Tentative Minutes of the IEEE P802.11 Working Group

Interim meeting
Waltham, MA
May 6-9, 1996

Monday, May 6th, 1996, 8:30 AM

The meeting was called to order at 8:45 AM Vic Hayes, chairman IEEE P802.11[1] in the chair. Chris Zegelin secretary. Stuart Kerry managing document originals and copying and Whoever managing distribution and pigeon hole organization. Chris Zegelin handling the attendance list. The agenda document for this meeting is 802.11-96/73.

Objectives for this meeting, all groups

- Continue processing of D3 LB
- Send WG Letter Ballot D4
- Resolve any multirate issues
- Japanese call sign resolution
- Conformance testing
- FCC wishlist
- France and Spain Hop patterns

1. Opening

Notes: general notes not available.

1.0 Secretary: (Temporary) Chris Zegelin.

---

[1]T The officers of the Working Group are:

Mr. VICTOR **HAYES**
Chairman IEEE P802.11
Lucent Technologies
Phone: +31 30 609 7528
Fax: +31 30 609 7498
E-Mail: v.hayes@ieee.org

Ms. Carolyn **Heide**
Secretary IEEE P802.11

Phone: +1 847 945 6859

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. CHRIS **ZEGELIN**
Vice Chairman IEEE P802.11
Symbol Technologies Inc.
Phone: +1 408 369 2667
Fax: +1 408 369 2740
E-Mail: chrisz@psd.symbol.com

Mr. GREG **ENNIS**
Editor IEEE P802.11

Phone: +1 408 356 4775
Fax: +1 408 358 8991
E-Mail: gennis@netcom.com

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. DEAN **KAWAGUCHI**
Chair IEEE P802.11-PHY group
Symbol Technologies Inc.
Phone: +1 408 369 2629
Fax: +1 408 369 2740
E-Mail: deank@psd.symbol.com

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

1.2 Voting rights:

Participation in debates, moving and seconding is only permitted by voting members, in all 802.11 meetings (at all levels). The subgroup chairs may permit observers to participate in debates.

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

        69 - Voting members

        12 - Aspiring voting members

        25 - Nearly voting members

1.3 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

1.4 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

Conference fee put on hotel bill (see later) 2 PM Tues.

Coffee breaks at 10 AM and 3 PM. Noon to 1:00 PM lunch

1.5 Other announcements

1.5.1 $130 raised for Leon Scaldeferri and donated to Chesapeake Habitat for Humanity in Baltimore, Maryland, on request of the family.

1.5.2 Help Preparing next mailing, Thursday evening: Stuart Kerry, Ian, Brian,

2. Approval of the minutes of the previous meeting

2.1 Last meeting minutes were lost, No quorum available to approve last minutes

2.2 Matters arising from the minutes: none

3. Reports

3.1 The Executive Committee, by Vic Hayes

Document 90/67 presented

Need to compare 802.11 with HyperLAN.

802.11 assigned to make a new proposal for approval at July ExCom meeting

Looking for editors for international ISO SC6

3.2 The Editors:

problems with draft. It is printable with win95, but win3.x word 6.0c has problems. This needs to be resolved. No other issues

3.3 The Standing Committee on Regulatory

Rules summarised in doc 96/78

Needs 5 members plus a chair

4. Review of contributions: Several new contributions. Not listed here.

5. Other business:

Question about new PHY's. May need new PAR. Ask PHY group if they want to move forward. Not enough info on intent of 3 Mbit/s to know how to proceed. 1st draft, schedule impacts. Plenary needs to make a decision.

Motion #1:	*Moved that PHY group study the feasibility of incorporating higher data rate PHY's into the current version of the standard and report back to the plenary.*
Moved by:	Zweig
Seconded by:	Pablo
Motion Discussion:	

Want more info on impact
_____

Motion #2:   *to postpone till Wed plenary.*

Moved by: Pablo
Seconded by: Zweig

Motion Discussion:

Want more info on impact

Vote: 15/0/4   **Motion #2 passes**
                                        Motion #1 postponed till Wed Plenary
_____

6. Unfinished Business:

6.1 Multi-rate

Get it duplicated and out for review. Postponed till Wednesday. No objections

6.2 Liaison statement to ISO

Postponed till July and pre-discuss on reflector. No objections

6.3 Editor for ISO

September meeting in Guernsey.

7. New Business:

Johnny requests status report on where we are with schedule. Review now. Progress of standard.

