# IEEE 802.16 Letter Ballot #2 Results

Document Number:

IEEE 802.16-00/29

Date Submitted:

2000-12-28

Source:


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Abstract:

This documents reports the results of IEEE 802.16 Letter Ballot #2 ("To approve Document IEEE 802.16.2/D1-2000 and forward it for Sponsor Ballot"). The ballot passed, subject to comment resolution and recirculation.

# IEEE 802.16 Letter Ballot #2: To approve Document IEEE 802.16.2/D1-2000 and forward it for Sponsor Ballot

## 2000-11-17 to 2000-12-27 Voting Report: 2000/12/28

| Approve | Approval Ratio | Abstain | Return Ratio | Motion Approved |
|---|---|---|---|---|
| 69 | 94.5% | 10 | 61.9% | Yes |

| Disapprove | Condition Met | Ballots | Condition Met |
|---|---|---|---|
| 4 | Yes | 83 | Yes |

| Votes | Member Total |
|---|---|
| 73 | 134 |

| Voter # | Last Name | First Name | Vote |
|---|---|---|---|
| 1 | An | Song | Abstain for lack of time |
| 2 | Arefi | Reza | Approve with no comments |
| 3 | Arrakoski | Jori | Approve with no comments |
| 4 | Arunachalam | Arun V. | Approve with no comments |
| 5 | Avivi | Eli | Approve with no comments |
| 6 | Baragar | Ian | Approve with no comments |
| 7 | Baugh | C. R. | Approve with no comments |
| 8 | Belfiore | Carlos | Approve with no comments |
| 9 | Benyamin-Seeyar | Anader | Approve with no comments |
| 10 | Bilotta | Tom | Abstain for lack of time |
| 11 | Buskila | Baruch | Approve with no comments |
| 12 | Chang | Dean | Approve with no comments |
| 13 | Chayat | Naftali | Approve with no comments |
| 14 | Chayer | Rémi | Approve with no comments |
| 15 | Condie | Mary | Abstain for lack of technical expertise |
| 16 | Costa | Jose | Approve with non-binding comments |

| Voter # | Last Name | First Name | Vote |
|---|---|---|---|
| 17 | Currivan | Bruce | Approve with no comments |
| 18 | Dotan | Amos | Approve with no comments |
| 19 | Eidson | Brian | Approve with no comments |
| 20 | Eklund | Carl | Approve with no comments |
| 21 | Falconer | David | Approve with no comments |
| 22 | Fishel | George | Approve with non-binding comments |
| 23 | Florea | Adrian | Disapprove with binding comments |
| 24 | Foster | Robert | Approve with no comments |
| 25 | Freedman | Avraham | Approve with non-binding comments |
| 26 | Garrison | G. Jack | Approve with no comments |
| 27 | Germon | Richard | Disapprove with binding comments |
| 28 | Guillemette | Phil | Abstain for lack of time |
| 29 | Hadad | Zion | Approve with no comments |
| 30 | Halachmi | Baruch | Abstain for lack of technical expertise |
| 31 | Hamilton | Michael | Approve with non-binding comments |
| 32 | Hosur | Srinath | Approve with no comments |
| 33 | Hum | Coleman | Approve with no comments |
| 34 | Hunter | Wayne | Approve with no comments |
| 35 | Jacobsen | Eric | Approve with no comments |
| 36 | Jamali | Hamadi | Approve with no comments |
| 37 | Jorgensen | Jacob | Approve with no comments |
| 38 | Kang | Inchul | Approve with no comments |
| 39 | Kasslin | Mika | Abstain for lack of time |
| 40 | Kiernan | Brian | Approve with no comments |

| Voter # | Last Name | First Name | Vote |
|---|---|---|---|
| 41 | Kitroser | Itzik | Abstain for lack of technical expertise |
| 42 | Klein | Allan | Approve with no comments |
| 43 | Klein | Jay | Approve with no comments |
| 44 | Kolze | Tom | Abstain for other reasons |

Abstain for other reasons:

I have the technical ability to understand and evaluate the issues at play, but did not participate in Task Group 2 except in a cursory manner. I am not such an expert in this regulation-intense field that I can pick up the document and in isolation intepret, analyze, and correct it (should such corrections be in order) at this point in my career. [Does this mean I abstain for "lack of technical expertise?" I would not use this description, but perhaps that is Roger Marks' use and interpretation of the language.] Should particular issues arise, I could become more fully involved and participate as an expert. I have no objections or corrections to make for the document at this time, but do not feel technically able to vote its approval. I fully reserve my right to support objections and comments that may arise as the result of this process.

| | | | |
|---|---|---|---|
| 45 | Kostas | Demosthenes | Approve with no comments |
| 46 | Langley | John | Approve with no comments |
| 47 | Leiba | Yigal | Approve with no comments |
| 48 | Lewis | Barry | Disapprove with binding comments |
| 49 | Liebetreu | John | Approve with no comments |
| 50 | Lindh | Lars | Approve with non-binding comments |
| 51 | Lucas | Fred | Approve with no comments |
| 52 | Marin | Scott | Approve with no comments |
| 53 | Marks | Roger | Approve with non-binding comments |
| 54 | McGregor | Andy | Approve with no comments |
| 55 | Meyer | Ronald | Approve with no comments |
| 56 | Middleton | Andrew | Approve with no comments |
| 57 | Monk | Anton | Approve with no comments |
| 58 | Myers | William | Approve with no comments |
| 59 | Padan | Uzi | Approve with no comments |

| Voter # | Last Name | First Name | Vote |
|---|---|---|---|
| 60 | Park | Yunsang | Approve with no comments |
| 61 | Petry | Brian | Approve with no comments |
| 62 | Petry | Brian | Approve with no comments |
| 63 | Ran | Moshe | Approve with non-binding comments |
| 64 | Reible | Stanley | Approve with no comments |
| 65 | Resheff | Guy | Approve with no comments |
| 66 | Ribner | David | Approve with no comments |
| 67 | Robinson | Eugene | Approve with no comments |
| 68 | Roehr | Walt | Disapprove with binding comments |
| 69 | Satapathy | Durga | Approve with non-binding comments |
| 70 | Sater | Glen | Approve with no comments |
| 71 | Scaringi | Vito | Approve with no comments |
| 72 | Schafer | David | Approve with no comments |
| 73 | Shahar | Menashe | Approve with no comments |
| 74 | Shirali | Chet | Approve with no comments |
| 75 | Stamatelos | George | Approve with no comments |
| 76 | Stanwood | Ken | Abstain for lack of time |
| 77 | Thompson | Paul | Approve with no comments |
| 78 | Trinkwon | David | Abstain for lack of technical expertise |
| 79 | van Waes | Nico | Approve with no comments |
| 80 | Wachira | Muya | Approve with no comments |
| 81 | Whitehead | Philip | Approve with non-binding comments |
| 82 | Zeng | Chaoming | Approve with no comments |
| 83 | Zuniga | Juan-Carlos | Approve with no comments |

# IEEE 802.16 Letter Ballot #2: Nonparticipating Members
## (Letter Ballots not returned, or returned with abstention other than "lack of technical expertise")

| | |
|---|---|
| Aboukarr | Bakri |
| Abu-Dayya | Adnan |
| Akhter | Mohammad |
| An | Song |
| Baldo | Paolo |
| Baseghi | Behshad |
| Bilotta | Thomas |
| Boucher | Luc |
| Bushue | Carl |
| Cornelius | James |
| Doherty | Edward |
| Doucet | Keith |
| Durand | Roger |
| Evans | Allan |
| Foerster | Jeffrey |
| Goldhammer | Marianna |
| Grell | Conrad |
| Guillemette | Phil |
| Gupta | Rakesh |
| Hammons, Jr. | A. Roger |
| Hatim | Baya |
| Jevremovic | Vladan |
| Kasslin | Mika |
| Khanna | Amarpal |
| Kim | John |
| Kolze | Thomas |

| Last Name | First Name |
|---|---|
| Kwak | Byung-Jae |
| Langston | J. Leland |
| Lazaris-Brunner | Ken |
| Licardie | Sergio |
| Lu | Willie |
| McCann | Shawn |
| Mody | Apurva |
| Moghe | Sanjay |
| Mollenauer | James |
| Nadiv | Ron |
| Ohmoto | Ryutaro |
| Olsen | Louis |
| Pleasant | Wayne |
| Quinn | Patrick |
| Rhodes | Valentine |
| Sanders | Ray |
| Schwartz | Randall |
| Stambaugh | Karl |
| Stanwood | Ken |
| Stewart | Michael |
| Struhsaker | Paul |
| Tateishi | Kimiya |
| Thomas | Raymond |
| Van der Star | Jack |
| Varma | Subir |
| Wang | Chao-Chun |
| Ward | Robert |

| Last Name | First Name |
| --- | --- |
| Williams | David |
| Winslow | Steve |
| Ye | Huanchun |
| Yee | Jung |
| Yurtkuran | Erol |
| Zhang | Wei |

# IEEE 802.16 Letter Ballot #2 (2000-11-17 to 2000-12-27) Comment Report: 2000-12-28

**Comment #** 1 | Roger | Marks | Member

**Type** Editorial | **Starting Page Number** | **Starting Line Number** | **Section** Global

**Change**

Change "Mbps" to "Mbit/s

**Reason**

Correct international unit usage.

