
**IEEE P802.11
Wireless LANs**

Tentative Minutes of Task Group B

Date: September 14-18, 1998

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IEEE 802.11 – Task Group B Minutes
September 14-18, Westford, MA

Monday, September 14, 1998

John Fakatselis, Chair
Stan Reible, Secretary
Stuart Kerry and Vic Hayes, Parliamentarians

Call to Order at 1:10 PM.

Review of Quorum

Chair reviewed issues relating to quorum:

95 Voting Members

18 Voting Members Present

Chair announced that no quorum is present, therefore meeting will continue as usual except that all technical issues must be approved as a group by a 75% vote at the next meeting with quorum and all non-technical issues must be approved by a 50% vote as a group at the next meeting with quorum. Vic Hayes suggested that ratification of motions could be carried out with a Letter Ballot.

Secretary Appointment

Chair suggested Stan Reible.

No objections noted; Chair appointed Stan Reible.

Approval of Agenda

Proposed Agenda:

Call to order

Secretary appointment

Approval of agenda.

Approval of July 1998 minutes.

Procedural

Parliamentarian(s) appointment

Selective procedural rules overview

TGb background / Schedule

Call for papers

General

Draft

Presentation of General papers

Draft

Adjourn

No discussion on agenda; no objections were noted to approving agenda.

Chair Ruled that Proposed Agenda is Approved.

Approval of July 1998 Minutes

Motion (1m): Moved to accept July 1998 minutes/Moved by Carl Andren/Seconded by Vic Hayes

Motion (1m) Passed: 14/0/1

Procedural Issues

Stuart Kerry and Vic Hayes were proposed as parliamentarians by chair.

No objections from Floor/Nominations for parliamentarians were accepted.

Chair reviewed the following procedural issues and concerns.

Charter of working group

Review of parliamentary rules

Points of Order

Must be timely

Must be reasonable

Improper Motions

Must be consistent with existing laws.

Must be consistent with issues the assembly has already approved.

Motions to Reconsider (Generally in same session).

Motions to Rescind Motion (From earlier sessions).

Reviewed Points of Information and Parliamentary rulings.

Reviewed Background of Task Group B.

Stated plan is to use September and November Meetings to complete draft of 802.11 ext.

Stated goal of Task Group B is to complete in 802.11b Standard by March of 2000.

Call for papers

Technical Presentations

Carl Andren/Draft Presentation/Paper 98/315/1 hr

Chris Heegard/Code Selection /Paper 98/304 /30 min

Chris H./Preamble /Paper 98/317/15 min

Chris H./Optional forward Error Control/Paper 98/302/15 min

Chris H./Improved Cover Sequence/98/303/ 30 min

Draft of Standard

Harris 98/314

Presentation of Papers

Presentation by Carl Andren/Draft Presentation/Paper 98/315

Points Highlighted in Presentation and Discussion:

Long Preamble/195 μ s/scrambled 0's.

Short Preamble/81 μ s/scrambled 1's.

5.5 Mbit/s

Include antenna diversity & equalizer training.

FH interoperability mode (detect FH presence).

CCK/64 codes/Walsh codes are a subset of CCK codes.

Using 4 codes with 2 bits for phase.

PSK modulated with 11 chips/ μ s.

10-dB sensitivity reduction when multipath is causing 10% packet error rate in higher rate mode.

Detecting CCK codes/Energy only/Carrier sense/Energy & carrier sense.
Conclude message has terminated when energy drops by 10 dB. (Considerable discussion on this point).
With short preambles can only operate in 5.5 or 11 Mbit/s modes. With long preambles can use lower rate modes.

Recessed at 3:00 for 15 Minutes

Presentation by Chris Heegard on Preamble/Paper 98/317

Summary of Technical Points Covered:
Design of preamble which helps estimate multipath parameters.
Draw on what is done in HF field.
Rotated length 16 symbol QPSK signal used to estimate 16 interference terms.
Estimate carrier offset using same 16 QPSK sequence at 2 places in preamble.
For short preamble mode.

