

Project	IEEE 802.16 Broadband Wireless Access Working Group	
Title	System Requirements Minutes for 802.16 Session #4	
Date Submitted	1999-11-10	
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Re:		
Abstract	Minutes of the 802.16 system requirements task group., 1999-11-8, Hyatt Regency Kauai.	
Purpose	To provide a correct record of events during the above meeting	
Notice	This document has been prepared to assist the IEEE 802.16. It is offered as a basis for discussion and is not binding on the contributing individual(s) or organization(s). The material in this document is subject to change in form and content after further study. The contributor(s) reserve(s) the right to add, amend or withdraw material contained herein.	
Release	The contributor acknowledges and accepts that this contribution may be made public by 802.16.	
IEEE Patent Policy	The contributor is familiar with the IEEE Patent Policy, which is set forth in the IEEE-SA Standards Board Bylaws < http://standards.ieee.org/guides/bylaws > and includes the statement: “IEEE standards may include the known use of patent(s), including patent applications, if there is technical justification in the opinion of the standards-developing committee and provided the IEEE receives assurance from the patent holder that it will license applicants under reasonable terms and conditions for the purpose of implementing the standard.”	

Minutes of 802.16 system requirements task group meeting 8.11.1999

Author: Carl Eklund

Edited by: George Fishel, Brian Petry

Introduction

This document contains the minutes from IEEE 802.16 System requirements meeting session#4 Kauai Monday 8.11.99

Meeting opening

The meeting was opened by a status report given by the task group Chair SysReq Task Group, George Fishel. He presented the meeting agenda document IEEE 802.16S-99/02R1 a motion was made and seconded in the 802.16 plenary meeting to accept the document.

Record of events

Brian Kiernan made a motion to approve the minutes of meeting #3

Ray Sanders seconded Brian's motion. During the discussion an error was detected in the document. A change of comment number from 47 to 48 was made to correct an error in the minutes. Approval of the minutes was postponed to later in the meeting as the second had stepped out of the room and was not able to approve the change.

Comment resolution

These comments are comments on the document 802.16s0-99/5 submitted by e-mail prior to the comment submission deadline. The comments are referred to by number as they appear in the comment database. Comments were either accepted as such, accepted with modifications or rejected via a meeting vote.

Brian Petry reported on the on-line resolution of comments to 802.16s0-99/4 that had taken place between sessions #3 and session #4.

Motion to ratify on-line comments by Brian Petry to ratify the accepted 94 comments

Seconded by Brian Kiernan

Comments accepted by unanimous voice vote.

Brian Petry gave an overview of the draft #5 document containing the 94 comments and explained that that it was posted to the Web site and comments were received. The following is a tally of the comments received:

78 comments total received on draft #5.

5 editorial comments were duplicates

2 technical comments were duplicates

2 technical comments have no specific edit proposed (should be rejected)

Current status:

- 37 technical comments to resolve
- 32 editorial comments that should be easy to resolve

- These comments have been edited into a new draft (based on draft #5) red-lined in a different color

Motion by Tom Kolze : To accept the 32 editorial comments as a block and allow the editor to incorporate into revision #6 of the document.

Second John Liebtreu

Motion carries with a voice vote with one opposing vote and no abstains.

The Chair introduced a requirements summary document of the SHALL, SHOULD, MUST, and MAY statements contained in the document to be included as an appendix to the document.

Motion by Brian Petry: To accept the requirements summary appendix and instruct the editor to maintain its validity as the document changes.

Second by: Jung Yee

Accepted by voice vote with 1 abstain.

Start of comment resolution for the 37 comments on draft #5 document. Members were instructed that if the comment maker is present, please propose a motion to accept your comment. If the comment maker is not present, any voting member can champion a comment and propose it be accepted by the task group.

Comment 309 Motion by: Marianna Goldhammer to accept.

Seconded by: David Falconer

Friendly amendment by Bruce Currivan accepted by maker

Motion to amend comment 309 by: Scott Marin, delete the second sentence.

Second by: Tom Kolze

19 in favor of the amendment, 2 opposed 0 abstains

Amendment accepted.

Motion by Nico van Waes to remove telecommuters from comment 309.

James Mollenauer seconds

5 in favor 13 against 4 abstains

Motion Rejected

Final vote on comment 309.

14 in favor, 9 in opposition,

Motion fails due to 75% majority required for technical change.

Comment 338 Motion to accept by Brian Petry

Second by Nico van Waes

18 in favor 0 in opposition 2 abstains

Comment 338 adopted.

Comment 310 Motion to accept by Marianna Goldhammer

Second by Naftali Chayat

5 in favor, 10 opposed, 6 abstains

Comment 310 Rejected

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Comment 325 Motion to accept by Scott Marin

Seconded by Tom Kolze

Friendly Amendment by Carl Eklund accepted maker and second.

Reads Fixed wireless access (e.g. 802.16.1 P-MP radio)

17 in favor, 8 opposed, 0 abstained 75 % majority required for technical change.

Comment 325 fails.

Comment 353 Motion to accept by Scott Marin,

Second by Gene Robinson

Amendment by Bruce Currivan, atmospheric conditions(especially rainfall)

Second by Tom Kolze

13 in favor,10 opposed

Failed due to 75% technical change rule

20 in favor 2 opposed 4 abstains

Comment 353 accepted as presented.

Comment 326 Motion to accept by Scott Marin

Seconded by John Liebtreu

20 in favor, 0 opposed, 2 abstains

Comment 326 accepted.

Comment 328 Motion to accept by Scott Marin

Seconded by Nico van Waes

20 in favor 0 opposed 0 abstains

Comment 328 accepted.

Comment 311 Motion to accept by Marianna Goldhammer

Seconded by Naftali Chayat

8 in favor 9 opposed, 0 abstains

Comment 311 rejected.

Comment 341 also rejected as a duplicate to 311.

Comment 342 Motion to accept by Phil Guillemette

Seconded by Marianna Goldhammer

15 in favor, 1 opposed, 2 abstains

Comment 342 accepted.

Comment 343 Motion to accept by Phil Guillemette

Seconded by Nico van Waes

18 in favor 1 opposed 0 abstains

Comment 343 accepted.