**Comment #** 2 | Roger | Marks | Member

**Type** Editorial | **Starting Page Number** | **Starting Line Number** | **Section** Global

**Change**

Subscript the "o" in "Bo" globally.

**Reason**

Consistency and editorial improvement.

# IEEE 802.16 Letter Ballot #2 (2000-11-17 to 2000-12-27) Comment Report: 2000-12-28

**Comment #** 3 | Roger | Marks | Member

**Type** Editorial | **Starting Page Number** | **Starting Line Number** | **Section** Global

**Change**

Make the following global changes:

"Base Transceiver Station" to "Base Station"
"Subscriber Transceiver Station" to "Subscriber Station"
"BTS" to "BS"
"STS" to "SS"
"CS" to "BS"
"Hub" to "BS"
"Sub" to "SS" {only when referring to Subscriber Station}
"TS" to "SS"
"RPTS" to "RS"
"RTS" to "RS"
"BTS/Central Station (CS)" to "BS"
"BTS/CS" to "BS"

Accordingly:

Change Definition 3.1.3 to "base station (BS)"
Change Definition 3.1.31 to "subscriber station (SS)"

and delete these Acronyms: CS, RTS, RPTS, TS.

**Reason**

Simplification, clarity, self-consistency, and consistency with 802.16.1.

# IEEE 802.16 Letter Ballot #2 (2000-11-17 to 2000-12-27) Comment Report: 2000-12-28

**Comment #** 4 | Roger | Marks | Member

**Type** Editorial | **Starting Page Number** | **Starting Line Number** | **Section** Global

**Change**

Change "co-existence" to "coexistence" globally

**Reason**

consistency of spelling

**Comment #** 5 | Roger | Marks | Member

**Type** Editorial | **Starting Page Number** | **Starting Line Number** | **Section** Global

**Change**

Chage "co-ordination" to "coordination" everywhere.

**Reason**

consistency of spelling

# IEEE 802.16 Letter Ballot #2 (2000-11-17 to 2000-12-27) Comment Report: 2000-12-28

**Comment #** 6 | Roger | Marks | Member

**Type** Editorial **Starting Page Number** 1 **Starting Line Number** 5 **Section** Title

**Change**

Change title from:

Recommended Practice for Coexistence of Broadband Wireless Access Systems

to:

Recommended Practice for Coexistence of Fixed Broadband Wireless Access Systems

Need to also update Page 2, Lines 2 and 3.

**Reason**

More accurate title will reduce confusion among potential users.

Either the current title or this proposed revised title will require a PAR change, since the current PAR title is:

Telecommunications and Information Exchange Between Systems - LAN/MAN Specific Requirements - Coexistence of Broadband Wireless Access Systems

# IEEE 802.16 Letter Ballot #2 (2000-11-17 to 2000-12-27) Comment Report: 2000-12-28

**Comment #** 7 | Roger | Marks | Member

**Type** Editorial **Starting Page Number** 1 **Starting Line Number** 9 **Section** Title Page

**Change**

Delete sentence on Lines 9 and 10; replace with:

Sponsor
LAN MAN Standards Committee
of the
IEEE Computer Society

**Reason**

IEEE format.

**Comment #** 8 | Roger | Marks | Member

**Type** Editorial **Starting Page Number** 1 **Starting Line Number** 11 **Section** Title Page

**Change**

Add Abstract and Keywords. As as starting point, the Abstract can be developed from Lines 10-14 of Page 2:

This Recommended Practice provides guidelines for minimizing interference in fixed broadband wireless access systems. Pertinent coexistence issues are addressed, and recommended engineering practices provide guidance for system design, deployment, coordination, and frequency usage. This document covers frequencies of 10-66 GHz in general,but it is focused on 23.5-43.5 GHz. If followed by manufacturers and operators, it should allow a wide range of equipment to coexist in a shared environment with acceptable mutual interference.

**Reason**

IEEE format.

# IEEE 802.16 Letter Ballot #2 (2000-11-17 to 2000-12-27) Comment Report: 2000-12-28

**Comment #** 9 | Roger | Marks | Member

**Type** Editorial **Starting Page Number** 2 **Starting Line Number** 6 **Section** Intro

**Change**

Delete Lines 6-8.

**Reason**

Unnecessary and unimportant.

**Comment #** 10 | Roger | Marks | Member

**Type** Editorial **Starting Page Number** 2 **Starting Line Number** 13 **Section** 1

**Change**

Change lines 10-17 to:

This Recommended Practice provides guidelines for minimizing interference in fixed broadband wireless access systems. Pertinent coexistence issues are addressed, and recommended engineering practices provide guidance for system design, deployment, coordination, and frequency usage. This document covers frequencies of 10-66 GHz in general,but it is focused on 23.5-43.5 GHz. If followed by manufacturers and operators, it should allow a wide range of equipment to coexist in a shared environment with acceptable mutual interference.

**Reason**

Editorial clarity.

# IEEE 802.16 Letter Ballot #2 (2000-11-17 to 2000-12-27) Comment Report: 2000-12-28

**Comment #** 11 | Roger | Marks | Member

**Type** Editorial **Starting Page Number** 3 **Starting Line Number** 4 **Section** Participants

**Change**

Replace Lines 4-5 with:

This document was developed by the IEEE 802.16 Working Group on Broadband Wireless Access, which is responsible for Wireless Metropolitan Area Network (WirelessMAN[TM]) Standards and Recommended Practices.

At the time the draft of this standard passed Working Group Letter Ballot, the IEEE 802.16 Working Group on Broadband Wireless Access had the following Officers:

Roger Marks, 802.16 Chair
Brian Kiernan, 802.16 Vice Chair
J. Scott Marin, 802.16 Secretary

Louis Olsen served as Vice Chair during the initial development of this document, until September 2000.

At the time the draft of this standard passed Working Group Letter Ballot, the IEEE 802.16 Working Group on Broadband Wireless Access had the following members:

**Reason**

IEEE format.

# IEEE 802.16 Letter Ballot #2 (2000-11-17 to 2000-12-27) Comment Report: 2000-12-28

**Comment #** 12 | Roger | Marks | Member

**Type** Editorial **Starting Page Number** 4 **Starting Line Number** 3 **Section** Acknowledgments

**Change**

Move this section to before the "Participants" section. Insert the following text:

This document was developed by the IEEE 802.16 Working Group on Broadband Wireless Access, primarily by its Task Group 2. At the time the draft of this standard passed Working Group Letter Ballot, the leaders of Task Group 2 were:

Philip Whitehead, Task Group 2 Chair
Rémi Chayer, Task Group 2 Vice Chair

J. Leland Langston was the original Task Group 2 Chair, from May 1999 until July 2000. Subsequently, Andy McGregor served as Task Group 2 Chair until November 2000.

Muya Wachira served as Technical Editor of this document, beginning in January 2001. Earlier, Vito Scaringi had served as Technical Editor, bringing the document to its first Working Group Letter Ballot. Yet earlier, Rebecca Chan served as Technical Editor.

**Reason**

Acknowledgement of leaders.

**Comment #** 13 | Roger | Marks | Member

**Type** Editorial **Starting Page Number** 5 **Starting Line Number** 1 **Section** Contents

**Change**

Change "Table of Contents" to "Contents".

**Reason**

IEEE format.

# IEEE 802.16 Letter Ballot #2 (2000-11-17 to 2000-12-27) Comment Report: 2000-12-28

**Comment #** 14 | Barry | Lewis | Member

**Type** Technical, Binding **Starting Page Number** 10 **Starting Line Number** 28 **Section** 1.1

**Change**

Insert the following second sentence: "The recommendations have been developed and substantiated by analysis and simulations specific to the deployment and propagation environment appropriate to terrestrial BWA inter-system interference experienced between operators licensed for BWA.. "

**Reason**

To reinforce the basis of the Recommendations and ensure that the context of the work is not open to mis-interpretation.

**Comment #** 15 | Barry | Lewis | Member

**Type** Editorial **Starting Page Number** 10 **Starting Line Number** 43 **Section** 1.1

**Change**

Delete the existing final sentence.

**Reason**

The document was based on considerable input from sources other than just 802.16.1.

**Comment #** 16 | Roger | Marks | Member

**Type** Editorial **Starting Page Number** 10 **Starting Line Number** 43 **Section** 1.1

**Change**

Change sentence in Lines 43-44 to:

This document was developed specifically to address IEEE 802.16 sytems but is intended to be generally applicable to a wide range of broadband wireless systems.