Discussion focused on need for more analysis.

Harris was asked what they simulated.

Mark Webster responded to question for Harris

AGC pull-in - 10 μ s.
Preamble processing (MatLab) - 10 μ s.
10% Packet error rate - 355 ns delay spread.
Eb/No - 15.6 dB.
Harris simulation does not include antenna diversity.

Presentation by Matthew Shoemake/Optional FEC/Paper 98/302

Summary of Technical Points Covered:
64 state binary convolutional code.
5.5 & 11 Mbit/s modes.
Rate 1/2 encode & scrambler/200-500 gates.
Decoder optional.

Questions on Paper 98/302:

Why are codes different than industry standard? For better multipath performance.

Procedural Issues

Chair pointed out that new concepts cannot be submitted to floor unless agreed upon by the assembly before hand.

Chair questioned if Alantro was entering a new concept for the standard. Alantro (Chris Heegard) answered that their approach was previously proposed and entered as an option in the agreed upon standard.

Chair questioned if Harris and Lucent were willing to accept this change to their draft standard; Lucent asked to see more details and analysis results.

Naflali Chayat requested chair to clarify how additional changes to draft standard can be proposed. Chair requested that Harris/Lucent, Naflali, and Alantro go “off line” to determine if Harris/Lucent accepts Alantro’s proposed changes. Chair pointed out that if suggestions are not accepted by Lucent/ Harris or if anybody else objects, a 75% majority is then required to reconsider and then enter into proposal if it is a technical change. Chair recommended that this discussion be continued “out-of-session” on Tuesday and a recommendation to be brought to the group for reconsideration.

Tom Tsoulogiannis pointed that the assembly now owns the standard proposal, and that therefore, it is the decision of the assembly whether to consider new concepts. Chair pointed out this requires a 75% majority if the new proposal doesn’t conflict with was approved. If not, there must first be a two third vote to rescind, and then a 75% vote to adopt technical changes.

Matthew Shoemake requested that Harris provide the viewgraph that they had shown at the previous meeting in Irvine that showed what parts of the Harris/Lucent proposal were considered fundamental and which parts were considered non-flexible and thus open to modification. Chair stated that if the request referred to a non-official viewgraph, the chair does not have them available. Harris was asked to provide this viewgraph. Mark Webster stated that he would determine if he still had the viewgraph or not.

Motion (2p): Moved to adjourn/Chris Heegard/Matthew Shoemake

Motion (2p) passed: 21/0/0

Adjourned at 5:05 PM.

Wednesday - 17 September 98

Call to Order at 8:43 am.

22 Voting Members Present/No Quorum Present

Review of Agenda

Presentation of General Papers

Code Selection 98/304
Cover Sequence 98/303
Throughput comparisons 98/327/20 min.

Appointment of Editor.

Review of Schedule for TGb.

Harris added a paper on throughput by Kent Rollins - Paper 98/3xx.
Effect of throughput rates with short/long preambles.

No objection was voiced to presentation of paper by Kent Rollins.

No objection was voiced to amended agenda.

Chair ruled that agenda is approved as amended.

Continuation With Business

Motion (3m): Moved to accept paper 98/302 as an option to the 802.11 2.4 GHz PHY draft without any of the mandatory elements described to either the transmit or receive side, or any other areas that will impact the proposals in paper 98/314 with the exception of introducing an additional SFD to the short preamble proposal of paper 98/315 to recognize this optional mode/moved by Wesley Brodsky/seconded by Al Petrick

During discussion, Chris Heegard pointed that this motion was a compromise to what he originally agreed upon. He stated that he had originally agreed to this action with a mandatory encoder and an optional decoder.