7.1 Broadcast/Multicast

MAC issue, not full plenary. Refer to MAC group and review on Wednesday.

7.2 Press Release

Wait for proposal. Press release, Bob Egan will work to make this happen. Leakage from reflector deemed a problem

7.3 Progress of standard

Wanted a status update on where we are on the standard.

Discussion:
Could not capture discussion on version that is sent to sponsor ballot. The question is "what happens if we fail confirmation ballot?". "How do you define consensus?". Johnny asks for a queue. Got one. What confirmation ballot means was explained. We will not change the letter ballot question. Based on 802.11 charter to working group, Chair to determine. The major issue centers around the difference between getting a 75% vote that states "forward the draft" and the perceived need for much better than 95% YES votes in order to get through the executive committee. The request is that the groups decision be followed, and not allow the chair alone to make a the decision as to when to forward to sponsor ballot.
Note form Chair: In later discussions the chair understood that the issue was that, according to the rules, 802.11 need to pass a motion to reconsider the LB decision to include the comments.

8. Adjourn to subgroups: 12:00 Noon

<div align="center">

Monday PM, 6 May, 1996
MAC & PHY subgroups

Tuesday AM & PM, 7 May, 1996
MAC & PHY subgroups

Wednesday AM, 8 May, 1996
MAC & PHY subgroups

</div>

Wednesday PM, 9 May, 1996
Full Working Group

The meeting was reconvened at 1:15 PM, by chairman Vic Hayes, Chris Zegelin secretary.

9. Opening

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

9.2 Document list update:

interim result files are on diskette, make sure that headers and footers are correct on submissions. Diskette with 802 rules is available.

9.3 Agenda adjustments: for this afternoon

Multirate: covered in MAC group

Broadcast/Multicast: covered in MAC group

Press Release

Asked for objections to keeping the meeting schedule as proposed. There were no objections from the floor.

9.4 Announcements:

Hard to handle votes from nearly voting members, will be taken into account. There needs to be a clarification of the rules.

John Reed; when he published NPRM 96-8: Comments due June 19: Reply comments Jul. 19

Receipts for the $100 fee are available from Vic. They did not appear on the Hotel bill

Plan is to get D4 out this meeting, vote, resolve comments in July and then go for confirmation ballot. There are changes to the schedule as per the agenda. Need a Quorum to go to sponsor ballot.

Will change rule for removing people from the voting roles, i.e. Interim meeting before the earliest valid plenary meeting will not be counted. So that:

Int, Plen, Int, Plen, Int, Plen, Int, Plen

100, 100, 0,   0,   0,   0,   0,   0 ends voter status

100, 100, 0,   0,   50,   0,   0,   10 ends voter status

AMP has offered meeting rooms for the August meeting in Harrisburg. Made reservation for 5 day meeting. Need count for hotel reservation. Cost $65 per night. Meeting fees are about $15 per day.

July meeting: Hotel reservations closes at the end of May.

Issue raised that August meeting is just before labor day. Some people may not attend as a result. Further questions about the requirements and limitations of the confirmation vote, after the July meeting. The answer to this could effect our ability to go to sponsor ballot. Discussion on the meaning of confirmation ballot.

10. Cross group Issues

10.1 Multiple rates

The multiple rate vote in the MAC group was 14:0:2. The paper with the changes has been stuffed. There are some impacts on the PHY clauses. Dean pointed out that the FH PHY does multirate CCA. addressed the intent of the requirements in FH group. May need to make minor adjustments to text to make everything consistent.

10.1 Broadcast/Multicast

The MAC group does not need bring this to the main group at this time.

10.4 Press release

Why is there going to be a press release. Need to work on perception that draft is not moving forward. There is no proposal on the floor.

11. PHY resolutions

Motion #3:	**To accept the France and Spain hop patterns in 96/68**

Moved by:	The PHY Group
Seconded by:	Jim Renfro

Motion Discussion: ???