Comment 355 Motion to accept by Brian Kiernan

Seconded by Phil Guillemette

15 in favor 0 opposed 3 abstains

Comment 355 accepted

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Comment 356 (corrected) Motion to accept Brian Kiernan
Seconded by Jung Yee
13 in favor 4 in opposition 1 Abstain
Comment 356 accepted

Comment 344 Motion to accept by Phil Guillemette
Seconded by Nico van Waes
14 in favor, 0 agaist, 2 abstains
Comment 344 approved

Comment 345 Motion to accept Phil Guillemette
Seconded by Nico van Waes
Voice vote passed by acclamation
Comment 345 accepted

Comment 346 Motion to accept by Phil Guillmette
Seconded by Scott Marin
11 in favor, 10 opposed , 0 abstains 75% rule for technical changes.
Comment 346 rejected

Motion to break for dinner
Accepted

Meeting resumed
Comment 347 Motion to accept by Phil Guillemette
Seconded by Carl Eklund
9 in favor, 3 opposed, 1 abstained
Comment 347 accepted

Comment 312 Motion to accept Marianna Goldhammer
Naftali Chayat seconded
Amendment by Jay Klein
Seconded by John Liebtreu
Question called with one person opposed
14 in favor, 0 opposed, no abstains
Amendment accepted.
Friendly amendment by Hadad ...
Amendment accepted
Question is called with one person opposed
Vote on main motion 0 in favor, 15 opposed no abstains
Comment 312 rejected

Comment 313 Motion to accept by Marianna Goldhammer
Seconded by: Naftal Chayat
Friendly amendment by Jay Klein accepted
Call the question. Question is called by voice vote
4 in favor 13 opposed, 0 abstains
Comment 313 rejected

Comment 348 Motion to accept by Phil Guillemette
Seconded by Nico van Waes
14 in favor, 3 opposed, 0 abstains
Comment 348 accepted

Comment 314a Motion to accept by Marianna Goldhammer
Seconded by Phil Guillemette
6 in favor, 9 opposed, 1 abstain
Comment 314a rejected

Comment 314b Motion to accept by Marianna Goldhammer
Seconded by Tom Kolze
4 in favor 2 opposed motion fails 75% rule on technical changes.
Comment 314b failed

Comment 349 Motion to accept by Phil Guillemette
Seconded by Brian Petry
9 in favor, 5 opposed, 75% rule for technical changes.
Comment 349 rejected.

Comment 359 similar to previously accepted comment. Voice vote comment accepted unanimously.

Comment 330 Motion to accept by Scott Marin
Seconded by Ray Sanders
Voice vote unanimously approve comment.
Comment 330 accepted.

Comment 315 Motion to accept by Marianna Goldhammer
Seconded by Naftali Chayat
Friendly amendment by Phil Guillemette rejected
Call the question. Question was called by voice vote.
1 in favor, 16 against, no abstains
Comment 315 rejected

Comment 363 similar to previously accepted comment. Voice vote comment accepted unanimously.

Comment 362 similar to previously accepted comment. Voice vote comment accepted unanimously.

Comment 360 similar to previously accepted comment. Voice vote comment accepted unanimously.

Comment 361 similar to previously accepted comment. Voice vote comment accepted unanimously.

Comment 300 Motion to accept by Scott Marin

Seconded by Ray Sanders

Friendly amendment by Brian Petry to delete sentence Starting with "system delay..." and fix grammar in paragraph following" accepted

13 in favor, 1 against, no abstains

Comment 300 accepted

Comment 366 similar to previously accepted comment. Voice vote comment accepted unanimously.

Comment 318 Motion to accept by Scott Marin

Seconded by:Gene Robinson

Amendments by Ray Sanders and Ken Lazaris-Brunner accepted

Comment 318 accepted by unanimous voice vote

Comment 317 Motion to accept by Marianna Goldhammar

Seconded by Naftali Chayat

Friendly amendment by Jung Yee accepted.

5 in favor, 12 opposed, no abstains

Comment 317 rejected

Comment 316 Motion to accept by Marianna Goldhammer

Seconded by Naftali Chayat

3 in favor, 11 in opposition, 1 abstain

Comment 316 rejected

Comment 308 Motion to accept by Phil Guillemette

Seconded by Brian Petry

9 in favor 5 opposed 75% rule for technical changes

Comment 308 rejected

Comment 319 Motion to accept by Scott Marin

Seconded by Gene Robinson

13 in favor, 2 opposed

Comment 319 accepted

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IEEE 802.16s-99/5

Comment 320 Motion to accept by Scott Marin
Seconded by Gene Robinson
11 in favor 2 against , no abstains
Comment 320 accepted

Comment 332 Motion to accept by Scott Marin
Gene Robinson seconds
Friendly amendment by Ray Sanders accepted
12 in favor 1 in opposition
Comment 332 accepted

Comment 371 Motion to approve by Phil Guillemette
Seconded by Ray Sanders
Voice vote Unanimously accepted
Comment 371 accepted

All filed comments on document 802.16s0-99/5 resolved at this point.

The motion to accept minutes of session#3 previously postponed was revived.
The minutes of session#3 were unanimously accepted by voice vote.

Motion by Nico van Waes:

To accept the edited draft#5,802.16s0-99/5 (will be 802.16s0-99/6) and submit it to the 802.16 working group for their acceptance and to move before the 802.16 working group:

"To accept 802.16s0-99/6 document as a binding document for development of the 802.16.1 air interface."

Seconded by Gene Robinson

Call the question. Question called by voice vote

11 in favor 2 opposed, no abstains

Motion carries to move document 802.16s0-99/6 forward in the 802.16 closing plenary on Thursday afternoon.

802.16 Chair urged the task group to make a report of reasons for negative votes and submit these together with the motion above.

Next meeting: The chair proposed that the System Requirements Task Group tentative plan to meet at the Dallas interim meeting in January.

Motion to Adjourn

Seconded

Accepted.

Meeting adjourned at approximately 23:15.

Item Number: 300**Commentor Name:** Scott**Page Number:** 18

Marin

Line Number: 4**Description of Edi**

Delete the delay definitions, lines 4 through 11.