**Reason**

Editorial; and generalizes the identifier "802.16.1".

# IEEE 802.16 Letter Ballot #2 (2000-11-17 to 2000-12-27) Comment Report: 2000-12-28

**Comment #** 17 | Jose | Costa | Member

**Type** Editorial **Starting Page Number** 11 **Starting Line Number** 16 **Section** 3.1

**Change**

The terms and definitions in this section should be compared with those in Recommendation ITU-R F.1399 "Vocabulary of terms for wireless access" and when the same term is in both, the definition from the ITU-R Recommendation should be used as far as possible. The definitions of "wireless access" and "fixed wireless access" and possibly others (e.g., P-MP) should also be included for completeness. See document 802.16l-00/40 for a copy of the latest version of F.1399.

**Reason**

To maintain consistency with global standards.

# IEEE 802.16 Letter Ballot #2 (2000-11-17 to 2000-12-27) Comment Report: 2000-12-28

**Comment #** 18 | Roger | Marks | Member

**Type** Editorial **Starting Page Number** 11 **Starting Line Number** 26 **Section** 3.1

**Change**

Modify definitions to match those used by 802.16.1:

3.1.3 base station (BS): A generalized equipment set providing connectivity, management, and control of the subscriber station.

3.1.31 subscriber station (SS): A generalized equipment set providing connectivity between subscriber equipment and a BS.

3.1.8 downlink: A flow of information that exists in the downstream.

3.1.34 uplink: A flow of information that exists in the upstream.

Also, add two definitions:

3.1.8 downstream: The direction from a BS to the SS.

3.1.34 upstream: The direction from a SS to the BS.

**Reason**

Consistency within 802.16, and completeness.

**Comment #** 19 | Roger | Marks | Member

**Type** Editorial **Starting Page Number** 11 **Starting Line Number** 26 **Section** 3.1

**Change**

set all defined terms in uppercase

**Reason**

self-consistency

# IEEE 802.16 Letter Ballot #2 (2000-11-17 to 2000-12-27) Comment Report: 2000-12-28

**Comment #** 20 | Adrian | Florea | Member

**Type** Technical, Binding **Starting Page Number** 12 **Starting Line Number** 3 **Section** 3.1.6

**Change**

Replace the XPD definition with:
The XPD of an antenna for a given direction is the difference in dB between the peak copolarized gain of the antenna and the cross-polarized gain of the antenna in the given direction.

**Reason**

**Comment #** 21 | Lars | Lindh | Member

**Type** Technical, Non-binding **Starting Page Number** 12 **Starting Line Number** 9 **Section** 3.1.7

**Change**

Change :
"Digital modulation is the process of varying one or more parameters of a carrier wave as a function of two or more finite and discrete states of a signal".

**Reason**

The definition 3.1.7 of digital modulation implies that the state changes of the carrier are discrete which is usually not the case. The modulator is usually driven by filtered signals so the changes are continuous. I propose the following definition which is given in Federal Standard 1037C: "Digital modulation is the process of varying one or more parameters of a carrier wave as a function of two or more finite and discrete states of a signal".

Here the word "function" will take into account any filtering processes and it is not implied that the state of the carrier will change discretely.

**Comment #** 22 | Walt | Roehr | Member

**Type** Editorial **Starting Page Number** 12 **Starting Line Number** 11 **Section** 3.1.7

**Change**

delete "state for"

**Reason**

the carrier is changed, it's state isn't changed.

# IEEE 802.16 Letter Ballot #2 (2000-11-17 to 2000-12-27) Comment Report: 2000-12-28

**Comment #** 23 | Moshe | Ran | Member

**Type** Editorial **Starting Page Number** 12 **Starting Line Number** 29 **Section** 3.1

**Change**

Insertion Frequnecy switched division duplexing (FS-DD) A Duplex scheme where uplink and downlink transmissions accur at different times and different frequncies.

**Reason**

This mode appears in 802.16.1 air interface (MODE B)

**Comment #** 24 | Adrian | Florea | Member

**Type** Technical, Non-binding **Starting Page Number** 12 **Starting Line Number** 41 **Section** 3.1.15

**Change**

Insert: with the purpose to increase the network traffic capacity.

**Reason**

**Comment #** 25 | George | Fishel | Member

**Type** Editorial **Starting Page Number** 13 **Starting Line Number** 9 **Section** 3.1.17

**Change**

Change the" to "that"so sentence reads correctly"

**Reason**

Sentense is not correct as it is.

**Comment #** 26 | Philip | Whitehead | Member

**Type** Technical, Non-binding **Starting Page Number** 13 **Starting Line Number** 27 **Section** 3.1.21

**Change**

Delete "single base station" and replace with "system" on line 27 and delete "of the base station" on line 28.

**Reason**

ITU definition of multipoint is more general and includes both PMP and MP-MP architectures.

# IEEE 802.16 Letter Ballot #2 (2000-11-17 to 2000-12-27) Comment Report: 2000-12-28

**Comment #** 27 | Zev | Bogan | Observer

**Type** Editorial **Starting Page Number** 15 **Starting Line Number** 15 **Section** 3.1.31

**Change**

replace "line of site" with "line of sight"

**Reason**

typo

**Comment #** 28 | Roger | Marks | Member

**Type** Editorial **Starting Page Number** 16 **Starting Line Number** 3 **Section** 3.2

**Change**

Change "AdjCH" to "AdjCh" (Line 3)

Change "CoCH" to "CoCh" (Line 23)

**Reason**

Consistency.

**Comment #** 29 | Jose | Costa | Member

**Type** Editorial **Starting Page Number** 16 **Starting Line Number** 6 **Section** 3.2

**Change**

Replace "rate" by "ratio"

**Reason**

BER is a ratio, not a rate.

# IEEE 802.16 Letter Ballot #2 (2000-11-17 to 2000-12-27) Comment Report: 2000-12-28

**Comment #** 30 | Avraham | Freedman | Member

**Type** Editorial **Starting Page Number** 16 **Starting Line Number** 24 **Section** 3.2

**Change**

Change: "Coherent OFDM" to "Coded OFDM"

**Reason**

COFDM is the acronym for Coded OFDM. All OFDM systems are coherent.

**Comment #** 31 | Avraham | Freedman | Member

**Type** Editorial **Starting Page Number** 16 **Starting Line Number** 28 **Section** 3.2

**Change**

Insert :
(Channel Sepration, in relevant context)

**Reason**

The acronym CS appears as Channel Sepration in p. 42

**Comment #** 32 | Roger | Marks | Member

**Type** Editorial **Starting Page Number** 16 **Starting Line Number** 36 **Section** 3.2

**Change**

Change "ElectroMagnetic" to "ElectroMagnetic" (Lines 36 and 37).

**Reason**

spelling correction

**Comment #** 33 | Avraham | Freedman | Member

**Type** Editorial **Starting Page Number** 17 **Starting Line Number** 7 **Section** 3.2

**Change**

Delete line 7

**Reason**

The acronym ICL appears also in line 4

# IEEE 802.16 Letter Ballot #2 (2000-11-17 to 2000-12-27) Comment Report: 2000-12-28

**Comment #** 34 | Walt | Roehr | Member

**Type** Editorial **Starting Page Number** 17 **Starting Line Number** 7 **Section** 3.2

**Change**

delete line

**Reason**

is un-needed duplication of line 4

**Comment #** 35 | Adrian | Florea | Member

**Type** Editorial **Starting Page Number** 19 **Starting Line Number** 16 **Section** 4.1

**Change**

Remove comma after "and".
Replace : "In reviewing these recommendation it should be understood that this document can not guarantee coexistence "protection", without wasting either spectrum or the opportunity for economical deployments" with : "The practical implementation in the field of the present recommenation will assume that some portion of the frequency spectrum (at the edge of the authorized bandwidth) as well as some parts of the service area can not be used for deployment."

**Reason**

**Comment #** 36 | Avraham | Freedman | Member

**Type** Editorial **Starting Page Number** 19 **Starting Line Number** 27 **Section** 4.1

**Change**

Change "overlaps" to "overlap

**Reason**

English grammer

# IEEE 802.16 Letter Ballot #2 (2000-11-17 to 2000-12-27) Comment Report: 2000-12-28

**Comment #** 37 | Barry | Lewis | Member

**Type** Technical, Binding **Starting Page Number** 19 **Starting Line Number** 31 **Section** 4.1

**Change**

Insert the following paragraph:
"As a starting point for the consideration of tolerable levels of interference into BWA systems, ITU-R Recommendation F.758-2 [29] details two generally accepted values for the interference to thermal noise ratio (I/N) for long term interference into fixed service receivers. When considering interference from other services, it identifies an I/N value of -6dB or -10dB matched to the specific requirements of individual systems. This approach provides a method for defining a tolerable limit that is independent of most characteristics of the victim receivers apart from receiver noise figure and has been adopted for this practice document.

