

2001-04-17

IEEE 802.16-01/21

## IEEE 802.16 Working Group on Broadband Wireless Access

<http://WirelessMAN.org>



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Dear P802.16.2 Balloting Group:

Thank you for your participation in the Sponsor Ballot of P802.16.2. The ballot closed on 12 April 2001. The results <<http://ieee802.org/16/tg2/ballots/sponsorballot/group.html>> are, in summary:

24	Approve
4	Abstain
0	Disapprove
2	Not Voting

By virtue of these numbers, the ballot is considered to have passed.

We received four comments; both an editorial and a technical from each of two voters. In the case of one voter, both were compound comments containing a number of changes. Resolutions were developed by a comment resolution group, chaired by Phil Whitehead. All of the editorial comments were accepted, as was the simple technical comment. The compound technical comment was accepted with modifications. I can certify that the originator of the compound technical comment accepts these resolutions. The full details are attached to this letter.

At this time, we are initiating a ten-day recirculation of these comments and resolutions.

Please take this opportunity to review this package. You need not reply; if you do not, your current vote will stand. Based on these comment resolutions, you may change your vote or submit additional comments. If you wish to do so, please keep the deadline in mind. Instructions have been provided by the IEEE Balloting Center.

Sincerely,

A handwritten signature in black ink that reads "Roger".

Roger Marks

cc: Jim Carlo, Chair, IEEE 802

**Comments received on P802.16.2, along with resolutions of ballot resolution committee:**

(1) From: Walter C. Roehr

Type: Editorial

Comment: Heading on last column of Table 13, page 68 should read "6 dB" (without the degree symbol)

Suggested Remedy: delete the degree symbol

Response of ballot resolution group: Accepted (change already incorporated in Comment 3)

(2) From: Walter C. Roehr

Type: Technical

Comment: comment (remove degree symbol from heading of last column of Table 13) submitted previously

Suggested Remedy:

Response of ballot resolution group: Accepted (change already incorporated in Comment 3)

(3) From: Roger B. Marks

Type: Editorial

Comment: This is a compound editorial comment. Details are in Document IEEE 802.16c-01/06, which is available at:

<[http://iee802.org/16/docs/01/80216c-01\\_06.pdf](http://iee802.org/16/docs/01/80216c-01_06.pdf)>

Suggested Remedy:

Response of ballot resolution group: Accepted

Note: The document is available for inspection at the URL cited.

(4) From: Roger B. Marks

Type: Technical

Comment: This is a compound technical comment. Details are in Document IEEE 802.16c-01/07, which is available at:

<[http://iee802.org/16/docs/01/80216c-01\\_07.pdf](http://iee802.org/16/docs/01/80216c-01_07.pdf)>

Suggested Remedy:

Response of ballot resolution group: Accepted, with modifications and clarifications as shown in attachment.

Reaction of voter: Accepts the resolutions.

**Details of Comment 4 (submitted by Roger Marks), with resolutions**

[Note: each element in Comment 4 is cited below by the comment number used in the submission, followed by the quoted page number, line number, and section.]

**M01 68 13 8.1.7**

**Change:**

Table 13, column 5 heading to “Spacing at which simulation results have shown the interference to be generally below target level” with a note following the table regarding the target level and the range of possibilities.

The Note should read: “While the target level of interference is generally referenced to a level which is 6dB below the receiver noise floor, in many scenarios the acceptability of the spacing guideline requires assessment of the results of a statistical analysis and the acceptability of a small percentage of instances when this target level is exceeded.”

**Reason:**

The current proposal is misleading because in some cases the spacing guidelines do not always ensure interference below the target “6dB below noise floor”.

**Resolution:** Accept

**M02 35 4 5.3.1.3.2**

**Change:**

In Figure 6, change “Hub” to “BS”

**Reason:**

Consistency with text

**Resolution:** Accept

**M03 37 24 6.1.1**

**Change:**

delete quotation marks around “Carrier Bandwidth”, or add a definition

**Reason:**

“Carrier Bandwidth” appears in quotation marks. This suggests that there is something unusual about the use of the term. If so, that use should be defined.