Reason for Edit:

The delay definitions need improvement. For example, the phrase "ready to transmit" and "actually begins transmission" can be interpreted in several way and needs a more precise definition. In addition, the end-to-end delay from BNI to SNI and SNI to BNI contains functions outside of the MAC and PHY for which no delay assumptions or allocation is provided. In Table 1, it's not clear which, if any, of the delay definitions are being used. The actual delay through the MAC and PHY are not defined, which is probably the most important definition for 802.16 to get correct. The notion of delay for initially configuring a connection versus the steady state delay during payload transmission is not defined.

Date Received: 11/3/99**Date Resolved:****Comment Type:** Technical**Resolution Status:** accepted**Notes:****Item Number:** 301**Commentor Name:** Marks**Page Number:** 0

Roger

Line Number: 0**Description of Edi**

Global replacement of "802.16" with "802.16.1".

Reason for Edit:

For consistency with the new PAR number (802.16.1) to refer to the Air Interface standard.

Date Received: 11/3/99**Date Resolved:****Comment Type:** Editorial**Resolution Status:** accepted**Notes:****Item Number:** 302**Commentor Name:** Marks**Page Number:** 4

Roger

Line Number: 20**Description of Edi**

In Figure 1-1, delete "LMDS".

Reason for Edit:

The term "LMDS" is used nowhere else in the document (except in the references). It is not defined, it does not add value, and it detracts from the global nature of the result since it is often associated with one particular nation.

Date Received: 11/3/99**Date Resolved:****Comment Type:** Editorial**Resolution Status:** accepted**Notes:****Item Number:** 303**Commentor Name:** Fishel**Page Number:** 5

George

Line Number: 1**Description of Edi**

Replace "Fixed Wireless Access" in the Wireless Solutions column of figure 1 with "802.16P-MP Radio".

Reason for Edit:

It was always intended that one of the areas that would be serviced by our standard would be the residential market.

Date Received: 11/3/99**Date Resolved:****Comment Type:** Editorial**Resolution Status:** accepted**Notes:**

Item Number: 304**Commentor Name:** Fishel**Page Number:** 7

George

Line Number: 6**Description of Edi**

Remove sentence that reads "Typical bands allocated for 802.16 use are very wide, allowing for the bands to be channilized."

Reason for Edit:

The bands are not allocated for 802.16 use they are allocated for LMDS use.

Date Received: 11/3/99**Date Resolved:****Comment Type:** Editorial**Resolution Status:** accepted**Notes:****Item Number:** 305**Commentor Name:** Fishel**Page Number:** 8

George

Line Number: 21**Description of Edi**

Delete the sentence "The resultant topology is very similar the Hybrid fiber Coax (HFC) cable TV network."

Reason for Edit:

The topology is in no way the same as an HFC network. Some of the access protocol may be similar but that is the only reason they are alike.

Date Received: 11/3/99**Date Resolved:****Comment Type:** Editorial**Resolution Status:** accepted**Notes:****Item Number:** 306**Commentor Name:** Fishel**Page Number:** 16

George

Line Number: 40**Description of Edi**

Delete the Paragraph from line 40 to 44.

Reason for Edit:

Errored seconds is not a measurement of availability. The paragraph is in error.

Date Received: 11/3/99**Date Resolved:****Comment Type:** Editorial**Resolution Status:** accepted**Notes:****Item Number:** 307**Commentor Name:** Fishel**Page Number:** 20

George

Line Number: 6**Description of Edi**

Change the column hearing "Bitrate(s)" to "throughput rate(s)"

Reason for Edit:

The over-the-air bit rate contains additional overhead bits for things like forward error correction that should not be included in this column.

Date Received: 11/3/99**Date Resolved:****Comment Type:** Editorial**Resolution Status:** accepted**Notes:****Item Number:** 308**Commentor Name:** Guillemette**Page Number:** 19

Phil

Line Number: 35**Description of Edi**

Insert "In addition to the QoS requirements listed in Table 1, the MAC and PHY must ensure an upper bound on the jitter that they add to the traffic. Although the MAC jitter, other than that which is added due to scheduling, can be virtually removed by dejitter buffering, the buffering must not cause the delay bound to be exceeded."

Reason for Edit:

This should be added to ensure that the jitter requirements are met for the different QoS. Ideally, values should be included in the table; however, I was unable to find an accurate quantification for these values.

Date Received: 11/3/99**Date Resolved:****Comment Type:** Technical**Resolution Status:** rejected**Notes:**

Item Number: 309**Commentor Name:** Goldhammer**Page Number:** 4

Marianna

Line Number: 1**Description of Edi**

Change "and multi-tenant dwellings such as high rise buildings" to ", SoHo (Small Office Home Office), Telecommuters and multi-tenant dwellings. From the deployment perspective, most of these markets are situated in residential areas."

Reason for Edit:

To ensure that the standard can cover the large market segment situated between enterprise market and the residential one.

Date Received: 11/3/99**Date Resolved:****Comment Type:** Technical**Resolution Status:** rejected**Notes:****Item Number:** 310**Commentor Name:** Goldhammer**Page Number:** 5

Marianna

Line Number: 0**Description of Edi**

Delete "Line of sight constrained" from the High-Cap Access trapeze and "Must Overcome LOS" from Mass Market Access trapeze.

Reason for Edit:

Technical inconsistency: there is no relation between radio propagation constraints and more or less than 2Mb/s capacity.

Date Received: 11/3/99**Date Resolved:****Comment Type:** Technical**Resolution Status:** rejected**Notes:****Item Number:** 311**Commentor Name:** Goldhammer**Page Number:** 9

Marianna

Line Number: 19**Description of Edi**

Delete the sentence starting with "This form of digital transport"

Reason for Edit:

1. The MAC protocol is not time slotted, but packet based. The video digital broadcast is not a "time-critical" service (par. 6) and shall be passed in a regular broadcast MAC packet.
2. The only interface point, as defined for 802 primitives, is with the MAC layer.

Date Received: 11/3/99**Date Resolved:****Comment Type:** Technical**Resolution Status:** rejected**Notes:****Item Number:** 312**Commentor Name:** Goldhammer**Page Number:** 12

Marianna

Line Number: 20**Description of Edi**

Insert: High reliability IP services shall be supported by an automatic retransmission mechanism. The number of retransmissions shall correspond to the IP datagram header type-of-service bits. The IP datagrams shall be transported according to 802.2 type 1 procedures."

