

Tentative Minutes of the PHY Group, September 1994

IEEE 802.11 COMMITTEE August 29 to September 1, 1994

11:00 am, Wednesday, August 31, 1994

PHY Group

Jim McDonald, vice-chair of the PHY working group, opens the meeting. Iwen Yao has volunteered to be the secretary of this meeting.

JimM: Poses the following question to the group. Should we report to the MAC/PHY that we are on target for the November draft? If not, the implication is that 802.11 may move forward without FH PHY.

MikeR: The draft should be totally defined. On the other hand, I have seen standards at much worse shape at ballot time. Recommend to go forward.

EdG: PMD spec has progressed a lot. In PMD, 2 Mbps spec has not been done yet. Layer management spec has many issues to resolve. The layer management issues which are mandatory and yet to be closed are SIFS time, and a couple of state machine hasn't been done yet.

Wayne: 2Mbps specs has been done.

JimM: The group will go to the plenary indicating that FH PHY will be ready by November. Also, it is Larry van der Jagt's, chair of PHY Group, position to keep PHY document in the PHY till November.

MikeR and Wayne express some concern about waiting till November to fold PHY document into standard document.

Further discussions on when PHY document should be folded into the Full document.

VicH join in this discussion.

EdG: Document 68r4 will be ready to be submitted to the plenary after PHY vote in the November meeting. The document 68r4 will be made available for review a week before the November meeting.

VicH: The current plan is that the editor has 3 weeks after the meeting to put in the change. One week to distribute, one week to mail, 3 weeks to study, 1 week for preparing submissions, and have the draft ready in the November meeting.

After the November meeting, 3 weeks for editing, 2 weeks to distribute and mail. The ballot should be returned before Jan. 30, 1995 and tabulating of ballot starts.

EdG: 68r4 will be in distribution by Sept. 26 and 68r5 will be in distribution by Oct.31.

JimM: FH PHY schedule.
r4 by Sept 24 via bulk email
r5 by Oct. 30 via bulk email

The meeting is adjourned at 12 noon

11:00 am, Wednesday, August 31, 1994

JimM: proposes the following agenda

- Discussion of the issue of the consistency of PHY primitives
- IR motion merged in the report
- Individual PHY subgroup reports
- Motion to recommend DSSS spec be included in the document 20b2.

Discussion of PHY primitives

PaulS: feels that DSSS is compliant to 8.2 and proposes to have the editors of the 3PHYs discuss this issue via email.

BarryD: conform to PHY primitives in section 8.2

JimM: Since there is consensus among the editors of the 3 PHYs that the primitives issue is workable at the editor level there is no reason not to proceed.

PHY Reports

IR PHY by RogerS

Document 182 discusses what's wrong with current 8.2, and how to fix it, and a motion.

Motion: Resolved, that the proposed test changes in 11-94/0182 be included into the draft standard IEEE p802.11-93/20b2, section 7 and Section 11 in its next revision by the editors.

Moved by the chair of the IR sub group, 2nd by BarryD, question is called.

Vote on the Motion 23,0,1, the motion passes.

This motion will be made at the Plenary.

DSSS PHY by JanB

All issues are closed

- Spectrum mask

- CCA

- Modulation Accuracy

- Changed signaling field (rate) from code to number (bit per second)

- At the moment only 2 rates are specified

- Modified PLCP header

- Carrier suppression

General edits of doc 94/50

Placed temporary list of parameters that will be included in MIB.

Accepted motion to have 50r4 be included in the full spec (20r3).

PaulS: Like to have doc 68 included in the full spec as well.

EdG: have question of the modification of the signaling field of the PLCP header.

MikeR: Is this modification in any of the submissions?

JanB: no

JimM: Propose a motion that 94/050r4 be included in the 20b3 document.

JohnM moves, 2nd by PaulS

Vote on the motion 20,0,2, the motion passes.

HS PHY by Wayne Moyer

All issues are closed if passes in Full PHY

6 submissions were presented

94/210 was revised and adopted as the final HS FH template and is forwarded to EdG, the editor.

Accepted the rate change proposal by Pablo, 94/164

Recommended that the means of rate change capability in the PLCP be essentially the same as in 94/50 document

Future Work: return to the MAC/PHY/IF with update of 94/164 or submission of variant to doc 94/164 to be voted upon in November.

