

Tentative Minutes of the IEEE P802.11 Working Group

**Interim meeting
Shaumburg, Illinois
August 28-31, 1995**

Monday, August 28, 1995, 8:30 AM

The meeting was called to order at 8:45 AM Vic Hayes, chairman IEEE P802.11¹⁾ in the chair. Carolyn Heide secretary. Johnny Zweig managing document originals and copying, Wayne Moyers managing distribution and pigeon hole organization. Bob O'Hara handling the attendance list. The agenda document for this meeting is 802.11-95/175.

Objectives for this meeting, all groups

- Review findings of ad-hoc power management
- Outline conformance clause to correspond to D1.3
- Start Conformance Test Group
- Work on comments on Draft Standard (under LB)

1. Opening

1.0 Roll Call: People in the room were invited to introduce themselves.

1.1 Voting rights:

Voting at the working group level is by voting members only. Chair may permit observers to participate in debate. To become a voting member:

¹⁾ The officers of the Working Group are:

Mr. VICTOR HAYES
Chairman IEEE P802.11
AT&T Wireless Comms & Netw. Div.
Phone: +31 3402 76528
Fax: +31 3402 39125
E-Mail: Vic.Hayes@Utrecht.ncr.com

Ms. Carolyn Heide
Secretary IEEE P802.11
Spectrix Corp.
Phone: +1 708 491 4534
Fax: +1 708 467 1094
E-Mail: 71041.3262@compuserve.com

Mr. BOB O'HARA
Editor IEEE P802.11
Advanced Micro Devices
Phone: +1 408 987 2421
Fax: +1 408 987 2814
E-Mail: bob.ohara@amd.com

Mr. STUART KERRY
Vice Chairman IEEE P802.11
Symbol Technologies Inc.
Phone: +1 408 369 2634
Fax: +1 408 446 4630
E-Mail: stuart@psd.symbol.com

Mr. JON WALTER ROSDAHL
Vice Chairman IEEE P802.11
Novell Inc.
Phone: +1 801 429 3183
Fax: +1 801 429 7232
E-Mail: jrosdahl@novell.com

Mr. LEON SCALDEFERRI
Vice Chairman IEEE P802.11
NSA
Phone: +1 301 688 0293
Fax: +1 688 0289
E-Mail: lsscald@alpha.nscs.mil

Mr. DAVE BAGBY
Chair IEEE P802.11-MAC group
Advanced Micro Devices
Phone: +1 408 987 2423
Fax: +1 408 987 2800
E-Mail: david.bagby@amd.com

Mr. JIM McDonald
Vice-Chair IEEE P802.11-PHY group
Motorola Inc.
Phone: +1 708 576 3169
Fax: +1 708 576 8585
E-Mail: jim_mcdonald@wes.mot.com

Mr. GREG ENNIS
Editor IEEE P802.11
Phone: +1 408 356 4775
Fax: +1 408 358 8991
E-Mail: gennis@netcom.com

- participate in at least 2 out of 4 consecutive plenary meetings. Voting rights start at third meeting
- participation in at least 75% in meetings, in the room
- one interim may be exchanged for a plenary
- Voting members will get a token to be used at votes

Voting rights can be maintained:

- by participation in 2 plenary meetings within 4 consecutive plenary meetings
- one interim may be substituted for a plenary

Voting rights may be lost:

- after failing to pay the conference fee
- after missing two out of three consecutive letter ballots

Current membership status:

- 78+1 Voting members
- 10 nearly members
- 41 aspirant members

1.2 Attendance list, Registration: The attendance list was distributed - 75% attendance according to the attendance list is required to qualify for attending the meeting as a whole, so make sure to sign the book. Copies of the attendance list are handed out before the end of each meeting.

- important for administration of voting rights that the attendance book is used properly.
- sign per meeting (morning, afternoon, evening). Do not sign ahead.
- place initials. Do not cross or underline.
- circle the letter corresponding to the meeting you attend when signing (F=full 802.11, P=PHY, M=MAC group).