The acceptability of any I/N value needs to be evaluated against the statistical nature of the interference environment and in arriving at the Recommendations in this document this evaluation has been carried out for an I/N value of -6dB."

**Reason**

To provide a useful reference to closely related work in the ITU-R and to help the reader understand the basis of the work undertaken in this document .

**Comment #** 38 | Jose | Costa | Member

**Type** Editorial **Starting Page Number** 19 **Starting Line Number** 40 **Section** 4.1

**Change**

Replace "this document does not find it appropriate" by "it is outside the scope of this document"

**Reason**

Documents do not find anything ("find it appropriate"), authors do.

# IEEE 802.16 Letter Ballot #2 (2000-11-17 to 2000-12-27) Comment Report: 2000-12-28

**Comment #** 39 | Richard | Germon | Member

**Type** Technical, Binding **Starting Page Number** 20 **Starting Line Number** 2 **Section** 4.2

**Change**

Suggest changing line 5
..from the neighboring operators transmitters
to
..from transmissions of operators in neighboring areas

p21 line 43 -p22 lin12 Recommendation 8. Suggest delete or clarify.

**Reason**

Recommendation 1 should clarify that it applies to the co-channel adjacent area scenario (in the same area adj channel scenario some victims will have interference greater than -6dB level due to proximity)._

Recommendtion 8 -no recommendation appears to have been made. It is not clear to me what the recommendation should be__

**Comment #** 40 | Avraham | Freedman | Member

**Type** Technical, Non-binding **Starting Page Number** 20 **Starting Line Number** 12 **Section** 4.2

**Change**

Insert the bullet:
- The very nature of the MP system is that receviers have to accept interference from transmitters of the same system. Although a good practice would be to reduce the intra-system interference level to be well below the thermal noise level (see Recommendation 6 below), it is expected that it would not always be feasible. The actual level of external interference could be in many cases, higher than the limit stated above and still negligible, or comparable to the inter-system interference. Thus, there is some degree of freedom in interference allocation, which could be used to alleviate the coexistence problem.

**Reason**

From the recommendations as they are stated, it could be deduced that the trigger limit stated is an absolute limit which cannot be exceeded. Although in section 4.1 it is stated that intra-system interference is ignored (and rightfully so) they have an effect on coexistence coordination, as later on mentioned briely in section 9.

# IEEE 802.16 Letter Ballot #2 (2000-11-17 to 2000-12-27) Comment Report: 2000-12-28

**Comment #** 41 | Adrian | Florea | Member

**Type** Technical, Binding **Starting Page Number** 20 **Starting Line Number** 34 **Section** 4.2

**Change**

Remove recommendation 3

1. each operator has the target to deploy the most efficioent network, given his network architecture and equipment specs. This will assume using the most agrressive frequency reuse which still achieves the required c/i in all conditions/scenarios. This is in contradiction with the recommendation 3
2. "minimum intrasystem interference" is vague and has no practical meaning

**Reason**

**Comment #** 42 | Walt | Roehr | Member

**Type** Technical, Binding **Starting Page Number** 21 **Starting Line Number** 14 **Section** 4.2

**Change**

This is the first place that the 60 km "guard region" is mentioned. At this location the recommendation actually does have the proper "tone": "If you are 60 km from everyone don't worry about coordination". Better would be: "You had darn well better coordinate with your neighbors or else you are going to have to abandon 60 km at the border." But after some more almost alright words in section 7 we get to Section 8 that does not talk in terms of coordination triggers but (page 63, line 24) "by following these guidelines, satisfactory psfd levels will be achived at system boundries." -- these have become the recommended guidelines. Table 8-1, on page 67 compounds the disaster, with the listing of "Spacing for acceptable Performance".

**Reason**

If this is published as an IEEE802 document you can bet that people selling non-802 radios will geefully pointout to potential customers that the IEEE 802 radios need 60 km of guard space!

# IEEE 802.16 Letter Ballot #2 (2000-11-17 to 2000-12-27) Comment Report: 2000-12-28

**Comment #** 43 | Barry | Lewis | Member

**Type** Editorial **Starting Page Number** 21 **Starting Line Number** 26 **Section** 4.2

**Change**

Insert the following sentence between "..below." and "These values":
"The evaluation point for the trigger exceedance may be at either the victim operators licensed area boundary, the interfering operators boundary or at a defined point in between dependant to some extent on the specific geographic circumstances of the BWA licensing."

**Reason**

The recommendations do not provide information on where to apply the trigger. However section 7 identifies a specific procedure based on one of these options and some annexed alternative co-ordination procedures. All three options in the sentence proposed above are used at various places in the document.

**Comment #** 44 | Barry | Lewis | Member

**Type** Technical, Binding **Starting Page Number** 21 **Starting Line Number** 44 **Section** 4.2

**Change**

Delete "usually"

**Reason**

Strengthens Recommendation 8. The existing text leaves the reader uncertain. The exceptions are adequately covered later in the text.

**Comment #** 45 | Barry | Lewis | Member

**Type** Technical, Binding **Starting Page Number** 22 **Starting Line Number** 7 **Section** 4.2

**Change**

Insert after "..most cases.." the words "where the transmissions in each block are using the same channel spacing,"

**Reason**

Helps to promote the idea that different guard band widths may be required in different circumstances.

# IEEE 802.16 Letter Ballot #2 (2000-11-17 to 2000-12-27) Comment Report: 2000-12-28

**Comment #** 46 | Barry | Lewis | Member

**Type** Technical, Binding **Starting Page Number** 22 **Starting Line Number** 7 **Section** 4.2

**Change**

Replace the text .."where the transmissions are of different bandwidth, the guard channel should be equal to the wider channel." with "where channel spacings are considerably different across the frequency block boundary, then one equivalent guard channel may be necessary at the edge of each operator's block."

**Reason**

The current text is not consistent with section 8.1.10.1.

**Comment #** 47 | Philip | Whitehead | Member

**Type** Editorial **Starting Page Number** 24 **Starting Line Number** 16 **Section** 4.3

**Change**

Make System plural ; "Systems"

**Reason**

Correction of English

**Comment #** 48 | Barry | Lewis | Member

**Type** Technical, Non-binding **Starting Page Number** 24 **Starting Line Number** 22 **Section** 4.3

**Change**

In Table 4-1, 3rd column add the words "without co-ordination" to the column heading.

**Reason**

Clarifies the meaning of the parameter values in this column.

# IEEE 802.16 Letter Ballot #2 (2000-11-17 to 2000-12-27) Comment Report: 2000-12-28

**Comment #** 49 | Barry | Lewis | Member

**Type** Technical, Binding **Starting Page Number** 24 **Starting Line Number** 22 **Section** 4.3

**Change**

In Table 4-1, replace "[54km]" with "60km".

**Reason**

Square brackets should be removed and 54km is inconsistent with Table 8-1, Pg 67.

**Comment #** 50 | Barry | Lewis | Member

**Type** Technical, Binding **Starting Page Number** 24 **Starting Line Number** 22 **Section** 4.3

**Change**

In Table 4-1, third column, add "(note 5)" after "CS-CS" in the row referring to PMP hub to PMP hub.

**Reason**

The substance of note 5 applies to this interference path also.

**Comment #** 51 | Walt | Roehr | Member

**Type** Editorial **Starting Page Number** 24 **Starting Line Number** 22 **Section** Table 4-1

**Change**

take out unneeded hard returns in table elements; remove square brackets from 54 km; why mix terminology "hub" in column 1 and "CS" in column 3?

**Reason**

appears that this table was not cleaned up before publication

**Comment #** 52 | Philip | Whitehead | Member

**Type** Editorial **Starting Page Number** 24 **Starting Line Number** 22 **Section** Table 4-1

**Change**

remove square brackets from "[54km]"

**Reason**

Square brackets imply the number is not decided

# IEEE 802.16 Letter Ballot #2 (2000-11-17 to 2000-12-27) Comment Report: 2000-12-28

**Comment #** 53 | Barry | Lewis | Member

**Type** Technical, Binding **Starting Page Number** 25 **Starting Line Number** 6 **Section** 4.3

**Change**

In Note 3 replace the final two sentences with the following; "Where channel spacings are considerably different across the frequency block boundary, analysis suggests that one equivalent guard channel may be necessary at the edge of each operator's block."

**Reason**

Current text is inconsistent with 8.1.10.1

**Comment #** 54 | Barry | Lewis | Member

**Type** Technical, Binding **Starting Page Number** 25 **Starting Line Number** 10 **Section** 4.3

**Change**

In Note 4 replace the final two sentences with the following; "Where channel spacings are considerably different across the frequency block boundary, analysis suggests that one equivalent guard channel may be necessary at the edge of each operator's block."