**Resolution:** Accept: delete quotation marks around “Carrier Bandwidth”

**M04 38 13**

**Change:**

6.1.1.1 In view of the Note, add the following (with correct citations) to the normative references:

- \* ITU-R Document 9/2 (currently in bibliography)
- \* Addendum 1 to Document 9/2
- \* RR Article S21
- \* Recommendation ITU-R F.1336
- \* Recommendation ITU-R SA.1276

**Reason:**

This note seems to be a recommendation; it uses the word “should”. If so, then the references on which it is based need to be normative.

**Resolution:** Accept/modified. Resolution:

-Replace from the beginning of line 13 of Page 38 to Line 6 of Page 39 with the following:

“For the specific sub-band 25.25–25.75 GHz, the recommended BS EIRP spectral limits as stated in ITU-R Recommendation 9/2 should be observed.”

-Move the citation of ITU-R Recommendation 9/2 from Bibliography to References. Correct the citation as necessary to reflect the most recent publicly-available edition.

**M05 40 6 6.1.1.4**

***Change:***

Rewrite the sentence “When point-to-point IILSs are employed, if the recommendations for SS EIRP and unwanted emissions provided in Sections 6.1.1.2 and 6.1.3, respectively, are followed, the coexistence environment described elsewhere in this Recommended Practice should apply.” to reflect its intent.

Perhaps: “Coexistence issues related to point-to-point in-band inter-cell link stations should be subject to the recommendations of 6.1.1.2.”

Delete the abbreviation “IILS” from the abbreviation list, the header, and the paragraph.

***Reason:***

I don't understand the sentence. One problem here is the casual use of the critical word “should”.

***Resolution:*** Accept/modified. Resolution:

Rewrite the paragraph starting at line 6 as follows:

“An operator may employ point to point links that use adjacent channel or co-channel frequencies and that are in the same geographical area as a point to multipoint system. If the recommendations for SS EIRP in 6.1.1.2 and unwanted emissions in 6.1.3 are applied to these links, then they can operate within the coexistence framework described in this document. If not, then re-evaluation of the coexistence recommendations is recommended.”

Delete the abbreviation “IILS” from the abbreviation list, the header, and the paragraph

**M06 41 31 6.1.3**

***Change:***

Rewrite the sentence “Several transmitters into a common non-active antenna cannot use the multi-carrier mask for the composite signal. In this case, the appropriate mask applies to the individual transmitter.” to reflect its intent.

Perhaps: “When several transmitters share a passive antenna, each transmitter should satisfy the individual mask; the multi-carrier mask should not be applied in this case.”

***Reason:***

I don't understand the sentence.

***Resolution:*** Accept modification as proposed.

**M07 43 8**

***Change:***

6.1.3 If, in ETSI territory, the recommendations of 6.1.3 are supposed to be superceded by those in [13], then:

(a) [13] should be moved to the normative references

(b) the note should be rewritten, because the relevant comparison is not of [13] to [14] but [13] to the recommendations of 6.1.3.

Also, “within Europe” should be replaced by something like “Within areas subject to regulation tied to ETSI standards” (or a more accurate version of this).

***Reason:***

This note:

“NOTE Unwanted emission in Europe

Within Europe the ETSI limits of EN 301 390 [13] should be applied which has limits that are 10 dB more stringent than CEPT/ERC Recommendation 74-01 [14] for noise-like emissions over 10 certain frequency bands.”

seems to mean that, in ETSI territory, the recommendations of 6.1.3 are superceded by those in [13]

**Resolution:** Accept/modified. Resolution:

- Move [13] from the (informative) Bibliography to the (normative) References
- Change Line 8 of Page 43 to “Unwanted Emission Levels Specified in ETSI Standards”
- Replace Lines 9-11 of Page 43 with “In regions where they apply, the ETSI limits of EN 301 390 [B13] should be followed.”
- On line 13, delete “NOTE-“ from the beginning of the sentence

**M08 44 3 6.1.3**

**Change:**

Rewrite the sentence “allowance is given for no more than 10 discrete (CW) spurious emissions which are permitted to exceed the limit up to -30 dBm”

to reflect its intent. I have tried to suggest an alternative, but I can't because I simply don't understand it.

**Reason:**

I don't understand the sentence.

**Resolution:** Accept/modified. Resolution:

- On Line 3 of Page 44, replace “permitted” with “each permitted”

**M09 44 9 6.1.3**

**Change:**

Change abbreviation of “CS” (for “channel separation”) in Figs. 9-10 to something else. “S” would be fine.