Motion (3m) Passed Unanimously: 18/0/3

Presentation of General Papers

Presentation by Matthew Shoemake of Alantro /Paper 98/304/“Comparing PBCC and CCK”

Presentation by Chris Heegard of Alantro/Paper 98/303/”Improved Cover Sequence”

Richard Nee pointed out that he gets reduced multipath performance when using the cover sequence proposed by Alantro.

Chris Heegard pointed out that in the presence of multipath, one has to account for the fact that the codes have been distorted. Chris Heegard argued that correlation is not the optimum process when the codes are no longer uniform - varying energy (distorted by multipath)

Presentation by Kent Rollins of Harris/Paper 98/327/”Throughput Comparisons.”

Chair questioned Alantro if they had any patents on the optional preamble which they proposed be included as part of the standard. Chris Heegard answered that Alantro had no patents, or patent applications pending, which related to the proposed preamble.

Meeting Recessed 9:50 to 10:10

Chair reviewed agenda and goals

Chair requested that Harris/Lucent suggest an Editor for Standard.

Chris Heegard pointed out that is up to the body to select the Editor.

Chair called for volunteers: Carl Andren responded /No other volunteers.

Motion (4m): Moved to appoint Carl Andren as Editor/Chris Heegard moved/Dean Kawaguchi seconded.

Motion (4m) Passed: 20/0/0

Presentation and Discussion on Draft Standard

Carl Andren was given floor to present draft of standard.

Summary of Comments During Review of Introduction Section.

Alantro requested that optional preamble and FEC modulation mode be added to introduction.

There was considerable discussion on what the new standard should be/An addition to an existing standard or a stand-alone standard.

It was point out that the PAR stated that the group was created an extended rate standard which could stand-alone.

Want a document with all the issues cover even if they were just imported from existing standard.

Keith Amundsen and Tom Tsoulogiannis pointed out that there could be additional changes to sections of existing standard.

Chair pointed out that should be one new standard with options, not three new standards as proposed from floor.

No other objections were noted to introduction.

Summary of Comments During Review of Physical Layer Convergence Section:

Chris Heegard suggested adding optional preamble and FEC frame header

Add a bit to service field to indicate code

The SFD of the FEC mode is changed

Short PLCP Sync/will not coexistent with existing standard/scrambler must be initialized with anything but all ones or zeros.

The entire preamble is scrambled.

Add graphics to short PLCP start frame delimiter field.

What does service field mean? No clear definition came from WaveLAN.

Four (4) bits are used to indicate rates from 1 to 44 Mbit/s; granularity being 5.5 Mbit/s above 5.5 Mbit/s. At requests from floor rates above 22 Mbit/s were removed from draft.

The procedure for selecting short or long preambles beyond scope of standard.

Receiver is capable of receiving at 5.5 & 11 Mbit/s, as well as at 1 and 2 Mbit/s.

A question was raised concerning why the proposed standard assumes mix of short and long preambles? This issue is considered to be beyond the scope of the standard.

Chair's Review of Timetable for Completion of 802.11b Standard

November 98 - Complete preliminary draft.

March 99 - Working Group Ballot resolution.

May 99 - Sponsor Ballot.

July 99 - Sponsor Ballot Resolution Meeting, Submit sponsor confirmation ballot.

September 99 - Sponsor Resolution Meeting.
Submit to Standards Board.

November 99 - Submit for Standards Board Approval.

December 99 - Standards Board Approval OR Sponsor Confirmation Ballot backup and submit to ExCom E-mail ballot for submittal to standards board.

January 2000 - Address Remaining Issues.

March 2000 - Final Approval.

No objections were voiced to submitting Draft Standard to Web Site.

No objection voiced to adjournment.

Adjourned at 11:55 am.