Check e-mail addresses in the book:

- some addresses have been struck, or have a \$-sign added to the right - those received complaints from the reflector
- please strike your e-mail address if you do not use it
- if you do not disagree to receiving very long files, mark bulk e-mail with yes

1.3 Logistics: Document distribution is done using pigeon holes - you will find your copies and messages in the referenced location in the expanding file folders in the slot *in front of* your name.

Document distribution:

- sign in for a slot, remember the letter and number
- pigeon holes are file folders with a letter id on each folder and a number on each slot
- in each folder are numbered slots, each of which is 'owned' by a person
- each person owns slot in front of number

Coffee breaks at 10 AM and 3 PM. 11:45 AM to 1:15 PM lunch

1.4 Other announcements

1.4.1 Apologies for not being able to attend

Received from Jon Rosdahl, Leon Scaldeferri, Stuart Kerry, Jan Boer, Chris Zegelin, Sarosh Vesuna, Rajiv Dhingra

1.4.2 Patent Policy

IEEE standards may include patented technology if there is no equivalent, noninfringing way of achieving the objectives of the standard, if it is justified for technical reasons, and if the patent holder agrees to nondiscriminatory licensing at reasonable rates.

Request all participants to indicate if they know patent on which 802.11 may infringe.

IP meeting Tues 5 PM - anyone who work with Vic on a letter to be written to participants asking for IP statements.

There is a discussion about whether there should be a discussion about whether or not there is an outstanding patent infringement issue currently. The decision is that, not being lawyers, this group may not be the appropriate people to discuss this - it is up to the IEEE office to tell us whether there is a problem. Vic will ask the IEEE standard office for input.

1.4.3 InterOperability Lab sign-ups

Before Vic can take a sign-up we have to set a consortium fee and charter. Vic has not held a charter meeting yet and so he can not take sign-ups. Vic can hold a charter meeting in conjunction with one of the IEEE meetings. He is willing to set-up charter meeting if 802.11 community wants to move forward with having a wireless consortium.

There is some discussion of whether the membership should not be biased toward any testing facility, there are others out there prepared to do 802.11 testing. While 802.11 defines the conformance tests, who ensures that testers are testing in conformance?

1.4.4 Other Announcements: none

2. Approval of the minutes of the previous meeting

2.1 Salt Lake City meeting, Document IEEE P802.11-95/88: no quorum

2.2 Maui meeting, Document IEEE P802.11-95-159: no quorum.

2.3 Matters arising from the minutes: none.

3. Reports

3.1 The Executive Committee, by Vic Hayes

Sending 802.11 D2 to liaison

- to ISO, agreed to send annexed to New Work Item proposal
- Submitted after review by 802.0 and 802.11

802.12 PARs

- Full Duplex Operation
- Above 100 Mbit/s operation (up to 4 Gbit/s)
- met with quite some opposition from 802.3
- second one challenged by Boal and Nicholas

3.2 The Editors, by Bob O'Hara: none

3.3 San Jose Finances: documentation not received, balance not transferred

3.4 Matters Arising from reports: none

4. Registration of Contributions:

For MAC group - 95/182, 95/183

For MAC/PHY group - 95/187, 95/188, 95/189

For PHY group - 95/180

For Conformance Test group - 95/190, 95/192

5. Adoption of Agenda: shown in the agenda document 95/175

Conformance Test group - Larry Zuckerman not here, but Peter Chadwick will lead.

Motion #1: To move conformance test meeting, full group, to Tuesday AM.

Moved by: Johnny Zweig

Seconded by: Jim McDonald

Motion 1 Discussion: none

Approved: 14 Opposed: 0 Abstain: 0 **Motion #1 passes**

Meetings will adjourn at 4:30 PM to allow time to get to the evening tour of the Motorola museum.

Motion #2: Adopt agenda as is until Tuesday AM.

Moved by: Dean Kawaguchi

Seconded by: Peter Chadwick

Motion 2 Discussion: none

Motion #2 passes by concensus

6. Unfinished Business:**6.1 Roadmap Letter Ballot**

If in the November meeting all, or a substantial part of, the no votes can be solved, then there will be a proposal to go out for a confirmation ballot. Then you have 15 days to confirm that you accept the changes which automatically changed your vote from no into yes. You are only required to answer if your vote is still no. You may answer with yes or abstain, but if you don't answer you will be counted as a yes. No comments are required on a confirmation vote.