Check MIB for any features for multi-rate PHY such as those in 94./182, are they OK?

FH PHY by Jim M

Report of the Frequency Hop Sub group for the August 1994 Meeting

Agenda was oriented toward resolution of the PMD Operating specifications

Many fine contributions were made in the form of submissions, discussion, and debate. The result was significant progress in the resolution of specifications.

As a result the following schedule is achievable:

94/068r4 to be available on bulk email on 9/24/94

94/068r5 to be available on bulk email on 10/30/94

Submission to draft standard at the closing Plenary at Nov. 94 meeting

Motions passed at the are:

Motion: For clarification, OCBD is the unique word

Vote: 7/0/1

Motion: Purge reference to non FCC regulatory requirements

Vote: 6/0/3

Motion: Remove min. column from 9.5.7.2

(Spec now says what number of frequencies are in the hop pattern with no reference to the FCC requirement for a minimum of 75)

Vote: 6/0/0

Motion: The occupied bandwidth for the PMD is 1.0 MHz. This must contain 99% of the emitted energy. The FCC may impose a further restriction on transmitted bandwidth requiring the 20 dB bandwidth, as measured with a spectrum analyzer and reference to the magnitude at the center of the transmitted bandwidth to be less than 1 MHz.

The transmitter center frequency shall be within +/- 25 ppm of one of the specified operating frequencies listed in section 9.5.7.3 The following diagram (fig 9-11 of 94/068r3) illustrates the relationship of the transmitter center frequency to the occupied channel bandwidth.

Vote: 4/1/1

Motion: Eliminate 9.5.7.7 (In band emissions) in favor of transmit mask of 9.5.8.3

Vote: 8/0/1

Motion: The absolute mid-symbol peak deviation throughout the packet shall be at least 110 KHz with respect to the center frequency during the last 8 bits before the unique word.

Vote: 10/1/1

Motion: Zero crossing error shall be less than +/- 1/8 of a symbol, per diagram.

Vote: 9/1/2

Motion: Set Time from Mac command to start a transmission of first bit of 1,0 preamble is 20 uSec, maximum

based on the following

R/Tt as defined in 94/113 < 10 uSec

Transmitter delay, TDt, < 1 uSec

Ramp allocation = 8 uSec

Mac state machine delay < 1 uSec

Vote: 9/1/2

Motion: Slot time is 50 uSec. The interval from the Mac command to transmit to the appearance of the first bit of the preamble at the RF antenna (also called collision time) is a maximum of 20 uSec. The channel shall be assessed for at least 30 uSec. The interval from the start of the preamble at the antenna to the time when the ch_busy line goes high is a maximum of 16 uSec.

Vote: 8/1/1

Motion: TBD microsecond in 9.5.7.11 of 94/068r3 is 224 uSeconds the frequency accuracy TBD KHz is changed to 60 KHz.

Vote: 6/1/0

Motion: Delete specification 9.5.7.15 (VSWR)

Vote: 8/0/0

Motion: Frame length of the 94/69 proposal is 32 bits

Vote: 5/1/1

Motion: CCA Threshold is = -65 dBm - transmit power in dBm.

Vote: 4/0/4

Motion: IEEE 802.11 compliant frequency hopping transmitters shall be labeled in four classes according to their maximum nominal EIRP.

Class 1 up to 10 mW

Class 2 up to 100 mW

Class 3 up to 500 mW

Class 4 up to 1 Watts

Vote: 7/2/2

Motion: Change last word in 9.5.8.2 to 1000 mW

Vote: 7/0/3

Motion: Transmit spectrum mask shall be measured under dynamic conditions such that the power generated in a 1 MHz channel for a given carrier offset shall be less than the values in the table below:

Channel Offset	Specification Limit
+/- 2 MHz	- 40 dBc
> = +/- 3 MHz	- 60 dBc

The radio shall be set to alternatively transmit and receive with a nominal duty cycle ratio of 1 : 1 and the nominal packet length shall be greater than 300 microseconds and less than 2 mseconds.

Vote: 10/0/2

Motion: Relative to 9.5.8.4

Transceivers shall maintain this stability over the stated operating range.

Vote: 10/0/0

EdG: Move to adjourn

JohnM 2nd

The meeting is adjourned at 12 noon.