**Reason**

Current text is inconsistent with 8.1.10.3

# IEEE 802.16 Letter Ballot #2 (2000-11-17 to 2000-12-27) Comment Report: 2000-12-28

**Comment #** 55 | Roger | Marks | Member

**Type** Editorial **Starting Page Number** 26 **Starting Line Number** 3 **Section** 5.1

**Change**

Change the last four sentences to:

Within IEEE, Working Group 802.16 is developing standards for PMP systems with hub stations and end user stations communicating over a fully specified air interface. A similar PMP standard is being developed within the "HIPERACCESS" topic within ETSI Project. Coexistence specifications for MWS (which includes the requirements for HIPERACCESS)have been prepared by the ETSI TM4 committee. In addition, a number of proprietary BWA systems exist for which the air interface is not standardized.

**Reason**

Editorial.

**Comment #** 56 | Walt | Roehr | Member

**Type** Editorial **Starting Page Number** 26 **Starting Line Number** 14 **Section** 5.1.1

**Change**

replace final clause of sentence with "providing up to 360 degrees coverage with one or more antennas."

**Reason**

clarity

**Comment #** 57 | Richard | Germon | Member

**Type** Technical, Binding **Starting Page Number** 26 **Starting Line Number** 30 **Section** 5.1.2

**Change**

Delete sentence
"By providing . . . . . and spectrum Efficiency"

**Reason**

Unsubstantiated claim not relevent to co-existence

# IEEE 802.16 Letter Ballot #2 (2000-11-17 to 2000-12-27) Comment Report: 2000-12-28

**Comment #** 58 | Richard | Germon | Member

**Type** Technical, Non-binding **Starting Page Number** 27 **Starting Line Number** 5 **Section** 5.2

**Change**

Delete lines 5 to 8

**Reason**

Not relevent to co-existence

**Comment #** 59 | Avraham | Freedman | Member

**Type** Editorial **Starting Page Number** 27 **Starting Line Number** 26 **Section** 5.2

**Change**

In figure 1:
Replace "IL" with "ICL"

**Reason**

The acronym ICL is the one used throughout the document

**Comment #** 60 | Avraham | Freedman | Member

**Type** Editorial **Starting Page Number** 27 **Starting Line Number** 26 **Section** 5.2

**Change**

In figure 1:
Add the notation "G" to the interface line on the vertical system boundary as well

**Reason**

The STS also have a "G" interface to TE, not only the RTS

# IEEE 802.16 Letter Ballot #2 (2000-11-17 to 2000-12-27) Comment Report: 2000-12-28

**Comment #** 61 | Walt | Roehr | Member

**Type** Editorial **Starting Page Number** 27 **Starting Line Number** 26 **Section** Figure 1

**Change**

Replace "IL" in figure with "ICL"

**Reason**

ICL is what's in section 3.2

**Comment #** 62 | Zev | Bogan | Observer

**Type** Editorial **Starting Page Number** 30 **Starting Line Number** 16 **Section** 5.3.1.2

**Change**

1. insert "thermal" in "just equals the THERMAL noise floor + the signal tonoise of the receiver"

2. Remove "thermal" from line 19 and line 21. Should read: " The noise floor is.."

3. Adjust noise power density units: either -108dBm/MHz or -138dBW/MHz (line19 twice) line 20 , adjust power density units line 21 , adjust power density units

**Reason**

Needed for clarity. Noise floor definition includes receiver NF. Error in power density units

**Comment #** 63 | Barry | Lewis | Member

**Type** Technical, Binding **Starting Page Number** 30 **Starting Line Number** 19 **Section** 5.3.1.2

**Change**

Change all references to "dBm/MHz" to "dBW/MHz" in four places, lines 19 to 21 inclusive.

**Reason**

Incorrect units.

# IEEE 802.16 Letter Ballot #2 (2000-11-17 to 2000-12-27) Comment Report: 2000-12-28

**Comment #** 64 | Avraham | Freedman | Member

**Type** Editorial **Starting Page Number** 35 **Starting Line Number** 41 **Section** 6.1.1

**Change**

Add references to the reviewed documents mentioned in that line

**Reason**

Completeness

**Comment #** 65 | Avraham | Freedman | Member

**Type** Editorial **Starting Page Number** 36 **Starting Line Number** 10 **Section** 6.1.1

**Change**

Delete the sentence starting with "They are also" ending with " used in simulation" .lines 10-13

**Reason**

The sentence appears twice.

**Comment #** 66 | Walt | Roehr | Member

**Type** Editorial **Starting Page Number** 36 **Starting Line Number** 10 **Section** 6.1.1

**Change**

The font used for figure and table references leaked out here

**Reason**

looks sloppy

**Comment #** 67 | Avraham | Freedman | Member

**Type** Editorial **Starting Page Number** 36 **Starting Line Number** 16 **Section** 6.1.1

**Change**

Change sentence "Table 6-1- Comparison of .. .. .. Compares regulatory limits.. ." to:
"Table 6-1 compares the regulatory limit to those used in simulation"

**Reason**

better readability

# IEEE 802.16 Letter Ballot #2 (2000-11-17 to 2000-12-27) Comment Report: 2000-12-28

**Comment #** 68 | Avraham | Freedman | Member

**Type** Editorial **Starting Page Number** 38 **Starting Line Number** 14 **Section** 6.1.1.2

**Change**

Replace "0" with the right section number.

**Reason**

"0" is probably erronous.

**Comment #** 69 | Walt | Roehr | Member

**Type** Editorial **Starting Page Number** 38 **Starting Line Number** 14 **Section** 6.1.1.2

**Change**

change "Section 0" to proper reference

**Reason**

there is no section 0

**Comment #** 70 | Walt | Roehr | Member

**Type** Editorial **Starting Page Number** 38 **Starting Line Number** 27 **Section** 6.1.1.3

**Change**

Change paranthetical to: "see Section 5.2, System Components"

**Reason**

section 5.2 is where repeaters are discussed

**Comment #** 71 | George | Fishel | Member

**Type** Editorial **Starting Page Number** 39 **Starting Line Number** 8 **Section** 6.1.1.4

**Change**

Remove the words Power Control" from the end of the sentence."

**Reason**

Not needed. Is this the title of the next section?

# IEEE 802.16 Letter Ballot #2 (2000-11-17 to 2000-12-27) Comment Report: 2000-12-28

**Comment #** 72 | Avraham | Freedman | Member

**Type** Editorial **Starting Page Number** 39 **Starting Line Number** 8 **Section** 6.1.1.4

**Change**

Delete "Power Control"

**Reason**

Irrelevant

**Comment #** 73 | Durga | Satapathy | Member

**Type** Editorial **Starting Page Number** 39 **Starting Line Number** 8 **Section** 6.1.1.4

**Change**

Remove the words " Power Control" at end of line 8.

**Reason**

**Comment #** 74 | Avraham | Freedman | Member

**Type** Editorial **Starting Page Number** 39 **Starting Line Number** 20 **Section** 6.1.1.6

**Change**

Change "link" to "links"

**Reason**

In downstream, there are a number of links to be maintained

**Comment #** 75 | Avraham | Freedman | Member

**Type** Editorial **Starting Page Number** 40 **Starting Line Number** 16 **Section** 6.1.3.1

**Change**

Change "see section A.1.2" to "see Annex A, section A.1.2"

**Reason**

Better readability

# IEEE 802.16 Letter Ballot #2 (2000-11-17 to 2000-12-27) Comment Report: 2000-12-28

**Comment #** 76 | Avraham | Freedman | Member

**Type** Technical, Non-binding **Starting Page Number** 42 **Starting Line Number** 7 **Section** 6.1.3.1

**Change**

Change the first three paragraphs after the Note to read as follows
Within Europe, the following is applicable:
1. In frequency range 1, from 10 to 21.2 GHz, CEPT/ERC Recommendation 74-01 applies, which sets a limit -40 dBm/MHz for a Terminal Station , and -50 dBm/MHz for a Central Station
2. In frequency range 2 (as of 21.1 GHz) , ETSI draft EN 301 390 should be apllied (see below).
3. In grequency range 3 (above 43.5 GHz), CEPT/ERC Recommendation 74-01 should be applied, with the limit of -30 dBm/MHz for both TS and CS.
4. Within +/-250% of the channel a specific spectrum mask applies, which should be taken from the appropriate standard documented by ETSI.

**Reason**

For a more complete view of the regulations in Europe, covering all frequency ranges of the Recommended Practices

**Comment #** 77 | Avraham | Freedman | Member

**Type** Editorial **Starting Page Number** 46 **Starting Line Number** 1 **Section** 6.2.2

**Change**

The symbol should be used within the figures and tables, and not the words "alpha", or "beta"

**Reason**

Unlike the voting document which is limited to text only, the draft standard can use Greek letters.

**Comment #** 78 | Zev | Bogan | Observer

**Type** Editorial **Starting Page Number** 52 **Starting Line Number** 9 **Section**

**Change**

insert page break after line 8

**Reason**

move caption to next page

# IEEE 802.16 Letter Ballot #2 (2000-11-17 to 2000-12-27) Comment Report: 2000-12-28

**Comment #** 79 | George | Fishel | Member

**Type** Editorial **Starting Page Number** 53 **Starting Line Number** 10 **Section** 6.1.3

**Change**

Add page break to the bottom of page so the title for Table 6-9 is with the table on page 54.