Editorial, minor consistency things, how do these get fixed? The editors have the freedom to do that. But these should be made as letter ballot comments, otherwise the editors will not find them.

After confirmation ballot, go to sponsor ballot. 30 or more days before sponsor ballot, the IEEE sends out invitations to vote to Computer Society and IEEE members. Those that respond (many respond just to get a free draft) can vote. Then IEEE sends out the ballot and does the administration. That is a 40 day ballot.

Assuming that no votes are automatically changed to yes until there are 75% yes (by being processing in alphabetical order, or the easiest ones, or something), then the document goes to confirmation ballot automatically. People feel that a validation vote from the working group is required, rather than this automatically changing votes to meet percentage requirements. However, this is not what the ballot says on it.

There is some objection to counting no response to the confirmation ballot as a yes. All you know about people who didn't respond is that they didn't respond. No responses that are abstentions become yes, falsely affecting the population. Vic will go back to verify the confirmation ballot rules and look into the timing. Clarification to be provided tomorrow.

The rules are designed to move progress toward sponsor ballot, people are well informed of the consequence of their actions. A confirmation vote is biased to succeed - that is a valid thing to do (according to the speaker).

How is the decision made to go to confirmation ballot versus full letter ballot - it is a 802.11 working group decision, but above 75% yes vote, counting resolved no votes.

What is the typical use of confirmation ballot - is it that only editorial things are left by then? The November meeting can decide whether to send a confirmation ballot or a letter ballot next.

Motion #3: **To adjourn.**

Moved by: Peter Chadwick

Seconded by: Wayne Moyers

Motion 3 Discussion:

Motion #3 passes by consensus

8. Adjourn for subgroups - 10:30 AM

Monday AM & PM, 28 August, 1995

MAC & PHY subgroups

Tuesday AM, 29 August, 1995

Conformance Test ad-hoc group

Tuesday PM, 29 August, 1995

MAC & PHY subgroups

Wednesday AM & PM, 30 August, 1995

MAC & PHY subgroups

Thursday AM, 31 August, 1995

MAC & PHY subgroups

Thursday AM, 31 August, 1995

Full Working Group

The meeting was reconvened at 10:30 AM, by chairman Vic Hayes, Carolyn Heide secretary. 22 people present, of which 18 are voting members.

9. Opening

9.1 Announcements

9.1.1: telephone number change in the Netherlands
+31 340297xxx becomes +31 30 609 7xxx

9.1.2: January meeting, starting January 8. Three volunteers:

- AMD, Monterey (or somewhere else away from San Jose)
- TI, Dallas
- MACOM, San Diego

All 3 scout the hotels and report findings.

Chair to decide, any advice? Remember difficulty of getting to the selected place. The chair should go ahead and make the decision himself.

9.1.3: Timeline 95/205

This timeline will be reviewed at the November meeting, to decide whether the May 10 deadline can be met, or we need to go for the August 9 deadline. Then we have a better idea of the scope of the current letter ballot result.

9.2 Document List Update:

9.3 Agenda Adjustments: Agenda approved by consensus

10. Reports

10.1 MAC Group, by Dave Bagby

Document 95/214 is the report from this group.

Request for people to please spend time reviewing state machines.

In the discussion of the uncompressed TIMs it is pointed out that there is an error in a figure in that subclause of D2 which would not have to be fixed if either of these papers is adopted.

There was a discussion about whether the disfunction of the TSF timer because of information not supplied by the PHY could be fixed simply by using a MIB variable for "through delay" from the PHY.