Thursday - 17 September 1998

Call to Order at 1:05 PM

Continuation with Discussion on Draft Standard

Summary of Comment on Section 1.4 DSSS Physical Medium Dependent Sublayer:

Suggested reference to Halamard transforms

Procedural Issues

Questions were raised on how to submit new items into the Draft Standard: Chair responded that a motion must be brought to the floor and that after discussion the new items must achieve a 75% approval vote

Chris pointed out that it was inconsistent for the chair to make changes without a motion and voting while others must bring a motion to the floor. Parliamentarian Vic Hayes suggested that the chair first ask if there are any objections to proposed changes. If there are objections, then the issue will need to be discussed in greater depth and/or moved and voted on. Chair agreed with the recommendation.

Return to Discussions on Draft Standard

Discussion was voiced that -80 dBm sensitivity may be impractical. Carl Andren pointed out that the Harris Radio Engineer suggested -76 dBm. A question was raised about the existing standard: It is currently -80 dBm for a 2 Mbps data rate. It was, therefore, decided to go with -76 dBm sensitivity as being consistent with the corresponding value for the 2 Mbps data rate.

Dean Kawaguchi reviewed the operating channel requirements for FH in North America and Europe.

Dean Kawaguchi raised the question if the CCK and convolution coding option will meet both FCC Part 15.247 requirements.

Summary of Comments During Review of Clear Channel Assessment Section

Suggestion was made to relax sensitivity specifications:

-76 dBm sensitivity for high TX power > 100 mW.

-72 dBm sensitivity for low TX power.

Question was raised why we have to specify carrier sense method in this standard when in wasn't done in the low rate standard. Section d) dealing with carrier sense method was struck out.

Members reviewed this week's changes to doc. 98/314/nor doc. 98/314r1.

Meeting Recessed from 2:50pm to 3:10pm.

Continuation of review of this week's changes to Revised Draft Standard doc. 98/314r1.

Remove any references in current draft, which would imply changes to the MAC.

Alantro will provide description for optional short preamble mode.

Reduced maximum input signal level from -4 dBm to -10 dBm.

Renamed doc. 98/314r1 to 98/314r2.

Motion (5m): Moved to adopt revised doc. 98/314r2 as the updated technical draft for 802.11b/Moved by Jim/Seconded by Chris Heegard.

Recessed for 10 minutes: (To allow Alantro time to introduce revised section into document.)

Revised section has been entered into document doc. 98/314r2.

Further discussion on revised document.

Motion (5m) to adopt revised doc. 98/314r2 passed: 12/0/2.

No further work for TGB in this session.

Draft Standard will be forwarded to Plenary as a motion.

Suggestion was made to submit to Working Group Letter Ballot before October 1. Approve editorial changes can be made before submitting for ballot. Entering comments at the time of the ballot vote can only make technical changes.

Carl Andren being given authority to appropriately edit Standard Document.

John Fakatselis will select someone to handle comments to Letter Ballot.

Ballot is only closed if there are more than 50% returns; there must be 75% for approval.

After each ballot, one can only comment on changes that have been made on the last go-around.

Issues which appear not to be resolved:

Short PLCP header
Common preamble for BCC interoperability
Reliability of PLCP
More technical analysis required

Comment was made that the majority of the members will not review the draft document until it is on a Letter Ballot

Motion (6m): Moved (to recommend to plenary) to circulate doc 98/314r2 with the appropriate editorial changes as instructed by TGb for WG letter ballot/moved by Carl Andren/seconded by Anil Sanwalka.

Motion (7s): Moved to amend motion to circulate doc. 98/314r2 with section 1.2.4.7 (section specify the short PLCP header) changed to read TBD/Moved by Matthew Shoemake/Seconded by Amundsen.

Point of Order: Parliamentarian Vic Hayes stated that assembly just voted to include section 1.2.4.7 by approving the current draft.

Chair ruled the motion (7s) to amend out of order.

Returned to discussion of Main Motion (6m); motion to circulate doc. 98/314r2).