Delete footnotes in Fig 9-10.

Modify abbreviation of “CS” in abbreviation list (p. 18)

**Reason:**

“CS” is already used for “Central Station” and needs to remain that way due to reference to work of other bodies in Annex D.

This double usage is needlessly confusing. The Figures are in vector graphics and can easily be edited. No body text need be changed.

**Resolution:** Reject. Explanation: The figures are used by permission of ETSI and should not be altered. The abbreviation is commonly used in ITU.

**M10 58 17 6.3.1.3**

**Change:**

Rewrite the sentence: “Simulation results described in other sections of this document indicate that limiting co-channel interference impairments will likely occur as the result of some-one major interference conflict.”

to reflect its intent. I have tried to suggest an alternative, but I can't because I simply don't understand it.

**Reason:**

I don't understand the sentence.

**Resolution:** Accept/modified. Resolution:

- On Lines 17-18 of Page 58, replace sentence with “From the simulation results described in other sections of this document, it has been found that some single interference coupling is usually dominant when worst case interference levels are examined”.

**M11 60 2 6.3.2**

**Change:**

Rewrite: “Where coordination between the victim and interfering operators is possible, the occasions where this kind of interference is experienced may be reduced.”

2001-04-17

IEEE 802.16-01/21

I suggest, "Coordination between operators will reduce the likelihood of this kind of interference." [provided that this matches the intent.]

**Reason:**

I don't understand the sentence.

**Resolution:** Accept

**M12 69 24 8.1.8**

**Change:**

Rewrite the sentence: "It is concluded that, although many results are improved by use of more tightly specified antennas, the absolute value (probability of interference) tends to be quite low with all the antennas considered."

to reflect its intent. I have tried to suggest an alternative, but I can't because I simply don't understand it. I suggest deleting "absolute value," because that is particularly mysterious.

**Reason:**

I don't understand the sentence.

**Resolution:** Accept/modified. Resolution:

-Replace the two sentences from Lines 23 to 26 on Page 69 with:

"In particular, simulations have been completed using data for antennas with a range of RPEs. While many of the simulation results show improvement with the use of antennas with enhanced RPEs, the relative value of the performance improvement was found to be modest for all of the antennas considered."

**M13 73 38 9.4**

**Change:**

Delete the paragraph on lines 38-40.

**Reason:**

This paragraph is inconsistent with 5.3.1.3.1, Case B, which says: "Note that downstream power control from BS transmitters is usually not employed, as the BS signal is received by a variety of SSs, both near and far, and power control would tend to create an imbalance in the level of signals seen from adjacent sectors."

It is also inconsistent with the statement in 6.1.1.6 that "This Practice assumes that no downstream power control is employed." If someone follows the suggestion in 9.4, then they will be in violation of the assumptions of the Recommended

**Resolution:** Accept

**M14 76 17 9.10**

**Change:**

Delete subclause 9.10.

Alternately, decide the topic of the subclause and whether emissions are part of it. Explain the topic in the opening paragraph of the subclause. If appropriate, delete the reference to emission in 9.10.2. Explain in Proposal 3 whether the references refer to emission or immunity. I don't understand the topic of 9.10. The opening paragraph seems to describe the problem of interference with a BWA system. However, 9.10.2 introduces BWA emissions as a topic. It also speaks of "regulatory requirements," which I assume are mainly on emissions (but it also refers to "stringent requirements for immunity stated in many regulatory requirements"; I don't understand). Are emissions addressed in any of the proposals? I don't see them anywhere, although they might be in the references cited in Proposal 3.

**Reason:**

What is the problem this subclause is solving?

**Resolution:** Accept/modified. Resolution:

Make the following changes:

- Delete subclause 9.10.
- Delete “EMC” and “EMI” from abbreviation list
- Delete second paragraph of Subclause 4.1 (this paragraph introduces 4.1)

**M15 76 29 9.10**

***Change:***

Replace the word “Proposal” with the word “Technique” for the six items labeled as “Proposals” in 9.10.1 and 9.10.2. This corresponds to the word “technique” used in the introductory paragraph to 9.10.

***Reason:***

The use of the word “Proposal” is ambiguous. The purpose of a Recommended Practice is to state what “should” be done, not to list “proposals” for what should be done.