Reason for Edit:

1. data service require higher reliability than legacy services. ARQ is used in wireless protocols to ensure the BER performance. For time critical IP services a low ARQ number should be used.
2. Data packets should be treated as in 802.2

Date Received: 11/3/99**Date Resolved:****Comment Type:** Technical**Resolution Status:** rejected**Notes:**

Item Number: 313**Commentor Name:** Goldhammer**Page Number:** 12

Marianna

Line Number: 26**Description of Edi**

Insert
 " 3.1.6 Virtual Private Network
 The 802.16 MAC and PHY shall permit VPN services. Support shall be given to IEEE 802.1q Virtual LAN protocols. Wired-line Equivalent Privacy shall be assured by adequate data encryption. The packets belonging to a VPN service shall not be mixed in a common frame with packets not belonging to the same VPN."

Reason for Edit:

Support business market requirements for VPN.

Date Received: 11/3/99**Date Resolved:****Comment Type:** Technical**Resolution Status:** rejected**Notes:****Item Number:** 314**Commentor Name:** Goldhammer**Page Number:** 14

Marianna

Line Number: 0**Description of Edi**

Change the Digital Audio/Video stream to exactly the same layers as ATM, LLC, STM. Also delete the explanatory text from rows 21-24.

Reason for Edit:

1. Does not conform with the IEEE 802 reference model

Date Received: 11/3/99**Date Resolved:****Comment Type:** Technical**Resolution Status:** rejected**Notes:****Item Number:** 315**Commentor Name:** Goldhammer**Page Number:** 17

Marianna

Line Number: 22**Description of Edi**

Insert: "In order to assure this BER, the support for data retransmission shall be implemented in the MAC protocols."

Reason for Edit:

Radio performance is generally defined at a BER= 10×10^{-6} and special provision should be provided for data error correction using retransmissions.

Date Received: 11/3/99**Date Resolved:****Comment Type:** Technical**Resolution Status:** rejected**Notes:****Item Number:** 316**Commentor Name:** Goldhammer**Page Number:** 19

Marianna

Line Number: 20**Description of Edi**

Insert
 "5.9 Cost issues
 In order to provide a cost-effective solution, the 802.16 PHY and MAC protocols shall permit half-duplex operation of the subscriber station."

Reason for Edit:

Permit lower cost radio solutions

Date Received: 11/3/99**Date Resolved:****Comment Type:** Technical**Resolution Status:** rejected**Notes:**

Item Number: 317**Commentor Name:** Goldhammer**Page Number:** 19

Marianna

Line Number: 21**Description of Edit:**

Insert
" 5.10 Deployment issues

Large enterprises can afford the high antennae installation costs required for line-of-sight radio propagations. However, it is necessary to ensure a low cost deployment solution that utilizes near-line-of-sight propagation, based on reflections, for the residential areas. The SoHo and Telecommuter communities are generally located in the residential areas, and as such, 802.16 shall support the deployment restrictions of this geographical area. The 802.16 may draft one or two different modems, one for line-of-sight conditions encountered in business areas, and the other for near-line-of-sight and multi-pass conditions specific for residential areas, to cater for these differing applications and zones."

Reason for Edit:

Introduce adequate PHY requirements for the near-line-of-sight deployment, that can give a cost effective solution for the large SoHo/small business/telecommuter market. There are precedents in 802.11: 3 different PHYs in the first release, more 2 PHYs in the second release.

Date Received: 11/3/99**Date Resolved:****Comment Type:** Technical**Resolution Status:** rejected**Notes:****Item Number:** 318**Commentor Name:** Myers**Page Number:** 19

William

Line Number: 35**Description of Edit:**

Add to end of sentence (... various bearer services.), the words "that the PHY and MAC SHALL provide for the wireless access section.

Reason for Edit:

This imposes the QoS parameters of Table 1 as requirements.

Date Received: 11/3/99**Date Resolved:****Comment Type:** Technical**Resolution Status:** accepted-modified**Notes:** Simplified the requirements and english grammar structure.**Item Number:** 319**Commentor Name:** Myers**Page Number:** 20

William

Line Number: 6**Description of Edit:**

In Table 1, the column heading for Delay (one way), add "Maximum" prior to Delay.

Reason for Edit:

This establishes a maximum limit rather than a range of values.

Date Received: 11/3/99**Date Resolved:****Comment Type:** Technical**Resolution Status:** accepted**Notes:****Item Number:** 320**Commentor Name:** Myers**Page Number:** 20

William

Line Number: 6**Description of Edit:**

In the Delay column, for all instances change 10 - 20 ms to 10 ms.

Reason for Edit:

This establishes a defined maximum limit for delay rather than a range of values to fall into.

Date Received: 11/3/99**Date Resolved:****Comment Type:** Technical**Resolution Status:** accepted**Notes:**

Item Number: 321**Page Number:** 20**Line Number:** 8**Commentor Name:** Myers
William**Description of Edit:**

Add sentence after Table 1: "Note that delay refers to the transmission delay from the MAC input from the upper layer at the transmit terminal to the MAC output to the upper layer at the receive terminal for information transmission. It does not include setup time, link acquisition, etc."

Reason for Edit:

This is intended to clarify the meaning of delay to include transit delay through the MAC and PHY path for information transmission.

Date Received: 11/3/99**Date Resolved:****Comment Type:** Editorial**Resolution Status:** accepted**Notes:****Item Number:** 322**Page Number:** 2**Line Number:** 28**Commentor Name:** Scott
Marin**Description of Edit:**

add figure title. "Figure 1, Relationship between 802.16 and other Protocol Standards"

Reason for Edit:

All figures and tables should have titles. All figures and titles should be called out in the text.

Date Received: 11/3/99**Date Resolved:****Comment Type:** Editorial**Resolution Status:** accepted**Notes:****Item Number:** 323**Page Number:** 2**Line Number:** 23**Commentor Name:** Scott
Marin**Description of Edit:**

Replace the sentence "The following diagram illustrates the relationship of 802.16 protocols to other 802 standards and to the OSI model" with "The 802.16 protocols relate to other 802 standards and to the OSI reference model as shown in Figure 1."