Vote: 27:0:1	*Motion #3: passes*

Motion #4:	**Changes made to paragraph 14.3.3.2.1 by changing the time to 22 µs. from 20 µs. and adding the words "synchronous" and "asynchronous" to the text. Additionally, add the sentence to paragraph 14.6.15.3 " that starts synchronously with respect to slot times as specified in subclause 14.3.3.2.1" and "In the presence of any 802.11 compliant 1 Mbit/s FH PHY signal above -85 dBm that starts asynchronous with respect to slot times as specified in subclause 14.3.3.2.1, the PHY shall signal busy with 70% probability of detection during the preamble within the CCA assessment window."** **(Note that this was copied from a file, not from the presentation CJZ)**

Moved by:	The PHY Group
Seconded by:	Art

Motion Discussion:

Vote: 21:0:7	*Motion #4: passes*

Motion #5:	**To expand the rate field from one bit to two.**

Moved by:	The PHY Group
Seconded by:	Naftali

Motion Discussion: Clarified that reserved fields are not to be used by conforment implementations. The reason for the change was to allow a current radio to understand what to do with CCA for a rate that it doesn't know about. Question called by Jim Renfro ?? Passed

Motion #6 to amend:	**To amend the motion to change the coding for the two reserved rates to "undefined higher rate A and B"**

Moved by: Johnny Zweig
Seconded by: ??

Motion Discussion: .That the PHY layer has some indicator to know that something is different.

Vote: 21:3:6   *Motion #6: passes Motion #5 amended*

Motion #7 to amend:	**To amend the motion to add the text "that compliant devices may never send the 10,11 codes"**

Moved by: Art Lashbrook
Seconded by: Pablo

Motion Discussion: .

Vote: 15:5:4   *Motion #7: passes Motion #5 amended*

Motion #8:	**To refer the previous motion back to the FH PHY group for review.**

Moved by: Art Lashbrook
Seconded by: Jim Renfro

Motion Discussion:

Vote: unanimous   *Motion #8: passes Motion #5 as amended referred back to the PHY group*

Motion #9:	**Accept the following text changes to FH section.... lots of text re CCA algorithm. This includes accommodation of unspecified higher rates.**

Moved by: The PHY Group
Seconded by: Johnny Zweig

Motion Discussion: The CCA algorithm changes will only work for rates higher than 2 Mbit/s.

Vote: 16:1:10   *Motion #9: passes*

DS PHY presentation

Motion #10:	**To accept changes to DS PHY to accommodate multirate. Actual text was long.**

Moved by: The DS PHY group
Seconded by: Wim

Motion Discussion: Asked the MAC guys who worked on multirate if this was compatible. Answer was yes.

Vote: 14:0:8   *Motion #10: passes*

Conformance testing: Slide with some of the discussion. Decided to add two PLME parameters to aid with conformance testing.

Motion #11:	To add the text to provide the two optional but recommended test PLME parameters.

Moved by: The DS PHY group
Seconded by: Mike Trompower

Motion Discussion:

Vote: 12:1:10   *Motion #11: passes*

IR PHY presentation

responded to comment that the CRC16 was different from all other 802.11.

Motion #12:	To bring clause 16.2.4.6 into alignment.

Moved by: The PHY group
Seconded by: Michael

Motion Discussion: None

Vote: 19:0:4   *Motion #12: passes*

Motion #13:	To accept the recommendation as outlined in document 96/58 by the FH group to bring to the full working group a request to provide an official 802.11 position on the NPRM 96-8.

Moved by: The PHY group
Seconded by: Stuart Kerry

Motion Discussion: The Chair ruled the motion out of order.

Appeal #1.

Appeal discussed with most in favor of appeal..

Vote: 0:18:6   **Chair overruled**

Call the question by Dave Bagby; second by Dean passed

Vote: 9:6:8   *Motion #13: passes*

12. MAC resolutions:

There is a question about the tolerance on the SIFS time. The question is not about the absolute times, just how the value is specified. The tolerance is really on the MAC prc delay. The proposal is to make the tolerance 10% of the slot time. The PHY will then provide the lower bound.

13. Conformance Testing:

Nothing on conformance testing.

14. Evening meeting @ 8 in main room

15. Adjourn: 5:40 PM

Thursday AM, 9 May, 1996
MAC & PHY subgroups

Thursday PM, 9 May, 1996
Full Working Group

The meeting was reconvened at 1:20 PM, by chairman Vic Hayes, Chris Zegelin secretary.

15. Opening

15.1 Announcements

15.1.1 Vic showed the Holland power connector, asked for power strips. Also need phone jacks.

15.1.2 Mystery payments, need to resolve payments.

15.1.3 Doc 96/96 Proposed names.... S/B 96/97

15.2   Document list update: updated the list.

15.3   Agenda adjustments: none

16. Reports

16.1 MAC Group, by Dave Bagby

<u>Goals</u>
We had one goal - Process rest of D3 LB comments and forward D4 for sponsor ballot.
We made it. (all but one)

<u>The MAC report is paper 96/93.</u> .