10.2 PHY Group, by Jim McDonald

Considered comments for letter ballot. Discussed issues:

1. CCA. The problem that 4 level 2 Mb option presents to the CCA algorithm, especially signal detect in pseudo random phase. That takes sophisticated devices, it may not be achievable by simple devices. Also discussed a timing issue - an ambiguity in reference times similar to the MAC issue about reference times.
2. Japanese specification. A recommendation was generally agreed upon, that our standard should refer to interoperability issues only. There is some discussion about wanting to put the call sign in the MPD. But the call sign bits have to be the first its out. If this standard isn't going to meet Japanese requirements, there are some things that are not needed, but they should be left in.
3. Perhaps a MAC problem - the Contention Window (CW) countdown overlaps the frequency change in an FH PHY, perhaps the CW countdown should be delayed during frequency change. If the PHY simply reports CCA busy during the hop time the counter will be stopped. The PHYs should definitely say in the standard whether or not they are reporting busy during frequency change (if they do frequency change), it should not be left to the implementers. As an aside, it should be noted that if a PHY reports receiver start and passes up the PLCP header, there had better be a receive end later, whether or not you lost signal in the middle. If there is not an end for the start the MAC will break as it is now.

10.3 Conformance Test, by Peter Chadwick

Document 95/216 is the report from this group.

There is a need to contact Larry Zuckerman and find out what his status is with respect to this committee. Wayne Moyers will contact him and report back to Vic Hayes.

10.4 IRP Letter, by Vic Hayes

The letter is Document 95/204 . Plan is to send it to the General Managers at the facilities of all people who have ever worked in 802.11. Some people think that this will get nowhere, there may be no one at that address by that title, the letter will be treated as junk mail. The problem is finding the address of the company office where the president is - we know the address of the member. Might be better to send to the legal consul at the company address.

The idea is to try to get to the patents held by companies or divisions of companies that have or have had members of this committee in case this committee's work is covered by those patents. A sentiment is expressed that when that has happened in the past the companies involved have had trouble enforcing infringement claims.

The IEEE office has been sent this letter and has responded that this is unwarranted and unnecessary. The IEEE disclaimer covers it.

A sentiment is expressed that this behavior is offensive - sending this letter saying you have to respond to me by such and such a date. Others say it is not offensive, just asking for information and saying when we need to know it.

Straw poll: in favor of sending to this to facilities of everyone that ever participated: (9, 4, 3)

There is a patent board meeting in September, Vic will get their output and make decision based on that.

There is a request - if they say no, ask them to clarify what we should do in a case like this. What do we do when we know of patents that exist that seem to be relevant, but don't have the expertise to tell as an individual member.

11. Unfinished Business**11.1 Recap of Output Documents:**

- Letter to IPR people subject to IEEE findings.
- Mention recommendations papers from this meeting in cover letter of first mailing, and on email.

11.2 Recap of Document Distribution: we did. 95/219 highest number assigned to date.

11.3 Next Meeting**Objectives for next meeting**

- quick votes on Letter Ballot reference papers for MAC group
- process all D2 ballot results
- review initial MAC PICS Proforma
- progress on Conformance Test

Mailing Dates: September 1 and October 8

11.5 **Future Meetings:** see chart. Reminder to make reservations for November.

11.4 **Other Intermediate Meetings:** Start on Monday morning 8:30 AM in November, two rooms. Book two small rooms for Friday also just in case.

12. **New Business:** none.

18. **Closure** - meeting adjourned at 12:30 PM.

Tentative Meeting Schedule

Date	Month	Year	Place	Type	Location	Host
6-10	Nov	1995	Montreal, PQ	Plenary	Queen Elizabeth	
8-11	Jan	1996	TBD	Inter	TBD	
11-15	March	1996	La Jolla, CA	Plenary	Hyatt Regency	
TBD	May	1996	TBD	Inter	TBD	
8-12	July	1996	Netherlands	Plenary		
TBD	Sept	1996	TBD	Inter	TBD	
11-15	Nov	1996	Vancouver, BC	Plenary	Hotel Vancouver	
11-15	March	1997	Irvine, CA ?	Plenary	Irvine Marriot?	
7-11	July	1997	Lahaina, HI ?	Plenary	Hyatt Regency Maui ?	
10-14	Nov	1997	Vancouver, BC ?	Plenary	Hotel Vancouver?	