**Reason**

The title for the table is not with the table.

**Comment #** 80 | Avraham | Freedman | Member

**Type** Editorial **Starting Page Number** 57 **Starting Line Number** 1 **Section** 6.3.1.3

**Change**

Change C/N = 14 dB to C/(I+N) = 14 dB

**Reason**

Better reflects the intent

**Comment #** 81 | Zev | Bogan | Observer

**Type** Technical, Non-binding **Starting Page Number** 58 **Starting Line Number** **Section** 6.3.2.1,6.3.2.2

**Change**

The requirement for C/I adj=0B for intersystem interference contradicts Recommendation#8 which requires a guard band between systems. If there is a guard band there is no need to define adj channel for inter-system interference.

**Reason**

Needs clarification

# IEEE 802.16 Letter Ballot #2 (2000-11-17 to 2000-12-27) Comment Report: 2000-12-28

**Comment #** 82 | Michael | Hamilton | Member

**Type** Editorial **Starting Page Number** 58 **Starting Line Number** 5 **Section** 6.3.2

**Change**

First adjacent channel tolerance is specified, although use of adjacent channel is contrary to Recommendation 8. Second adjacent channel tolerance is not specified.

Propose 0dB tolerance for first adjacent channel should be justified.
Propose 0dB tolerace for second adjacent channel.

**Reason**

Inconistancy between high level recommendation and requirements.

**Comment #** 83 | Barry | Lewis | Member

**Type** Editorial **Starting Page Number** 59 **Starting Line Number** 18 **Section** 7.1.1

**Change**

Change the final sentence to read "In addition to the procedure described below, two alternative co-ordination procedures are described in Annexes E (Based on a different I/N) and F (Based on a two tier psfd approach)."

**Reason**

Provides the reader with a clearer indication that the processes described in the Annexes are alternatives with an indication regarding the basis of the differences.

**Comment #** 84 | George | Fishel | Member

**Type** Editorial **Starting Page Number** 61 **Starting Line Number** 2 **Section** 7.1.2

**Change**

A line or two is needed in Table 7-2

**Reason**

The table is not complete.

# IEEE 802.16 Letter Ballot #2 (2000-11-17 to 2000-12-27) Comment Report: 2000-12-28

**Comment #** 85 | Barry | Lewis | Member

**Type** Editorial **Starting Page Number** 62 **Starting Line Number** 4 **Section** 7.3

**Change**

Insert the words "For the purposes of the Recommendations in this document,.. " at the beginning of the second sentence .

**Reason**

Helps the reader to understand the context of the statements in section 7.3.

**Comment #** 86 | Walt | Roehr | Member

**Type** Technical, Non-binding **Starting Page Number** 62 **Starting Line Number** 24 **Section** 7.4

**Change**

Delete this entire section.

**Reason**

Terms such as "Ensure" and "Verify" are too vague. How is the operator to (page 63, line 6) "verify" that there won't be IF cable problems without turning on the radio?

**Comment #** 87 | Adrian | Florea | Member

**Type** Editorial **Starting Page Number** 63 **Starting Line Number** 12 **Section** 8

**Change**

Move the entire section 8 at the end as an Appendix

**Reason**

# IEEE 802.16 Letter Ballot #2 (2000-11-17 to 2000-12-27) Comment Report: 2000-12-28

**Comment #** 88 | Roger | Marks | Member

**Type** Editorial **Starting Page Number** 63 **Starting Line Number** 39 **Section** 8.1.2

**Change**

Change sentence in Lines 39-40 to:

In each frequency band assigned for BWA use, different types of systems may be deployed, some conforming to IEEE 802.16 standards and some designed to other specifications.

**Reason**

Editorial; and generalizes the identifier "802.16.1".

**Comment #** 89 | Barry | Lewis | Member

**Type** Editorial **Starting Page Number** 66 **Starting Line Number** 1 **Section** 8.1.6

**Change**

Delete the final sentence and replace with a new paragraph "Further information on both the ISOP method and the IA method can be found in ERC Report 99 [2]."

**Reason**

Improved accuracy.

**Comment #** 90 | Avraham | Freedman | Member

**Type** Editorial **Starting Page Number** 66 **Starting Line Number** 2 **Section** 8.1.6

**Change**

Add reference TO THE Draft CEPT/ERC

**Reason**

Completeness

# IEEE 802.16 Letter Ballot #2 (2000-11-17 to 2000-12-27) Comment Report: 2000-12-28

**Comment #** 91 | Philip | Whitehead | Member

**Type** Editorial **Starting Page Number** 66 **Starting Line Number** 2 **Section** 8.1.6

**Change**

Add word "report" at end of the sentence

**Reason**

Missing word from sentence

**Comment #** 92 | Barry | Lewis | Member

**Type** Editorial **Starting Page Number** 67 **Starting Line Number** 1 **Section** 8.1.6

**Change**

Table 8-1 and associated notes would be more appropriate in a section with its own heading.

**Reason**

The table has nothing specifically to do with the ISOP method of 8.1.6

**Comment #** 93 | Zev | Bogan | Observer

**Type** Editorial **Starting Page Number** 67 **Starting Line Number** 2 **Section** table 8-1

**Change**

line 8/first column in table correct "multiple interferes" to "multiple interferers"

**Reason**

typo

**Comment #** 94 | George | Fishel | Member

**Type** Editorial **Starting Page Number** 67 **Starting Line Number** 2 **Section** 8.1.6

**Change**

Make the title for Table 8-1 bold and center on page.

**Reason**

So it's like the rest of the tables in the document.

# IEEE 802.16 Letter Ballot #2 (2000-11-17 to 2000-12-27) Comment Report: 2000-12-28

**Comment #** 95 | Barry | Lewis | Member

**Type** Technical, Binding **Starting Page Number** 67 **Starting Line Number** 2 **Section** 8.1.6 (sic)

**Change**

In Table 8-1, a new row is needed between rows 5 and 6 with the following entries in each column respectively;- Hub to Hub; FDD/TDD; Same area, adjacent frequency; Monte Carlo; 1 guard channel (note 2).

**Reason**

To reflect recently added contributions detailed in sections 8.1.10.1 and Annex C.13.

**Comment #** 96 | Philip | Whitehead | Member

**Type** Editorial **Starting Page Number** 67 **Starting Line Number** 2 **Section** Table 8-1

**Change**

In column 1, change 8th entry to "Hub to hub (multiple interferers)"

**Reason**

Correction of English

**Comment #** 97 | Barry | Lewis | Member

**Type** Technical, Binding **Starting Page Number** 67 **Starting Line Number** 8 **Section** 8.1.6 (sic)

**Change**

In Note 2 replace the final sentence with the following; "Where channel spacings are considerably different across the frequency block boundary, analysis suggests that one equivalent guard channel may be necessary at the edge of each operator's block."

**Reason**

To be consistent with 8.1.10.1, .2 and .3

# IEEE 802.16 Letter Ballot #2 (2000-11-17 to 2000-12-27) Comment Report: 2000-12-28

**Comment #** 98 | Barry | Lewis | Member

**Type** Editorial **Starting Page Number** 70 **Starting Line Number** 20 **Section** 8.1.10.2

**Change**

Replace "Annex C.3" with "Annexes C.3 and C.13"

**Reason**

Highlights recently added contributions on the issue.

**Comment #** 99 | Barry | Lewis | Member

**Type** Editorial **Starting Page Number** 70 **Starting Line Number** 36 **Section** 8.1.10.3

**Change**

Replace "Annex C.12" with "Annexes C.12 and C.13"

**Reason**

Highlights recently added contributions on the issue.

**Comment #** 100 | Avraham | Freedman | Member

**Type** Technical, Non-binding **Starting Page Number** 71 **Starting Line Number** 12 **Section** 9.1

**Change**

Add:
"Best results would be obtained if full cooperation and common deployment planning is achieved.

**Reason**

To stress the importance of cooperation and the possibility to achieve better coexistence and higher networks efficiency with common planning. Operators are usually reluctant to share information with competing operators. It is important they realize that cooperation is a win-win situation.

# IEEE 802.16 Letter Ballot #2 (2000-11-17 to 2000-12-27) Comment Report: 2000-12-28

**Comment #** 101 | George | Fishel | Member

**Type** Editorial **Starting Page Number** 71 **Starting Line Number** 41 **Section** 9.3

**Change**

A page break is needed after line 40.

**Reason**

So the title of section 9.3 is with the section on the next page.

**Comment #** 102 | George | Fishel | Member

**Type** Editorial **Starting Page Number** 74 **Starting Line Number** 39 **Section** 9.10

**Change**

A page break is needed after line 38.

**Reason**

So the title of section 9.10 is on the next page with the section.