Clause 1 Status

- **Completed - in Plenary Mar/96**

Clause 2 Status

- **Completed - in Plenary Mar/96**

Clause 3 Status

- **Completed - in Plenary Mar/96**

Clause 4 Status

- Completed - in Plenary Mar/96

Clause 5 Status

- Completed - in Plenary Mar/96

Clause 6 Status

- Completed - in Plenary Mar/96

Clause 7 Status

- Most comments Adopted in Mar/96 Plenary
- Rest handled this week.
- Details to follow in report.

C7: C#101:

- needed work to supply missing Challenge text element.
Done - only a reference correction needed so correction was editorial not technical - author agrees - comment closed with author consent.

Clause 8 Status

- Completed - in Plenary Mar/96

Clause 9 Status

- Most comments adopted Mar/96 plenary
- 30-40 comments processed this week.
- Details to follow in report.

C9-C# 102, 103

- PS poll etc

Motion #14:   decline 102, 103 withdrawn, text added to clarify actions
- The MAC group, 2nd Wim

Plenary Vote: 19, 0, 3   Motion #14: passes

C9-C# 108

Motion #15:   accept - only send CTS if nav clear
- The MAC group, 2nd Johnny

Plenary Vote: 20, 0, 3   Motion #15: passes

C9-C# 112

Motion #16:   back off after xmit, rec=accept
- The MAC group, 2nd Michael

Plenary Vote: 19, 0, 2   Motion #16: passes

C9-C# 122

Motion #17:   collapse 2 overlapping sub section text re directed MPDU
   • **The MAC group, 2nd Michael**

Plenary Vote: 18, 0, 3   Motion #17: passes

C9-C# 136

Motion #18:   delete some text from 9.2.8 (explanatory)
   • **The MAC group, 2nd Simon**

Plenary Vote: 18, 0, 1   Motion #18: passes

C9-C# 149

Motion #19:   contradiction fixed re CF ack vs null data frame
   • **The MAC group, 2nd Michael**

Plenary Vote: 19, 0, 1   Motion #19: passes

C9-C# 150

Motion #20:   clarify sentence re PCF issuing of some fame types
   • **The MAC group, 2nd Michael**

Plenary Vote: 19, 0, 0   Motion #20: passes

C9-C# 155

Motion #21:   adding word to 9.2.5.2 re when use back-off detail
   • **The MAC group, 2nd Johnny**

Plenary Vote: 16, 0, 0   Motion #21: passes

C9 - C#105

   • **frame exchg sequences doc 96/76**

Motion #22:   adopt 96/76 as amended by MF and discussion - revised paper
                            provided by JZ to for edit into clause 9 text.
   • **The MAC group, 2nd Johnny**

Plenary Vote: 18, 0, 0   Motion #22: passes

C9: C142

Motion #23:   re resetting NAV condition.
   • **The MAC group, 2nd Michael**

Plenary Vote: 18, 0, 1   Motion #23: passes

C9, C#: 126, 137

- clarifies PCF operation re getting on medium - requires sensing before.

Motion #24:   MIB change for DTIM default value. from 5 to 1.
- **The MAC group, 2nd Wim**

Plenary Vote: 19, 0, 1   Motion #24: passes

C9: c#: 133, 134, 135, 130, 113 Back off and Retry

- **clause 9.2.5.3**

Motion #25:
                          error recov responsibility of initiating sta of fame sequence
                          Docs error cases
                          clarifies retry limits and counts
- **The MAC group, 2nd Johnny**

Plenary Vote: 19, 0, 1   Motion #25: passes

Clause 9: 139, 138

- **Time Out Stuff**

Motion #26:   ACK and CTS subclauses added para to deal how time out is
                          detected,   distinguishes   different   cases.
                          mostly wording improvement.
- **The MAC group, 2nd Johnny**

Plenary Vote: 20, 0, 1   Motion #26: passes

C9 - C#154 -

- **frags in order (not MSDUs in order)**

Motion #27:   accept.
- **The MAC group, 2nd Michael**

Plenary Vote: 20, 0, 1   Motion #27: passes

Clause 10 Status

- **Completed - in Mar/96 plenary.**

Clause 11 Status

- **Most handled in Mar 96 Plenary**
- **remainder processed this week.**
- **details to follow:**

Clause 11: C#43, 42

| *Motion #28:* | re clarification of PSP - must get, vs can get data from AP reopened in Mar plenary - swapped 42/43 so that 42 is rec changes clause 11.2.1.4f |