Matthew Shoemake stated that since there were problems with the short PLCP stated in doc. 98/314r2, it made no sense to approved section 1.2.4.7 of this document, the section that specifies the short PLCP header. Matthew stated that he would like to change the section to TBD, since it makes no sense to approve something with known problems that have been acknowledged by Alantro, Raytheon, Neesus, and others. Matthew encouraged the body to vote against the current motion to “adopt revised doc. 98/314r2 as the updated technical draft for 802.11b.” The motion to “adopt revised doc. 98/314r2 as the updated technical draft for 802.11b” could then be amended to read ‘TBD’ in section 1.2.4.7. Matthew asked for those that supported doing this to vote against the motion on the floor.

Motion (8s) : Moved to call question/Matthew Shoemake/Anil Sanwalka seconded.

Motion (8s) to call question passed: 9/4/4 (To pass requires 2/3 vote).

Returned to discussion of Main Motion (6m); motion to circulate doc. 98/314r2.

Motion (6m) Failed: 5/8/4 (Procedural issues requires 50% vote).

Motion (9m) to Reconsider: Matthew Shoemake moved to reconsider motion 5m to adopt revised doc. 98/314r2 as the updated technical draft for 802.11b/Moved by Matthew Shoemake/Seconded by Wesley Brodsky.

Point of Information: Chair requested that parliamentarians advise on proper procedure for reconsidering motion.

Motion (10s): Moved to call question /Anil Sanwalka/Tom Tsoulogiannis.

Motion (10s) to Call Question Passed: 16/0/1

Return to motion (9m) to reconsider to adopt revised doc. 98/314r2.

Motion (9m) to Reconsider Passed: 16/0/1

The motion on the floor is motion 5m as result of the motion to reconsider:

<p>Motion (5m): Moved to adopt revised doc. 98/314r2 as the updated technical draft for 802.11b/Moved by Jim/Seconded by Chris Heegard.</p>
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Motion (11s): Moved to amend motion as underlined: to adopt doc. 98/314r2 with section 1.2.4.7 shown as TBD as the updated technical draft for 802.11/Moved by Matt Shoemake/seconded by Bob O'Hara.

Motion (12s): Moved to call question to amend main motion/Greg Ennis/Anil Sanwalka.

Motion (12s) to Call Question Passed: 9/4/4

Return to amend main motion (11s- to adopt doc. 98/314r2 ...) as underlined.

Motion (11s) to Amend Main Motion Passed: 8/7/3

Motion 5m as amended now reads; to adopt doc. 98/314r2 with section 1.2.4.7 shown as TBD as the updated technical draft for 802.11

Motion (13s): Moved to call question to adopt amended motion 5m/moved by Anil Sanwalka/seconded by Keith Amundsen.

Motion (13s) to Call Question Passed: 15/2/0

Return to amended main motion 5m.

Motion 5m amended Failed: 7/7/4

Moved to adjourn/Keith Amundsen/No second/Keith Amundsen withdrew motion.

Motion (14m): Moved to submit to the plenary doc. 98/314r2 with the appropriate editorial changes as instructed by TGb as the draft standard/Carl Andren/Greg Ennis.

Motion (14m) Passed: 11/0/6.

Motion (15p): Moved to adjourn/Anil Sanwalka/Keith Amundsen.

No objections voiced to adjourn.

Session Adjourned at 6:05

Attendance List

See minutes of the full working group.

Future Meetings

See minutes of the full working group.

Secretary's Note:

Vic Hayes requested that the motions for TGb be numbered consecutively. I went one step further and added a suffix letter to indicate the rank of the motion, with the motions to be acted on first, ranked first in the summary provided below:

<u>Suffix Letter</u>	<u>Type of Motion</u>	<u>Example Motion</u>
p	Privileged Motion/Question	Adjournment Recesses Orders of the day
i	Incidental Motion	Appealing
s	Subsidiary (secondary) Motion	Amending Tabling Dividing Postponing
m	Main Motion	Motion introducing new business, including more formal resolutions.

And then John and Vic indented secondary motions.