***Resolution:*** Superseded by Resolution of Comment 14.

**M16 76 34 9.10.1**

***Change:***

Change the statement:

“It has been considered that grounding the coax cable every 50 feet will mitigate voltage potential differences.”

to say something specific, such as “Coax cables should be grounded every 50 feet to mitigate voltage potential differences.”  
Alternatively, delete the sentence.

***Reason:***

The intent of this statement is impossible to decipher. Is this a recommendation, or is it not? If not, do you need it?

***Resolution:*** Superseded by Resolution of Comment 14.

**M17 76 40 9.10.2**

***Change:***

Change first paragraph of 9.10.2 to “Human-generated EMI effects can be avoided by good design.”

***Reason:***

Line 40, refers to “the product”; this is repeated on Page 77 (Lines 2, 6, and 17). What product is this? The document as a whole refers not to products but to behaviors of operators. If the concept of products is suddenly introduced, there is an obligation to explain. It would be easier and more effective to delete most of the words.

***Resolution:*** Superseded by Resolution of Comment 14.

**M18 77 6 9.10.2**

***Change:***

Add to Clause 2 the following, with the correct citation format:

\*“ETSI standard EN 300 385 (new number EN 301 489-4) ‘ EMC standard for fixed radio links and ancillary equipment’

\*Bellcore GR-1089-CORE ‘ Electromagnetic Compatibility and Electrical Safety – Generic Criteria for Network Telecommunications Equipment ’

***Reason:***

Proposal 3 is a serious recommendation, since it uses the word “should”. The “should” refers to the recommendation to follow two standards. If the intent is really to make this recommendation, then the two standards should be cited in the normative reference list (Clause 2). [Right now, they aren't even in the Bibliography.]

***Resolution:*** Superseded by Resolution of Comment 14.

**M19 77 6 9.10.2**

2001-04-17

IEEE 802.16-01/21

**Change:**

Change “The product” to “The system”

**Reason:**

I don't know what “the product” is, but this document is supposed to apply to the operation of a system.

**Resolution:** Superseded by Resolution of Comment 14.

**M20 77 13 9.10.2**

**Change:**

Delete Proposal 4.

**Reason:**

I cannot understand the meaning of Proposal 4: “In a fixed BWA inter-system environment, the system many have to be located at a minimum distance from the other operator's equipment, to reduce interference to an acceptable level.” In any case, the issue of inter-system interference is dealt with at great length elsewhere in the draft. This cursory reference to the issue here trivializes the entire matter.

**Resolution:** Superseded by Resolution of Comment 14.

**M21 77 17 9.10.2**

**Change:**

Change “The product” to “The system”

**Reason:**

I don't know what “the product” is, but this document is supposed to apply to the operation a system.

**Resolution:** Superseded by Resolution of Comment 14.

**M22 77 18 9.10.2**

**Change:**

Change “interference with” to “interference from”

**Reason:**

To clarify that the issue is BWA system immunity, not BWA system emissions.

**Resolution:** Superseded by Resolution of Comment 14.

**M23 90 6 Annex C**

**Change:**

Add captions to captionless figures in Annex C:

C.3: Layout Model

C.4: Victim CS

C.5: Worst-Case Interference

C.6: Subscriber-to-subscriber (TS-to-TS), same area, adjacent channel, TDD only

C.8: Simulation Geometry

C.9: Mesh to PMP CS, co-channel, adjacent area

**Reason:**

All figures should have captions.

**Resolution:** Accept/ modified

Make changes as proposed except for C.5 . Change the C.5 text to “C.5: Worst-Case Interference” (spelling correction)

2001-04-17

IEEE 802.16-01/21

**M24 102 1 Annex C**

***Change:***

Add caption to captionless Table C.1 in Annex C:

C.1: Simulation Results

***Reason:***

All tables should have captions.

***Resolution:*** Accept

**M25 104 1 Annex D**

***Change:***

Add caption to captionless Table D.1 in Annex D:

D.1: Interference Classes

***Reason:***

All tables should have captions.

***Resolution:*** Accept

**M26 120 Annex G**

***Change:***

Move References 16, 21, 22, 26, 27, 28, and 29 to the end of the bibliography.

Preface that section with the statement:

“The following documents, while not directly referenced in the text, are related and may be helpful to the reader.”

***Reason:***

These references are not cited in the text

***Resolution:*** Accept