- The MAC group, 2nd Simon

Plenary Vote: 19, 0, 0   **Motion #28: passes**

Clause 11 C#17:

- re randomization of beacons at TBTT

| *Motion #29:* | change 11.1.2.2 |

- The MAC group, 2nd Simon

Plenary Vote: 19, 0, 0   **Motion #29: passes**

Cross Clause Subjects

BC/MC reliability

- **Clause 9: C#21: multi-cast reliability from Jan (multiple comments)**
- **bcast reliability Clause 11 C# 14,44,59**

| *Motion #30:* | to adopt 96/15 and 96/16 |

- The MAC group, 2nd Johnny

Plenary Vote: 4, 7, 10   **Motion #30: fails**

- **Comments still open - not closed.**

Multi-rate

- **Clause 7: C#72,74**
- **Clause 9: C#9**
- **Clause 11: c#67,91,92,100,102**
- **General c#124**

| *Motion #31:* | Move to accept 96/79R1 + change to encoding of supported rates, and incorporate into draft, and close related LB comments accordingly. |
| *Plenary Actions:* | Amended to be as above "except for the portion of 96/79R1 which pertains to clause 14 and 15. |

- The MAC group, 2nd Johnny

Plenary vote on amended motion: 16, 0, 1   **Motion #31: passes**

General and Annex Comments

- most handled in Mar 96 Plenary
- Remainder processed this week
- Details to follow

general C#1:

- **explicit that CF frames not used outside Cf period**

Motion #32:   accepted D3.1 statement added to 9.3.3.5
- The MAC group, 2nd Tom

Plenary Vote: 11, 0, 2   **Motion #32: passes**

---

general C#121 -

- unable to process - refers to previous letter ballot comment with out any specific reference
- fails comment instructions.

Motion #33:   closed - we looked, no action requested -
- The MAC group, 2nd Johnny

Plenary Vote: unan   **Motion #33: passes**

---

general C#122 -

- minimally conforment network statement per PAR requested.
- rec add def to clause 3 and ref in PICs.

Motion #34:   to add in clause 3 (defs) the following:
A minimally conforment IEEE P802.11 network is one in which there are at least two Stations in a single BSA which are conforment with P802.11.
- The MAC group, 2nd Tom

Plenary Vote: 15, 0, 1   **Motion #34: passes**

---

general C#123 -

- connection, connectionless, voice service (VH) no action requested in comment

Motion #35:   accepted without action and closed.
- Action requested (none) accepted
- The MAC group, 2nd Michael

Plenary Vote: 12, 0, 4   **Motion #35: passes**

General: Editorial comments

- 107 thru 111, 114, 115, 120, 125, 126, 128 editorial
- Editors will process for D4.0

General: Notation

Motion #36:   General C#127 k vs. K - Fixed in D3.1 -
- The MAC group, 2nd Michael

Plenary Vote: 13, 0, 2   **Motion #36: passes**

General: Patents

- general c#2: dissatisfaction with Patent due diligence / procedure following.

Motion #37:   **refer to Vic to answer re procedure part and for contact to Apple.**
Plenary motion: to close w/o taking action (mover says intent is to not take action writ
to draft text) on basis that comment is not technical in nature.
- **Bob, 2nd Keith**

plenary vote: 15, 1, 1   **Motion #37: passes**

MAC Work note:

From here on in report the comment tables (rev 7) have not yet been updated at time of
report to reflect thurs morn actions - this needs to result in rev 8 of tables for mailing.

Annex: State machine

- **general c#113 - state machines**

Motion #38:   **to close with "we have a volunteer to update the annex" - comment
author accepts resolution.**
- **The MAC group, 2nd Chris**

Plenary Vote: 15, 1, 1   **Motion #38: passes**

State machines update 96/2

Motion #39:   **that we adopt what MF has today for informative annex update
and completed updates to be made avail to editors before D4.0 is
published.**
- **The MAC group, 2nd Michael**

Plenary Vote: 12, 1, 3   **Motion #39: passes**

PICS Update

- **general c#s: 3 thru 9, 104, 105, 106, 112 - PICs issues.**
- **3, 4 are editorial.**
- **recs:**
  - » **3 accepted, 4 ed - ed's get, 5 fixed in text, 6 fixed in text**
  - » **7- done, 8 same as 7, 9 accepted. text rewritten.**
  - » **104 missing refs to clause 5 & 6 - accepted - text done**
  - » **105 accepted by mar 96 motion 8, 106 accept**
  - » **112 accept - text not drafted yet. needs sec 9.**