Appendix 1

Attendance list

Title and first name	Last name	status	Company	communications
Mr. DAVID	BAGBY	voter	Advanced Micro Devices david.bagby@amd.com	+ 1 408 749 5425
Mr. C. THOMAS	BAUMGARTNER	voter	Spectrix Corp. ctb8@aol.com	+ 1 708 317 1770
Mr. PHIL	BELANGER	voter	XIRCOM pbelange@xircom.com	+ 1 415 691 2500
Mr. SIMON	BLACK	voter	Symbionics Networks Ltd sab@symbionics.co.uk	+ 44 1223 421025
Mr. PETER E.	CHADWICK	voter	GEC Plessey Semiconductors Inc. gecp.peterc@applelink.apple.com	+ 44 1793 518080
Dr. JONATHON Y.	CHEAH	voter	Solectek Corporation X3069 jcheah@airlan.com	+ 1 619 450 1220
Mr. WIM	DIEPSTRATEN	voter	AT&T WCND Utrecht wim.diepstraten@utrecht.attgis.com	+ 31 3402 97482
Mr. MICHAEL	FISCHER	voter	Digital Ocean Inc. mfischer@child.com	+ 1 210 614 4096
Mr. IAN	GIFFORD		M/A-COM Inc. giffordi@corp.macom.com	+ 1 508 442 4650
Dr. JAMES	HARRER	voter	Valor Electronics, Inc. harrer@valorsd.mhs.compuserve.com	+ 1 619 537 2643
Mr. VICTOR	HAYES	voter	AT&T WCND Utrecht Vic.Hayes@Utrecht.attgis.com	+ 31 3402 97528
Ms. CAROLYN L.	HEIDE	voter	Spectrix Corp. 71041.3262@compuserve.com	+ 1 708 317 1770
Mr. BILL	HUHN		Motorola Inc. bill_huhn@wes.mot.com	+ 1 708 576 7207
Mr. DONALD C.	JOHNSON	voter	AT&T GIS WHQ 5E donald.c.johnson@daytonoh.attgis.com	+ 1 513 445 1452
Mr. DEAN M.	KAWAGUCHI	voter	Symbol Technologies Inc. deank@psd.symbol.com	+ 1 408 369 2629
Ms. ISABEL	LIN	voter	Toshiba America Info Systems Inc. isabell@tais.com	+ 1 714 583 3854
Mr. RONALD	MAHANY	voter	Norand Corporation mahanyrl@norand.com	+ 1 319 369 3552
Mr. BOB	MARSHALL	voter	Philips Semiconductors marshall@scs.philips.com	+ 1 408 991 2722
Mr. JIM	McDONALD	voter	Motorola Inc. jim_mcdonald@wes.mot.com	+ 1 708 576 3169
Mr. WAYNE D.	MOYERS	voter	WiSE Communications Inc wayne@tetherless.com	+ 1 408 338 7562
Mr. BOB	O'HARA	voter	Advanced Micro Devices bob.ohara@amd.com	+ 1 408 749 4952

Appendix 1

Attendance list

Title and first name	Last name	status	Company	communications
Mr. ANIL K.	SANWALKA		Neesus Datacom Consultants anil@interlog.com	+ 1 416 724 8127
Mr. THOMAS	SIEP	voter	Texas Instruments siep@hc.ti.com	+ 1 214 995 3675
Mr. JOHN	SONNENBERG	voter	Pulse Engineering Inc. johnsonenberg@pulseeng.com	+ 1 619 674 8360
Mr. MIKE	TROMPOWER	voter	Aironet Wireless Comms. Inc. mtrom@aironet.com	+ 1 216 665 7920
Mr. RYAN H.	TZE	voter	Toshiba America Info Systems Inc. ryant@tais.com	+ 1 714 587 6769
Mr. RICHARD E.	WHITE	voter	Motorola Inc. rick_white@wes.mot.com	+ 1 708 576 7878
Mr. STEPHEN	WOOD	voter	Andrew Corporation stephen.wood@AEP-MAIN-PO1.ANDREW.sprint.com	+ 1 214 952 1139
Mr. RALPH C.	YEAGER		IBM Corporation ralphy@vnet.ibm.com	+ 1 919 543 3779
Mr. TIMOTHY M.	ZIMMERMAN		Norand Corporation zimmermt@norand.com	+ 1 319 369 3471
Mr. JOHNNY	ZWEIG	voter	XIRCOM jzweig@xircom.com	+ 1 415 965 5964