to "profP3_10: WirelessMAN-OFDMA and WirelessHUMAN(-OFDMA) 10 MHz channel basic PHY Profile"

Under mandatory features (in 12.3.2.6):

Delete "-License-exempt band usage only" from mandatory features

Change "- DFS capability" to "- DFS capability (for license-exempt bands only)"

Change Table 410 add/change to "Spectral mask" capability

For licensed bands, spectral mask shall follow local regulations.	
For license-exempt bands, sSpectral mask (IB):	Linear interpolation
f0 ± 0 MHz	between points:
f0 ± 4.75 MHz	0 dBr
f0 ± 5.45 MHz	0 dBr
f0 ± 9.75 MHz	-25 dBr
f0 ± 14.75 MHz	-32 dBr
	-50 dBr

Proposed Resolution

Recommendation:

Recommendation by

Reason for Recommendation

Resolution of Group

Decision of Group: **Withdrawn**

Reason for Group's Decision/Resolution