Motion #40:   **to accept recs for PICs comments, PICs text done so far, and
remainder of PICs text will be given to editors in time for D4.0
creation.**
- **The MAC group, 2nd Simon**

Plenary Vote: 13, 0, 1   **Motion #40: passes**

ASN doc for MIB

- **96/89**

| *Motion #41:* | to accept 96/89 as ASN MIB code and insert into a normative annex, any discrepancy between ASN code and this week's work is considered editorial and editors will make the new annex consistent, also a statement will be added to annex that Annex takes precedence over other clauses in case of conflict. |

- The MAC group, 2nd: Tom

Plenary Vote: 10, 1, 3   **Motion #41: passes**

C7 C#34 TBTT and Next Dwell

| *Motion #42:* | to decline comment on basis that comment is new functionality and does not have complete proposed text |

- The MAC group, 2nd: Johnny

Plenary Vote: 11, 2, 3   **Motion #42: passes**

C7 # 35 when can change MIB?

| *Motion #43:* | decline comment and close comment with "you may change any MIB attribute whenever the std allows it - the operational wisdom of such action should be considered before doing so." |

- The MAC group, 2nd: Chris

Plenary Vote: 15, 0, 2   **Motion #43: passes**

Multiple MSDUs 96/91R1

| *Motion #44:* | to adopt text in 96/91R1 except for the 2nd to last paragraph of the submission beginning with the word 'the station shall insure that there is no group-addressed...' |

- The MAC group, 2nd: Johnny

Plenary Vote: 17, 1, 1   **Motion #44: passes**

SIFS tolerance

- Clause 7: C#6

| *Motion #45:* | that we insert into 9.2.3.1 "an 802.11 implementation shall not cause SIFS to vary from the nominal value by more than +/- 10% of aSlotTime for the PHY in use. |

- The MAC group, 2nd: Michael

Plenary Vote: 16, 0, 1   **Motion #45: passes**

96/90 MSDU order

- **2 Service classes, one ordered strictly, the other not.**

96/92 MSDU order

- maintain order at service interface instead of actual media order.

Discussion (re)ordering...

Motion #46:	adopt 96/90.

- The MAC group, 2nd: Michael
  - Plenary Vote: 12, 3, 4

the last motion...

Motion #47:	that we incorporate the 2nd to last paragraph of 96/91r1 into draft 4.0 with the addition of the words "of strictly ordered service class" after "outstanding MSDU or MMPDU".

- The MAC group, 2nd: Michael

Plenary Vote: 13, 1, 2   Motion #47: passes

The chair ruled that discussion and vote on the frame re-ordering paper 96/90 was out of order because it was not consistent with the charter for the interim.

Appeal #2: Michael,

Vote 7/10/3 to support the chair   Chair's ruling overruled

Goals for July 96
Processing D4 LB comments.

Break @3:05 for 15 minutes

16.2 PHY Group

16.2.1 FH PHY Report,

Dean Kawaguchi gave the FH PHY report. Started with a recap of the motions that were passed yesterday.

The minutes for the PHY report contains all of the details about the report and this is not repeated here.

Motion #48:	Accept the following changes for multi-rate and CCA: 1) the PLCP rate field was expanded to three bits to indicate rates from 1.0 to 4.5 Mbit/s in 0.5 Mbit/s steps, 2) the text was modified to reflect changes in the CCA detection algorithm and the addition of the capability of holding CCA BUSY for the calculated duration of an unsupported rate, 3) the text was modified in the receive procedure to pass the byte count and data rate of an unrecognized rate to the CCA procedures

moved by the PHY group, second by Johnny Zweig

Plenary vote 15, 0, 3   Motion #48 passes

16.2.2 Full PHY Group Report,

<u>Japanese call sign</u>
- straw pole
>1. Leave as is
>2. Add call sign to every packet
>3. Delete all references to Japan in standard
>- vote 4,3,2
- No action: the default is to leave it as is.

16.2.3 DSSS Group Report by Jan Boer

<u>All issues were addressed yesterday</u>

16.3 Return to talk about MAC multirate work

There was a motion on the floor that was postponed to this time.