**Comment #** 103 | George | Fishel | Member

**Type** Editorial **Starting Page Number** 75 **Starting Line Number** 8 **Section** 9.10.1

**Change**

Change the word stroke" to "strike"."

**Reason**

Word is spelled wrong.

**Comment #** 104 | George | Fishel | Member

**Type** Editorial **Starting Page Number** 78 **Starting Line Number** 38 **Section** A.1.1

**Change**

Make the title for Figure A.1 bold and center on page.

**Reason**

The title for other figures are bold and centered in the document.

# IEEE 802.16 Letter Ballot #2 (2000-11-17 to 2000-12-27) Comment Report: 2000-12-28

**Comment #** 105 | George | Fishel | Member

**Type** Editorial **Starting Page Number** 80 **Starting Line Number** 42 **Section** A.2

**Change**

Add a page break after line 41.

**Reason**

So the title for section A.2 is with the section on the next page.

**Comment #** 106 | Avraham | Freedman | Member

**Type** Editorial **Starting Page Number** 84 **Starting Line Number** 9 **Section** C.1

**Change**

Change "power flux density (pfd) to "power spectral flux density (psfd)"
Change "pfd" to psfd also in p. 85 line 9 and line 14

**Reason**

According to the units, and the presented results, it is the psfd which is being presented.

**Comment #** 107 | George | Fishel | Member

**Type** Editorial **Starting Page Number** 84 **Starting Line Number** 22 **Section** C.1

**Change**

Make the title for Figure C.1 bold.

**Reason**

So it's the same as other figures in the document.

# IEEE 802.16 Letter Ballot #2 (2000-11-17 to 2000-12-27) Comment Report: 2000-12-28

**Comment #** 108 | Avraham | Freedman | Member

**Type** Technical, Non-binding **Starting Page Number** 86 **Starting Line Number** 1 **Section** C

**Change**

The simulation descriptions, in general, do not give enough details. The range of parameters taken in the simulations such as the cell sizes, the sector sizes, frequency sizes, types of antenna etc. The reuslts are overly qualitativc. Few numerical measures (if any) were given. For example, in C.1 instead of "the cumulative distribution curves show negligible exposures.." a numerical indication of how negligible (0.1%, 1%, 10%) would add information to the reader.
As those are obviously simulations taken from other other sources, it would be worthwhile to reference the sources, so the intersted reader rpobe further.

**Reason**

To improve the quality of the annex.

**Comment #** 109 | George | Fishel | Member

**Type** Editorial **Starting Page Number** 86 **Starting Line Number** 19 **Section** C.1

**Change**

Make title for Figure C.2 bold and move up under figure. Also make text in figure larger so you can read it.

**Reason**

So it is like the other figures in the document.

**Comment #** 110 | Avraham | Freedman | Member

**Type** Editorial **Starting Page Number** 87 **Starting Line Number** 15 **Section** C.2

**Change**

delete "based on the geometry and rain loss procedure described in Section 3.0"

**Reason**

This is probably a reference to another section 3.0, of another document, of which this simulation was copied from.

# IEEE 802.16 Letter Ballot #2 (2000-11-17 to 2000-12-27) Comment Report: 2000-12-28

**Comment #** 111 | Avraham | Freedman | Member

**Type** Editorial **Starting Page Number** 88 **Starting Line Number** 10 **Section** C.3

**Change**

Rephrase the sentence.

**Reason**

Figure C.3 does not show any frequency/ polarization model. Section 5.1.2 describes a mesh MP-MP system and does not describe any methodology.

**Comment #** 112 | George | Fishel | Member

**Type** Editorial **Starting Page Number** 88 **Starting Line Number** 21 **Section** C.3

**Change**

Move title for Figure C.3 centered under the figure. And make the title for Figures C.3 & C.4 bold. Make text in figures larger so you can read it.

**Reason**

So the figures are like the other figures in the document.

**Comment #** 113 | George | Fishel | Member

**Type** Editorial **Starting Page Number** 89 **Starting Line Number** 20 **Section** C.4

**Change**

Make the title for Figure C.4 bold.

**Reason**

So the figure is like other figures in the document.

# IEEE 802.16 Letter Ballot #2 (2000-11-17 to 2000-12-27) Comment Report: 2000-12-28

**Comment #** 114 | George | Fishel | Member

**Type** Editorial **Starting Page Number** 89 **Starting Line Number** 33 **Section** C.4

**Change**

Add page break to bottom of page so title is on the next page.

**Reason**

So the title is with the next section.

**Comment #** 115 | Avraham | Freedman | Member

**Type** Editorial **Starting Page Number** 90 **Starting Line Number** 15 **Section** C.5

**Change**

Delete the 0.7071's from figure C.6, or give it some meaning.

**Reason**

No explanation for the number in the figure.

**Comment #** 116 | George | Fishel | Member

**Type** Editorial **Starting Page Number** 90 **Starting Line Number** 18 **Section** C,5

**Change**

Make title for Figure C.6 bold.

**Reason**

So it is like other figures in the document.

**Comment #** 117 | Avraham | Freedman | Member

**Type** Editorial **Starting Page Number** 92 **Starting Line Number** 6 **Section** C.6

**Change**

Define antennas in figure C.7

**Reason**

The defintion of the antenna "ETSI TS1", or "TM4069" is not clear, especially if the frequency is not mentioned

# IEEE 802.16 Letter Ballot #2 (2000-11-17 to 2000-12-27) Comment Report: 2000-12-28

**Comment #** 118 | George | Fishel | Member

**Type** Editorial **Starting Page Number** 92 **Starting Line Number** 9 **Section** C.7

**Change**

Make title for Figure C.7 bold.

**Reason**

So it's like other figures in the document.

**Comment #** 119 | George | Fishel | Member

**Type** Editorial **Starting Page Number** 93 **Starting Line Number** 20 **Section** C.8

**Change**

Make title for Figure C.8 Bold.

**Reason**

So It's the same as all the other figures in the document.

**Comment #** 120 | George | Fishel | Member

**Type** Editorial **Starting Page Number** 95 **Starting Line Number** 10 **Section** C.9

**Change**

Make the title for Figure C9 Bold.

**Reason**

So it's the same as all the other figures in the document.

**Comment #** 121 | Philip | Whitehead | Member

**Type** Editorial **Starting Page Number** 95 **Starting Line Number** 14 **Section** C.9

**Change**

Add bullet points to the attributes described on lines 14 to 25. Start new line after "D3P1B" on line 16. Start new line after "ITU_R P.676-3" on line 24.

**Reason**

Makes text easier to read.

# IEEE 802.16 Letter Ballot #2 (2000-11-17 to 2000-12-27) Comment Report: 2000-12-28

**Comment #** 122 | Philip | Whitehead | Member

**Type** Editorial **Starting Page Number** 96 **Starting Line Number** 14 **Section** Simulation results

**Change**

Remove square brackets from "[40km]"

**Reason**

Square brackets imply the number is not decided

**Comment #** 123 | Avraham | Freedman | Member

**Type** Editorial **Starting Page Number** 98 **Starting Line Number** 39 **Section** C.13

**Change**

Change title:
"General scenario, same area, adjacent frequency"

Add:
"This simulation tests a general case of P-MP and mesh systems in the same area, in adjacent frequency bands. It analyzes the cases of PMP CS to PMP CS, PMP TS to PMP TS, High density mesh to PMP CS and high density mesh to another mesh."

**Reason**

The purpose and scope of the simulation was not clear to the reader.

**Comment #** 124 | Avraham | Freedman | Member

**Type** Editorial **Starting Page Number** 99 **Starting Line Number** 28 **Section** C.13

**Change**

change "net filter rejection is in line with Figure below"
to "net filter discrimination is in line with Figure C.10 below"

**Reason**

1. The term net filter rejection is not used in the document.
2. Give reference to the proper figure.

# IEEE 802.16 Letter Ballot #2 (2000-11-17 to 2000-12-27) Comment Report: 2000-12-28

**Comment #** 125 | Avraham | Freedman | Member

**Type** Editorial **Starting Page Number** 100 **Starting Line Number** 1 **Section** C.13

**Change**

Change "Net filter Rejection" to Net filter discrimination" in figure C.10
Change NFR to NFD in the title, line 11

**Reason**

The term NFD is used throughout the document and not NFR

**Comment #** 126 | George | Fishel | Member

**Type** Editorial **Starting Page Number** 100 **Starting Line Number** 2 **Section** C.10

**Change**

Make the title for Figure C.10 and Table C.1 Bold.

**Reason**

So they are the same as all the other figures and tables in the document.

**Comment #** 127 | Barry | Lewis | Member

**Type** Editorial **Starting Page Number** 100 **Starting Line Number** 9 **Section** C.13

**Change**

Table C.1;Insert a new left hand column headed "Channel spacing in each adjacent block" and in the three rows beneath this heading insert the following respectively:- "Identical"; "Non-identical (Ratio 4:1)"; "Non-identical (Ratio 4:1)". Insert the now second column heading "Guard frequency width" and replace the text in the first row beneath this heading with "1 channel spacing equivalent".