Reason for Edit:

All figures and tables should have titles. All figures and titles should be called out in the text.

Date Received: 11/3/99**Date Resolved:****Comment Type:** Editorial**Resolution Status:** accepted**Notes:****Item Number:** 324**Page Number:** 2**Line Number:** 25**Commentor Name:** Scott
Marin**Description of Edit:**

Move the sentence "(The numbers in the figure refer to IEEE standard numbers.)" to the end of the Figure 1 title. Replace "(The numbers in the figure refer to IEEE standard numbers.)" with "(The numbers refer to IEEE standard numbers.)"

Reason for Edit:

All figures and tables should have titles. All figures and titles should be called out in the text. The parenthetic note should be with the figure.

Date Received: 11/3/99**Date Resolved:****Comment Type:** Editorial**Resolution Status:** accepted**Notes:**

Item Number: 325**Commentor Name:** Scott**Page Number:** 5

Marin

Line Number: 1**Description of Edit:**

In the Wireless Solution Column of Figure 1-2, Replace the "Fixed Wireless Access" with "Fixed Wireless Access (e.g., 802.16.1 P-MP Radio)".

Reason for Edit:

Figure 1-2 in document IEEE 802.16s0-99/5 implies that 802.16 P-MP radio is difference than fixed wireless access, which it is not. The figure also implies that 802.16 doesn't apply for data rates below 2 Mbps or for the SOHO market, which is also not true. The figure was correct in document IEEE 802.16s0-99/4 which labeled both the Mass Market Access and the High-cap Access as being within the scope of 802.16.

Date Received: 11/3/99**Date Resolved:****Comment Type:** Technical**Resolution Status:** rejected**Notes:****Item Number:** 326**Commentor Name:** Scott**Page Number:** 7

Marin

Line Number: 6**Description of Edit:**

Delete Sentence: "Typical bands allocated for 802.16 use are very wide, allowing for the bands to be channelized."

Reason for Edit:

The sentence has several problems. Bands are not "allocated" for 802.16. Only the ITU "allocates" bands for use by defined radio services such as the fixed service. The phrase "very wide" is vague. The logical correctness of the argument that because bands are wide they can be channelized is incorrect. The channelization of bands has nothing to do with how wide the band is. Rather than trying to repair all of these issues, I recommend simply deleting the sentence.

Date Received: 11/3/99**Date Resolved:****Comment Type:** Technical**Resolution Status:** accepted**Notes:****Item Number:** 327**Commentor Name:** Scott**Page Number:** 8

Marin

Line Number: 1**Description of Edit:**

In Figure 2-3, replace "STS" with "subscriber station" and replace "BTS" with "base station"

Reason for Edit:

To be consistent with text.

Date Received: 11/3/99**Date Resolved:****Comment Type:** Editorial**Resolution Status:** accepted**Notes:**

Item Number: 328**Commentor Name:** Scott**Page Number:** 8

Marin

Line Number: 21**Description of Edt:**

Delete the sentence "The resulting topology is very similar to a Hybrid Fiber Coax (HFC) cable TV network [69][69][3]."

Reason for Edit:

The sentence has several editorial and technical problems. Editorially, [69] appears twice, and the sentence should end with a period instead of a comma. Grammatically, the word very in the phrase "is very similar to" is odd construction and vague. If the phrase "very similar to" implies "almost the same as" then I take exception to the wording because HFC networks are many differences and only a few similarities to 802.16 networks. The text needs to either explain the differences and similarities or say nothing. In the interest of time and because there is not a requirement in the line 21 sentence, I recommend simply deleting the sentence.

Date Received: 11/3/99**Date Resolved:****Comment Type:** Technical**Resolution Status:** accepted**Notes:****Item Number:** 329**Commentor Name:** Scott**Page Number:** 16

Marin

Line Number: 22**Description of Edt:**

Delete the sentence "This amounts to 53 minutes of outage a year"

Reason for Edit:

The sentence applied when the prior sentence called out 99.99% availability. As the prior sentence now states a range from 99.9 to 99.999%, the sentence "this amounts to 53 minutes of outage a year" is incorrect. Because the subsequent sentence put the outage time for 99.999% availability into perspective, the sentence "this amounts to 53 minutes of outage a year" can be deleted without changing the meaning of the paragraph.

Date Received: 11/3/99**Date Resolved:****Comment Type:** Editorial**Resolution Status:** accepted**Notes:****Item Number:** 330**Commentor Name:** Scott**Page Number:** 16

Marin

Line Number: 40**Description of Edt:**

Delete the paragraph on lines 40-43.

Reason for Edit:

The paragraph has several editorial and technical problems. Editorially, I believe that G.826 limits the errored second ratio to be at most 0.04 and that the severely errored second ratio to at most 0.002 instead of "defining" these ratios to be exactly 0.04 and 0.002, respectively. As noted in line 29, unavailability begins at the onset of 10 consecutive SES. Availability goals in the range 99.9 to 99.999% are not the same as errored second ratio or severely errored second ratio; therefore, the sentence "Note that this is below the 99.99% goal" is incorrect because 99.99% doesn't apply to ES or SES. The sentence is also vague because the pronoun "this" is unclear. Because there are no requirements in lines 40-43 and because repairing the paragraph will take some time, I recommend deleting the paragraph.

Date Received: 11/3/99**Date Resolved:****Comment Type:** Technical**Resolution Status:** accepted**Notes:**

Item Number: 331**Commentor Name:** Scott
Marin**Page Number:** 20**Line Number:** 6**Description of Edit:**

Move Table 1 title from bottom to top of table.

Reason for Edit:

to follow conventional style for technical writing.

Date Received: 11/3/99**Date Resolved:****Comment Type:** Editorial**Resolution Status:** accepted**Notes:****Item Number:** 332**Commentor Name:** Scott
Marin**Page Number:** 20**Line Number:** 6**Description of Edit:**

Replace "Bitrate(s)" column with "Information Rate"

Reason for Edit:

To make it clear that the rates are payload information rates and not the over-the-air rates that include FEC bits.