Motion #49 :	*to accept 96/79R1 + change to encoding of supported rates, and incorporate into draft, and close related LB comments accordingly.*

Motion #50 to amend #49:	*Replace the original motion to amend to state "except for the portions of 96/91R1 that pertain to clauses 14 and with the following change....".*

Vote 16:0:0   **Motion #50 passes: Motion #49 amended**

Vote 16:0:1 (clapping)   **Motion #49 passes**

16.3 Press release

Nothing available

17. Unfinished Business

Naftali mentioned that Dean would present his paper 96/98

Motion to add period to address completion of letter ballot comments.

17.0 Completion

Motion #51:	*to close letter ballot comments with resolution to decline C9 #21 80 89 114 120 125 163, C11 #14 44 59 with the technical justification " there is sufficient functionality in the draft to accomplished what is requested."*

Moved by: Bob O'Hara: Johnny seconds.

Vote: 7:5:2   **Motion #51 fails**

Chair ruled that it is not necessary to address all comments before proceeding to a new letter ballot.

17.1 Recap of Output Documents

17.2 Recap of document distribution

Two documents sent later. Also FH PHY minutes.

17.3 Next Meeting in Netherlands

17.4 Future Meetings: see chart. Hoping to not have to have interim meeting after July when the standard goes to sponsor ballot.

17.5 Other Intermediate Meetings: none

18. New Business:

Document 96/98: Proposal for 802.11 reply to FCC NPRM 96-8 presented by Dean Kawaguchi

doc 96/39,

Motion #52 :	*"direct the regulatory committee to use doc 96/98 as the basis for its response to the NPRM 96-8"*

Moved by Dean on behalf of Naftali. Chris 2nd

Chair rules motion #52 out of order.

Appeal #3 by Dean, second by Stuart.

Vote: 1:7:3   **Chair overruled.**

Question called, by voice vote

Vote 8:1:4   **Motion #52 passes as recommendation.**

Motion #53 :	"To disband the regulatory committee as soon as it finishes processing the business of the previous motion"

Moved by Dave Bagby, second by Johnny

Vote 7, 2, 5   **Motion #53 passes as recommendation.**

19. Closure: meeting adjourned at 5:05 PM.

Tentative Meeting Schedule

Date	Month	Year	Place	Type	Location	Host
8-12	July	1996	Netherlands	Plenary	University of Twente	
26-30	Aug	1996	Harrisburg	Inter	AMP	AMP
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	

9-13	Mar	1998	Austin, TX	Plenary	Hyatt Regency	
6-10	Jul	1998	La Jolla, CA	Plenary	Hyatt Regency y	
9-13	Nov	1998	Albuquerque, NM	Plenary	Hyatt Regency	

Appendix 1
Attendance list

Title and first name	Last name	status	Company	communications
Mr. Keith B.	Amundsen		Raytheon Company keith_b_amundsen@raytheon.com	+1 508 470 4483
Mr. Carl F.	Andren		HARRIS Corporation M/S 62A-028 candren@harris.com	+1 407 724 7535
Mr. David	Bagby	voter	Advanced Micro Devices david.bagby@amd.com	+1 408 749 5425
Mr. Steven	Bass		Genreal Scanning Inc. X246 sbass@world.std.com	+1 617 275 1300
Mr. John	Biddick		Intermec Corporation X6647 jbiddick@intermec.com	+1 206 348 2600
Mr. Simon	Black	voter	Symbionics Networks Ltd sab@symbionics.co.uk	+44 1223 421025
Mr. Jan	Boer	voter	Lucent Technologies WCND jan.boer@att.com	+31 3060 97483
Mr. Pablo	Brenner	voter	BreezeCom pablob@breezecom.com	+972 3 6459127
Mr. Naftali	Chayat	voter	BreezeCom naftali@madge.com	+972 3 645 8423
Mr. Albert	Claessen		NCR+1 404 623 7017 albert.claessen@atlantaGA.attgis.com	
Mr. Ken	Clements		Innovation on Demand Ken@InnovationOnDmnd.com	+1 408 353 5027
Mr. David C.	Davies		Digital Equipment Corp. davies@wanton.lkg.dec.com	+1 508 486 5866
Mr. Wim	Diepstraten	voter	Lucent Technologies WCND wim.diepstraten@att.com	+31 3060 97482
Mr. Robert J.	Egan	voter	The Gartner Group bobe@ids.net	+1 401 769 3828
Mr. Darwin	Engwer	voter	XIRCOM dengwer@xircom.com	+1 415 691 2500
Mr. Greg	Ennis	voter	+1 408 358 5544 gennis@netcom.com	
Mr. John	Fakatselis	voter	HARRIS Corporation M/S 62A-028 jfakat01@ccmail.mis.semi.harris.com	+1 407 729 4733
Mr. Matthew	Fischer	voter	Advanced Micro Devices ablmatt@brahms.amd.com	+1 408 749 5403
Mr. Michael	Fischer	voter	Digital Ocean Inc. mfischer@child.com	+1 210 614 4096
Mr. George	Fishel	voter	AMP Inc. grfishel@amp.com	+1 717 592 6161