**Reason**

Clarification. The current first column which is not headed, contains a mixture of channel spacing scenarios and guard band widths.

# IEEE 802.16 Letter Ballot #2 (2000-11-17 to 2000-12-27) Comment Report: 2000-12-28

**Comment #** 128 | Avraham | Freedman | Member

**Type** Editorial **Starting Page Number** 102 **Starting Line Number** 6 **Section** D.14

**Change**

Change title to D.1

**Reason**

No reason to start with D. 14

**Comment #** 129 | George | Fishel | Member

**Type** Editorial **Starting Page Number** 102 **Starting Line Number** 26 **Section** D.1

**Change**

Make the title for Figure D.1 bold.

**Reason**

So it's the same as all the other tables in the document.

**Comment #** 130 | George | Fishel | Member

**Type** Editorial **Starting Page Number** 103 **Starting Line Number** 3 **Section** D.1

**Change**

So it's the same as all the other tables in the document.

**Reason**

So it's in the correct place.

**Comment #** 131 | George | Fishel | Member

**Type** Editorial **Starting Page Number** 105 **Starting Line Number** 1 **Section**

**Change**

Remove page 105 from document.

**Reason**

Nothing on it.

# IEEE 802.16 Letter Ballot #2 (2000-11-17 to 2000-12-27) Comment Report: 2000-12-28

**Comment #** 132 | Avraham | Freedman | Member

**Type** Editorial **Starting Page Number** 106 **Starting Line Number** 15 **Section** D.16

**Change**

Delete the section

**Reason**

Incomplete

**Comment #** 133 | Barry | Lewis | Member

**Type** Editorial **Starting Page Number** 106 **Starting Line Number** 19 **Section** Annex D

**Change**

Insert: D.17 Radiocommunications Agency (UK-RA)
The UK-RA has commissioned technical studies dealing with BFWA inter-operator co-existence at 28 and 42GHz. Two reports titled "BFWA co-existence at 28 & 42GHz" and a companion extended study are publically available from the RA Web Site under the Business Unit/Research - Extra-Mural R&D project section (www.radio.gov.uk/busunit/research/extramen.htm.). The work studied the issues from the point of view of a regulator wishing to put in place co-existence guidelines for BFWA operators to be licensed in the UK. It addresses both interference scenarios and provides recommendations for psfd trigger levels and guard frequencies based upon tolerable I/N of -10dB and -6dB.

**Reason**

Completeness. The annex refers to work carried out by other bodies which can usefully be considered alongside the recommendations and conclusions of the practice document. The UK-RA is another body that has carried out work and has contributed to the practice document.

# IEEE 802.16 Letter Ballot #2 (2000-11-17 to 2000-12-27) Comment Report: 2000-12-28

**Comment #** 134 | Barry | Lewis | Member

**Type** Editorial **Starting Page Number** 106 **Starting Line Number** 19 **Section** Annex D

**Change**

Insert: D.18 CEPT/ERC
The European CEPT has carried out work within its Spectrum Engineering Working Group concerning the co-existence of FWA cells in the 26/28GHz bands. The completed report, ERC Report 099 [2] , is available from the European Radiocommunication Office at www.ero.dk. The report considers both interference scenarios and concludes with recommendations regarding guard frequencies and separation distances. The concepts of Interference Scenario Occurrence Probability (ISOP) and Interfered Area (IA) feature extensively in the analyses documented.

**Reason**

Completeness. The annex refers to work carried out by other bodies which can usefully be considered alongside the recommendations and conclusions of the practice document. The CEPT/ERC is another body that has carried out work which has contributed to the practice document.

**Comment #** 135 | George | Fishel | Member

**Type** Editorial **Starting Page Number** 107 **Starting Line Number** 4 **Section**

**Change**

Correct section headings and add numbers so they are the same as other parts of document ending on page 111.

**Reason**

So they are the same as other parts of document.

**Comment #** 136 | Avraham | Freedman | Member

**Type** Editorial **Starting Page Number** 109 **Starting Line Number** 10 **Section** E

**Change**

Change "pfd" to "psfd". Also in line 15

**Reason**

The term psfd is used throughout the document. As this is an imported document, it might be better to add a footnote indicating that pfd in the annex is psfd elsewhere.

# IEEE 802.16 Letter Ballot #2 (2000-11-17 to 2000-12-27) Comment Report: 2000-12-28

**Comment #** 137 | Avraham | Freedman | Member

**Type** Editorial **Starting Page Number** 109 **Starting Line Number** 38 **Section** E

**Change**

Provide a reference for Annex X or delete it.

**Reason**

Annex E refers to Annex X (also in p. 110 l. 3) and Annex 1 (p.110 l.14), which is not part of the document.

**Comment #** 138 | Avraham | Freedman | Member

**Type** Editorial **Starting Page Number** 112 **Starting Line Number** 4 **Section** F

**Change**

Change pfd with psfd

**Reason**

The term psfd is used throughout the document. As this is an imported document, it might be better to add a footnote indicating that pfd in the Annex is psfd elsewhere.

**Comment #** 139 | George | Fishel | Member

**Type** Editorial **Starting Page Number** 112 **Starting Line Number** 16 **Section**

**Change**

Repair left margin and add numbered sections like other parts of document and correct font size of the remainder of Annex F.

**Reason**

So Annex F is the same as other parts of the document.

# IEEE 802.16 Letter Ballot #2 (2000-11-17 to 2000-12-27) Comment Report: 2000-12-28

**Comment #** 140 | George | Fishel | Member

**Type** Editorial **Starting Page Number** 115 **Starting Line Number** 3 **Section** F.1

**Change**

Add Figure # F.1 to figure and make bold.

**Reason**

So it's the same as other parts of the document.

**Comment #** 141 | Barry | Lewis | Member

**Type** Editorial **Starting Page Number** 116 **Starting Line Number** 5 **Section** Annex G

**Change**

Insert: "Report 099" after "CEPT/ERC.."

**Reason**

Clarification. Report now formally approved and numbered.

**Comment #** 142 | Jose | Costa | Member

**Type** Editorial **Starting Page Number** 116 **Starting Line Number** 37 **Section** Annex G - Ref. [17]

**Change**

Replace "7D-9D/68-E" by "9/BL/1" See http://www.itu.int/itudoc/itu-r/draftpub/f/index.html for further details.

**Reason**

Update the ITU-R document number.

# IEEE 802.16 Letter Ballot #2 (2000-11-17 to 2000-12-27) Comment Report: 2000-12-28

**Comment #** 143 | Jose | Costa | Member

**Type** Editorial **Starting Page Number** 117 **Starting Line Number** 7 **Section** Annex G - Ref. [20]

**Change**

Replace "F.[AD/9D]" by "F.1249-1". See http://www.itu.int/itudoc/itu-r/rec/f/index.html for further details.

**Reason**

Update the ITU-R Recommendation number.

**Comment #** 144 | Jose | Costa | Member

**Type** Editorial **Starting Page Number** 117 **Starting Line Number** 22 **Section** Annex G - Ref. [28]

**Change**

Need to verify what ITU-R Recommendation is really meant here. Recommendation ITU-R P.452 is entitled: "Prediction procedure for the evaluation of microwave interference between stations on the surface of the Earth at frequencies above about 0.7 GHz". Other relevant ITU-R Recommendations might be:

P.838-1 "Specific attenuation model for rain for use in prediction methods"

P.839-2 "Rain height model for prediction methods"

See http://www.itu.int/itudoc/itu-r/rec/p/index.html for further details.

**Reason**

To use the proper references.

**Comment #** 145 | Barry | Lewis | Member

**Type** Editorial **Starting Page Number** 117 **Starting Line Number** 22 **Section** Annex G

**Change**

Insert: "Prediction Procedure for the Evaluation of Microwave Interference between Stations on the Surface of the Earth at Frequencies above about 0.7GHz" in place of "[TBD] Rain cell models."

**Reason**

Correct title for Recommendation ITU-R P.452

# IEEE 802.16 Letter Ballot #2 (2000-11-17 to 2000-12-27) Comment Report: 2000-12-28

**Comment #** 146 | Barry | Lewis | Member

**Type** Editorial **Starting Page Number** 117 **Starting Line Number** 22 **Section** Annex G

**Change**

Insert: "[29] ITU-R Recommendation F.758-2 "Considerations in the Development of Criteria for Sharing between the Terrestrial Fixed Service and Other Services."

**Reason**

Consequential change if the previous comment is accepted.

**Comment #** 147 | Jose | Costa | Member

**Type** Editorial **Starting Page Number** 117 **Starting Line Number** 23 **Section** Annex G - Ref. [29]

**Change**

Add: [29] Recommendation ITU-R F.1399, "Vocabulary of terms for wireless access"

**Reason**

For completeness.