Date Received: 11/3/99**Date Resolved:****Comment Type:** Technical**Resolution Status:** accepted-modified**Notes:** MAC Payload Rate**Item Number:** 333**Commentor Name:** Scott
Marin**Page Number:** 20**Line Number:** 6**Description of Edit:**Replace "Bit Error Rate" column "Maximum Ratio". Add BER to the Circuit Based rows so that BER 10^{-6} .**Reason for Edit:**

The column contains several types of ratios in addition to BER. It's incorrect to label the column only BER. In addition, the ratios are maximums.

Date Received: 11/3/99**Date Resolved:****Comment Type:** Editorial**Resolution Status:** accepted**Notes:****Item Number:** 334**Commentor Name:** Scott
Marin**Page Number:** 20**Line Number:** 6**Description of Edit:**

Replace "Delay (One way)" with "Maximum Delay (One way)"

Reason for Edit:

The delay requirement is a maximum and not a nominal as currently implied by the table.

Date Received: 11/3/99**Date Resolved:****Comment Type:** Editorial**Resolution Status:** accepted**Notes:****Item Number:** 335**Commentor Name:** Scott
Marin**Page Number:** 20**Line Number:** 6**Description of Edit:**

add text to define all ratios.

Reason for Edit:

What are the definition of all of the ratios CMR and SECBR mean?

Date Received: 11/3/99**Date Resolved:****Comment Type:** Editorial**Resolution Status:** accepted**Notes:**

Item Number: 336**Commentor Name:** Yee**Page Number:** 1

Jung

Line Number: 39**Description of Edit:**

Delete "a" after "...item because"

Reason for Edit:

Grammar

Date Received: 11/3/99**Date Resolved:****Comment Type:** Editorial**Resolution Status:** accepted**Notes:****Item Number:** 337**Commentor Name:** Yee**Page Number:** 4

Jung

Line Number: 19**Description of Edit:**

Replace second "Figure 1-1" with "Figure 1-2"

Reason for Edit:

Typo

Date Received: 11/3/99**Date Resolved:****Comment Type:** Editorial**Resolution Status:** accepted**Notes:****Item Number:** 338**Commentor Name:** Yee**Page Number:** 5

Jung

Line Number: 0**Description of Edit:**

Figure 1-2, replace "802.11 WLAN" with "WLAN"

Reason for Edit:

Bluetooth and 802.11 may both meet the requirements. Leave the description more general

Date Received: 11/3/99**Date Resolved:****Comment Type:** Technical**Resolution Status:** accepted**Notes:****Item Number:** 339**Commentor Name:** Yee**Page Number:** 17

Jung

Line Number: 22**Description of Edit:**

Replace "bit error rate" with "bit error ratio"

Reason for Edit:

To be consistent with section 10.2

Date Received: 11/3/99**Date Resolved:****Comment Type:** Editorial**Resolution Status:** accepted**Notes:****Item Number:** 340**Commentor Name:** Yee**Page Number:** 19

Jung

Line Number: 26**Description of Edit:**

Change "ATM" to "ATM Forum"

Reason for Edit:

To be consistent with IETF mentioned in the sentence

Date Received: 11/3/99**Date Resolved:****Comment Type:** Editorial**Resolution Status:** accepted**Notes:**

Item Number: 341**Commentor Name:** Guillemette**Page Number:** 9

Phil

Line Number: 19**Description of Edi**

Delete "This form ... the MAC protocol layer."

Reason for Edit:

This sentence seems to imply an implementation and not a requirement.

Date Received: 11/3/99**Date Resolved:****Comment Type:** Technical**Resolution Status:** rejected**Notes:**

Item Number: 342**Commentor Name:** Guillemette**Page Number:** 10

Phil

Line Number: 31**Description of Edi**

Delete paragraph.

Reason for Edit:

The content of the paragraph seems to fall under availability and QoS which are later in the document. It does not add any requirement and is not very informative.

Date Received: 11/3/99**Date Resolved:****Comment Type:** Technical**Resolution Status:** accepted**Notes:**

Item Number: 343**Commentor Name:** Guillemette**Page Number:** 10

Phil

Line Number: 36**Description of Edi**

Delete paragraph.

Reason for Edit:

The information is not required.

Date Received: 11/3/99**Date Resolved:****Comment Type:** Technical**Resolution Status:** accepted**Notes:**

Item Number: 344**Commentor Name:** Guillemette**Page Number:** 11

Phil

Line Number: 23**Description of Edi**

Delete lines 23, 24, 25, and 26 up to "ATM standards define..."

Reason for Edit:

The information is not relevant to what 802.16 is trying to do.

Date Received: 11/3/99**Date Resolved:****Comment Type:** Technical**Resolution Status:** accepted**Notes:**

Item Number: 345**Commentor Name:** Guillemette**Page Number:** 11

Phil

Line Number: 29**Description of Edi**

Delete line 29 and line 30 up to "802.16 protocols..."

Reason for Edit:

Information is not relevant.

Date Received: 11/3/99**Date Resolved:****Comment Type:** Technical**Resolution Status:** accepted**Notes:**

Item Number: 346**Commentor Name:** Guillemette**Page Number:** 11

Phil

Line Number: 29**Description of Edi**

change "SHOULD" to "MUST"

Reason for Edit:

This is an important service, and like IP and voice, it must be supported.

Date Received: 11/3/99**Date Resolved:****Comment Type:** Technical**Resolution Status:** rejected**Notes:****Item Number:** 347**Commentor Name:** Guillemette**Page Number:** 11

Phil

Line Number: 32**Description of Edi**

Delete sentence starting with "Thus".

Reason for Edit:

This requirement is pretty hard to test for. Not really the type of requirement that the document is trying to highlight.

Date Received: 11/3/99**Date Resolved:****Comment Type:** Technical**Resolution Status:** accepted**Notes:****Item Number:** 348**Commentor Name:** Guillemette**Page Number:** 12

Phil

Line Number: 10**Description of Edi**

Delete section (except last sentence)

Reason for Edit:

There is no requirement in this section.

Date Received: 11/3/99**Date Resolved:****Comment Type:** Technical**Resolution Status:** accepted**Notes:****Item Number:** 349**Commentor Name:** Guillemette**Page Number:** 16

Phil

Line Number: 22**Description of Edi**

delete the two sentences starting at "This ..."

Reason for Edit:

This information is not required.