Appendix 1
Attendance list (continuation)

Title and first name	Last name	status	Company	communications
Mr. Perry	Froggie		HARRIS Corporation M/S 62A-028	+1 407 729 5642
Mr. Ian	Gifford	voter	M/A-COM Inc.	+1 508 442 4650
			giffordi@corp.macom.com	
Mr. Howard J.	Hall	voter	WINDATA	+1 508 952 0170
			X345	
			howardh@wireless.windata.com	
Mr. Victor	Hayes	voter	Lucent Technologies WCND	+31 3060 97528
			vic.hayes@att.com	
Mr. Ted	Hupper		Digital Equipment Corp.	+1 508 486 5235
			t_hupper@irocz.enet.dec.com	
Mr. Kevin	Karcz		University of New Hampshire	+1 603 862 1008
			kjk@iol.unh.edu	
Mr. Dean M.	Kawaguchi	voter	Symbol Technologies Inc.	+1 408 369 2629
			deank@psd.symbol.com	
Mr. Stuart J.	Kerry	voter	Symbol Technologies Inc.	+1 408 369 2634
			stuart@psd.symbol.com	
Mr. Brian	Khabbaz		M/A-COM Inc.	+1 508 656 2910
			khabbazb@corp.macom.com	
Mr. Joseph J.	Kubler	voter	Norand Corporation	+1 303 442 1850
			kublerj@norand.com	
Mr. Arthur	Lashbrook	voter	XIRCOM	+1 415 691 2500
			alashbro@xircom.com	
Mr. Ravi P.	Nalamati	voter	Digital Equipment Corp.	+1 508 486 5189
			nalamati@irocz.enet.dec.com	
Mr. Bob	O'Hara	voter	Advanced Micro Devices	+1 408 749 4952
			bob.ohara@amd.com	
Mr. Al	Petrick	voter	HARRIS Semiconductor MS 58-96	+1 407 729 4944
			apetrick@ccmail.mis.semi.harris.com	
Ms. Vickie	Prescott	voter	Digital Equipment Corp.	+1 508 486 7086
			prescott@lkg.mts.dec.com	
Mr. James A.	Renfro	voter	Raytheon Company	+1 508 490 1934
			james_a_renfro@ccmail.ed.ray.com	
Mr. William	Roberts	voter	American Microsystems Inc.	+1 208 233 4690
			x6514	
			wroberts@poci.amis.com	
Mr. Jeff	Schwarz		Digital Equipment Corp.	+1 508 486 7575
			schwartz@lkg.dec.com	
Mr. Roy	Sebring		Intermec Corporation	+1 206 356 1740
			rsebring@intermec.com	
Mr. Thomas	Siep	voter	Texas Instruments	+1 214 997 6479
			siep@ti.com	

Appendix 1
Attendance list (continuation)

Title and first name	Last name	status	Company	communications
Mr. Joel	Silberman		Raytheon joel_silberman@ccmail.ray.com	+1 508 470 9946
Mr. Dave	Strohschein		University of New Hampshire das@iol.unh.edu	+1 603 862 1529
Mr. Bert	Sullam		Seattle Silicon Corp x101 bert@seasil.wa.com	+1 206 957 4422
Mr. Mack	Sullivan	voter	Proxim Inc. mack@proxim.com	+1 415 960 1630
Mr. Mike	Trompower	voter	Aironet Wireless Comms. Inc. mtrom@aironet.com	+1 330 665 7920
Mr. Tom	Tsoulogiannis	voter	+1 416 299 1954 tomt@interlog.com	
Ms. Donna A.	Woznicki	voter	Digital Equipment Corp. woznicki@lkg.mts.dec.com	+1 508 486 5085
Mr. Chris	Zegelin	voter	Symbol Technologies Inc. M.S. 160 chrisz@psd.symbol.com	+1 408 369 2667
Mr. Johnny	Zweig	voter	XIRCOM grshnrk@aol.com	+1 415 691 2500