Date Received: 11/3/99**Date Resolved:****Comment Type:** Technical**Resolution Status:** rejected**Notes:****Item Number:** 350**Commentor Name:** Guillemette**Page Number:** 16

Phil

Line Number: 43**Description of Edi**

delete sentence beginning with "Note..."

Reason for Edit:

serves no purpose.

Date Received: 11/3/99**Date Resolved:****Comment Type:** Technical**Resolution Status:** accepted-duplicate**Notes:**

Item Number: 351**Page Number:** 21**Line Number:** 16**Commentor Name:** Guillemette

Phil

Description of Edi

delete until line 36

Reason for Edit:

Integrated Services are not likely to play a very big role, if any at all, in IP QoS.

Date Received: 11/3/99**Date Resolved:****Comment Type:** Technical**Resolution Status:** accepted**Notes:****Item Number:** 352**Page Number:** 4**Line Number:** 19**Commentor Name:** Simon

Francois

Description of Edi

Replace the second "Figure 1-1" instance with "Figure 1-2"

Reason for Edit:

Provide the correct market reference

Date Received: 11/3/99**Date Resolved:****Comment Type:** Editorial**Resolution Status:** accepted**Notes:****Item Number:** 353**Page Number:** 5**Line Number:** 22**Commentor Name:** Simon

Francois

Description of Edi

Propose to replace "rain fall" with "atmospheric conditions"

Reason for Edit:

Atmospheric conditions, other than rain, such as snow, hail, fog, and even clouds may also alter the operating range of 802.16 radios.

Date Received: 11/3/99**Date Resolved:****Comment Type:** Technical**Resolution Status:** accepted**Notes:****Item Number:** 354**Page Number:** 9**Line Number:** 4**Commentor Name:** Simon

Francois

Description of Edi

Replace "servicse" with "services".

Reason for Edit:

Misspelled word

Date Received: 11/3/99**Date Resolved:****Comment Type:** Editorial**Resolution Status:** accepted**Notes:****Item Number:** 355**Page Number:** 11**Line Number:** 12**Commentor Name:** Simon

Francois

Description of Edi

Remove "ISDN PRI" from the list.

Reason for Edit:

The list already contains "Q.931" which is the ITU-T signaling protocol for ISDN BRI and PRI. Thus, ISDN PRI is redundant.

Date Received: 11/3/99**Date Resolved:****Comment Type:** Technical**Resolution Status:** accepted**Notes:**

Item Number: 356**Page Number:** 11**Line Number:** 11**Description of Edit:**

Add "Q.2931" to the list.

Commentor Name: Simon
Francois**Reason for Edit:**

ATM, as mentioned, elsewhere in the document, provides support for telephony and video conferencing. It seems natural that the ATM signaling protocol should be included here.

Date Received: 11/3/99**Date Resolved:****Comment Type:** Technical**Resolution Status:** accepted**Notes:**

Item Number: 357**Page Number:** 11**Line Number:** 36**Description of Edit:**

Add "(Q.931)" between "protocols" and "to establish"

Commentor Name: Simon
Francois**Reason for Edit:**

Provides the reader with a reference to the ATM message-based signaling protocol.

Date Received: 11/3/99**Date Resolved:****Comment Type:** Editorial**Resolution Status:** accepted**Notes:**

Item Number: 358**Page Number:** 13**Line Number:** 5**Description of Edit:**

Add "(Q.933)" between "defined and "and in use".

Commentor Name: Simon
Francois**Reason for Edit:**

Provides the reader with a reference to the Frame Relay signaling protocol.

Date Received: 11/3/99**Date Resolved:****Comment Type:** Editorial**Resolution Status:** accepted**Notes:**

Item Number: 359**Page Number:** 15**Line Number:** 22**Description of Edit:**

Replace "rain fall" with "atmospheric conditions"

Commentor Name: Simon
Francois**Reason for Edit:**

Atmospheric conditions, other than rain, such as snow, hail, fog and clouds may also affect the target performance levels.

Date Received: 11/3/99**Date Resolved:****Comment Type:** Technical**Resolution Status:** accepted**Notes:**

Item Number: 360**Commentor Name:** Simon
Francois**Page Number:** 17**Line Number:** 2**Description of Edit:**

Replace "rain fall (rain rate and droplet size and other factors)" with "atmospheric conditions (e.g.: rain rate and droplet size and other factors)".

Reason for Edit:

Atmospheric conditions other than rain (snow, fog, hail, may contributes to excessive attenuation.

Date Received: 11/3/99**Date Resolved:****Comment Type:** Technical**Resolution Status:** accepted**Notes:****Item Number:** 361**Commentor Name:** Simon
Francois**Page Number:** 17**Line Number:** 3**Description of Edit:**

Replace "rain fall" with "atmospheric conditions".

Reason for Edit:

Already addressed in previous comments

Date Received: 11/3/99**Date Resolved:****Comment Type:** Technical**Resolution Status:** accepted**Notes:****Item Number:** 362**Commentor Name:** Simon
Simon**Page Number:** 17**Line Number:** 5**Description of Edit:**

Replace "rain fall" with "atmospheric conditions"

Reason for Edit:

Already addressed in previous comments

Date Received: 11/3/99**Date Resolved:****Comment Type:** Technical**Resolution Status:** accepted**Notes:****Item Number:** 363**Commentor Name:** Simon
Francois**Page Number:** 17**Line Number:** 12**Description of Edit:**

Replace "rain fall" with "atmospheric conditions".

Reason for Edit:

Already addressed with previous related comments.

Date Received: 11/3/99**Date Resolved:****Comment Type:** Technical**Resolution Status:** accepted**Notes:****Item Number:** 364**Commentor Name:** Simon
Francois**Page Number:** 18**Line Number:** 4**Description of Edit:**

Delete the word "between"

Reason for Edit:

The sentence is meaningless as it stands

Date Received: 11/3/99**Date Resolved:****Comment Type:** Editorial**Resolution Status:** accepted**Notes:**

Item Number: 365**Commentor Name:** Simon
Francois**Page Number:** 18**Line Number:** 42**Description of Edi**

Replace "maximum error rates" with "minimum error rates".

Reason for Edit:

While it can be views both ways, a positive statement is better than a negative one!.

Date Received: 11/3/99**Date Resolved:****Comment Type:** Editorial**Resolution Status:** accepted**Notes:****Item Number:** 366**Commentor Name:** Simon
Francois**Page Number:** 18**Line Number:** 42**Description of Edi**

Replace "rain" with "atmospheric conditions".

Reason for Edit:

Already addressed in previous comments

Date Received: 11/3/99**Date Resolved:****Comment Type:** Technical**Resolution Status:** accepted**Notes:****Item Number:** 367**Commentor Name:** Simon
Francois**Page Number:** 21**Line Number:** 5**Description of Edi**

Moving the word "rate" at the end of "Non-Real-Time" and place it after "Variable Bit" so that the expression reads "Variable Bit Rate: Non-Real-Time".

Reason for Edit:

Consistency with the ATM Forum definition

Date Received: 11/3/99**Date Resolved:****Comment Type:** Editorial**Resolution Status:** accepted**Notes:****Item Number:** 368**Commentor Name:** Simon
Francois**Page Number:** 22**Line Number:** 41**Description of Edi**

Reorder the list in the following fashion: Fault management; Configuration management; Accounting management; Performance management; Security.

Reason for Edit:

Very minute point - This change provides the order compatible with the widely used acronym FCAPS (Fault, Configuration, Accounting, Performance, Security) to specify the 5 network management disciplines.

Date Received: 11/3/99**Date Resolved:****Comment Type:** Editorial**Resolution Status:** accepted**Notes:**

Item Number: 369**Page Number:** 23**Line Number:** 9**Commentor Name:** Simon
Francois**Description of Edi**

Add the following, or equivalent, to the end of the paragraph:
 "The 802.16 protocols MUST also permits subscribers to monitor performance service levels of the 802.16 services being provided at the delivery point".

Reason for Edit:

The current trend in the industry is that more and more 'users' of telecommunications services want to monitor the service being provided to them to insure compliance to the SLAs. The current text, as it stands, seems to address the 802.16 operator view point only.

Date Received: 11/3/99**Date Resolved:****Comment Type:** Editorial**Resolution Status:** accepted**Notes:****Item Number:** 370**Page Number:** 23**Line Number:** 13**Commentor Name:** Simon
Francois**Description of Edi**

Replace "BTS" with "base station"

Reason for Edit:

Maintain consistency with this version of the document.

Date Received: 11/3/99**Date Resolved:****Comment Type:** Editorial**Resolution Status:** accepted**Notes:****Item Number:** 371**Page Number:** 23**Line Number:** 22**Commentor Name:** Simon
Francois**Description of Edi**

No particular change proposed

Reason for Edit:

The 802.16 working group(s) may want to look at the work being done (if not already done so) by the 802.11 related to security. It is not suggested here that an 802.11 network is similar to a 802.16 network. However, there may be similar security issues.

Date Received: 11/3/99**Date Resolved:****Comment Type:** Technical**Resolution Status:** rejected**Notes:****Item Number:** 372**Page Number:** 23**Line Number:** 32**Commentor Name:** Simon
Francois**Description of Edi**

Delete space between "station at" and the start of the next line

Reason for Edit:

Facilitate reading of the document.

Date Received: 11/3/99**Date Resolved:****Comment Type:** Editorial**Resolution Status:** accepted**Notes:****Item Number:** 373**Page Number:** 23**Line Number:** 35**Commentor Name:** Simon
Francois**Description of Edi**

Delete the space between "station from" and the start of the next line.

Reason for Edit:

Facilitate the reading of the document

Date Received: 11/3/99**Date Resolved:****Comment Type:** Editorial**Resolution Status:** accepted**Notes:**

Item Number: 374**Commentor Name:** Simon**Page Number:** 34

Francois

Line Number: 6**Description of Edi**

Add "CoS - Class of Service" to the table.

Reason for Edit:

Provide consistency with the rest of the table; QoS is specified.

Date Received: 11/3/99**Date Resolved:****Comment Type:** Editorial**Resolution Status:** accepted**Notes:****Item Number:** 375**Commentor Name:** Simon**Page Number:** 34

Francois

Line Number: 6**Description of Edi**

Remove 'rate' at the end of "variable Bit Rate: Non-Real-Time rate" so that is reads "Variable Bite Rate: Non-Real-Time".

Reason for Edit:

Consistency with ATM Forum Definition

Date Received: 11/3/99**Date Resolved:****Comment Type:** Editorial**Resolution Status:** accepted**Notes:****Item Number:** 376**Commentor Name:** Marks**Page Number:** 0

Roger

Line Number: 2**Description of Edi**

Change title from:

"Preliminary Draft Working Document for 802.16 Broadband Wireless Access System Requirements"

to:

"802.16.1 Functional Requirements, Rev. 0"

Reason for Edit:

- (1) Drop language indicative of a preliminary status.
- (2) Use "Rev. 0" to allow easy migration path.
- (3) Use the new PAR number (802.16.1) to refer to the Air Interface standard.
- (4) Replace "System Requirements" with "Functional Requirements" because:

-The document specifies the functions that the network provides rather than requirements concerning the system implementation.

-Consistent with "IEEE 802 Functional Requirements" <<http://grouper.ieee.org/groups/802/11/fureq6-8.html>>.

-Consistent with "802.14 Cable-TV Functional Requirements and Evaluation Criteria" <<http://www.walkingdog.com/catv/94-002.pdf>>

-"Functional Requirements" was used in several contributions in support of the development of this document, including:

*802.16sc-99/7
Functional Requirements for the 802.16 Standard

*802.16sc-99/5
Functional Requirements for Broadband Wireless Access Networks

*802.16sc-99/2
802.6 Functional Requirements

Date Received: 11/3/99**Date Resolved:****Comment Type:** Editorial**Resolution Status:** accepted**Notes:**

Item Number: 377

Commentor Name: Marks

Page Number: 0

Roger

Line Number: 0

Description of Edit:

Reason for Edit:

Global replacement of "System Requirements" with "Functional Requirements".

For consistency with proposed change of title to "802.16.1 Functional Requirements, Rev. 0".

Date Received: 11/3/99

Date Resolved:

Comment Type: Editorial

Resolution Status: accepted

Notes: