
IEEE P802.11
Wireless LANs

Tentative Minutes of the IEEE P802.11 Full Working Group

Hyatt Regency Hotel, Koloa, Kauai, HI

8-12 November 1999

Monday, 8 November Opening Session IEEE P802.11

1 Opening of Session

Meeting called to order by Vic Hayes in the Chair at 1310 hrs. Agenda of 59th session of 802.11 is in doc.: IEEE P802.11-99/243-r1 (archive file 9243r18W-Tentative-Agenda-Nov99.ppt).

Objectives for this meeting:

- Draft text for 802.11d
- Draft PAR and 5 Criteria for SG MAC Enhancements
- Send letters to liaison groups and to regulatory agencies as needed, for example:
 - FCC NPRM ET Docket No. 99-231
 - FCC NPRM ET Docket No. 99-42
 - WRC 2000/2002

1.0 Secretary, Document Officer, Attendance Book Officer

David Skellern, Secretary¹⁾ is present and ready to take the minutes.

Harry Worstel, Document Officer

Tim Godfrey, Attendance Book Officer

1.1 Roll Call

The 50 people in the room introduced themselves.

1.2 Voting Rights

Vic Hayes summarised the regulations regarding voting rights.

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- (a) Participation in debates, moving and seconding, is only permitted by voting members, in all 802.11 meetings (at all levels of Plenary and Working Group).
 - Chairs may permit observers to participate in debate
 - In study groups all attendees have voting rights.
- (b) To become a voting member and to maintain voting member status:
 - Participate in at least 2 out of 4 consecutive plenary meetings. An initial non-voting member obtains voting rights at the third meeting.
 - One interim may be substituted for a plenary
 - Participation in at least 75% of each meeting, in the room
 - Voting members will get a token to be used at votes
- (c) All members have voting rights at task group meetings
- (d) Voting rights may be lost:
 - After failing to pay the conference fee
 - After missing two out of three consecutive letter ballots
- (e) Current member status:
 - Voting members 92 at the beginning of this meeting
 - Nearly voting members 17
 - Aspiring voting members 63

1.3 Attendance List; Registration

- Attendance List: The attendance list has to be recorded for voting membership registration. It was circulated with Tim Godfrey supervising.

1.4 Logistics

- (a) Breaks: Coffee breaks are listed in the Agenda for 1000 and 1500. There is continental breakfast free for registered attendees. Lunches at members own expense from 1200-1300.
- (b) Document copying, submission and distribution:
 - Printing is available through the IEEE office.
 - Document distribution: Dissemination of documentation is via electronic file distribution. Two mediums only will be used. They are 1) 802.11 network and 2) flash memory cards.
 - All files must use the IEEE P802.11 templates for Word documents and PowerPoint. Vic Hayes explained how to properly name and enter information into the documents including the document information, headers and footers. For presentations it is necessary to view header and footer, and slide master and update the date, name and document number.
 - Documents must be available before the agenda item is presented.

1.5 IEEE Patent Policy

Vic Hayes, 802.11 Chair explained the IEEE Patent Policy as per Clause 5 of the IEEE Standards Board Bylaws and per Clause 6.3 of the IEEE Standards Operations Manual. He specifically asked for notification from members of patents or patent applications applicable to the Published standards or draft standard and for patent holders to submit the requested statement. The Chair will write to the patent holders or submitters asking for their position on use of the patent.

1.6 Individual Representation

All attendees are representing themselves as individuals and not companies and/or any special organization.

1.7 Anti-Trust Laws

Discussion of price is disallowed in 802.11 sessions due to the threat of price fixing. Price fixing discussions are governed by Anti-Trust Laws and are illegal.

1.8 Copyrights

If you know of copyrighted or proprietary material that is in the standard as we have drafts now, please let the group know so the Chair has the opportunity to request release.

Standards Publication shall constitute a "work made for hire" as defined by the Copyright Act. IEEE owns the copyright of the standards publication.

1.9 Other Announcements

- 1.9.1 Richard Paine & Dennis Kuwahara volunteered to help with Thursday night mailing.
- 1.9.2 Register for 802.15 ballot pool
- 802.15 is forming a ballot group for their first standard shortly
 - will be sent to members of the 802.15 ballot pool (as well as all participants in recent 802.x sponsor ballots)
 - if you want to join the ballot group, you need to be an IEEE and SA member **or** pay US\$ 200.--
- 1.9.3 Vic Hayes advised that IEEE Std 802.11b seems to have a problem with the MIB that was not caught by the balloters. This may cause the termination of the publication. We will start to deal with this at this meeting.
- 1.9.4 Naftali Chayat made several announcements. He
- thanked, as Chair of TGa, everyone for their hard work on 802.11a
 - reminded members about the next meeting in Tel Aviv
 - said that he would present an OFDM proposal for the PHY in 802.16 on Tuesday morning
 - noted that he will present a report on the last ETSI BRAN HIPERLAN meeting, held in Eindhoven
- 1.9.5 A straw poll of the group on use of Office97/Office2000 was 21/10.

2 Approval of the minutes of past meetings**2.1 Montreal meeting minutes 11-99/151**

Motion 99/59P01 (117)	To approve doc.: 99/151 Montreal minutes of previous meeting.
Moved:	Al Petrick
Seconded:	Stuart Kerry

Discussion: none**Motion passes 11-0-7****2.2 Santa Rosa meeting minutes 11-99/211**

Motion 99/59P02 (118)	To approve doc.: 99/211 Santa Rosa minutes of previous meeting.
Moved:	Harry Worstel
Seconded:	Richard Paine

Discussion: none**Motion passes 11-0-6****2.3 Matters Arising from the Minutes**

There were no matters arising immediately from either of the approved minutes.

3 Reports**3.1 Monday ExCom Meeting**

Vic Hayes reported:

- IPF Fee
 - This is the Fee to contribute to the US funded secretariats for ISO/IEC JTC1 and SC6
 - 802.11 has supported continuation in the past
 - 802.1 has challenged the continuation
 - Value: US\$ 100.-- per Plenary attendee
- Free Distribution of standards
 - 802.1 proposes to make 802 standards free or for low cost, subsidized by 802
 - IEEE-SA proposal to make PDF files available for US\$ 25.00, normal price for paper copies
 - Disagreement, further discussions in SEC, 1-3 PM
 - Tutorial and discussion for Tuesday 8-9:30 PM
- Electronic LMSC ballots
 - Wednesday 8 AM to write a letter to ask IEEE Std Dept to make all ballots electronic
 - Will include wishlist – 802.11 has used beta version and will give feedback
 - Vic will ask Bob Love to find out what has been updated already in the new version
- Monday Schedule at 802 Plenaries. Straw poll result:
 - Do we want to have the same Monday AM schedule for March meeting? Yes: 22 No: 0

- 20th anniversary of 802
 - First meeting was Feb 1980 in San Francisco
 - Special tutorials and Speakers, pins, T-shirts
 - Help organize the event: volunteers requested, meeting on Wednesday 10-11 AM

3.2 Financial report of the Santa Rosa meeting

Vic presented the summary financial report. The total cost for the meeting was \$18,936.70. Receipts were \$20,670, giving a surplus of \$1733.30. Additional details were needed before approval, which would be given on Wednesday.

3.3 Letter Ballots

- FCC on rule changes. Approved.
- FCC re direct sequence testing. Approved.
- Fold into one letter if both approved. Approved. Filed on 2 October.

3.4 BRAN Liaison

A liaison letter from BRAN is on the server doc.: 802.11-99/246. Please keep this within WG. This is in reply to our Liaison re adoption of 802.11a as part of the HIPERLAN family of standards in order to be able to operate in the European 5 GHz bands. There is not much sympathy for our request in the HIPERLAN group. The ETSI Board is considering the request. Vic noted that the UK-RA wants to change the rules in Europe so that the band will be available for competitive devices.

4 Review of contributions

Vic Hayes reviewed the list of document submissions from 243 to 246.

5 Adoption of the agenda 11-99/243-r1

Schedule Changes:

New items 7.4 to 7.8 were added. Item 7.7 on the Santa Rosa budget will be deferred until Wednesday. Vic drew attention to the schedule table in the Agenda document doc.: 802.11-99/243.

Motion 99/59P03(119) To approve the amended Meeting Agenda
 Moved: Al Petrick
 Seconded: John Fakatselis

Discussion: none

Motion passes: 23-0-1

A further item 7.9 Update on ETSI BRAN Standard (foreshadowed in announcements item 1.9.4) was subsequently added without objection.

The meeting continued with the approved agenda.

6 Unfinished Business

6.1 TGd

No unfinished business. Will work on TGd text today.

6.2 Regulation of RF Lighting Devices

Jim Zyren will not attend this meeting. The ad hoc group on regulations was asked to review this matter and report to the WG.

6.3 Regulations: Change of SS rules

The ad hoc regulatory group was asked to look at whether there was a need to file reply comments. Comments are open until November 19.

6.4 Regulations: WRC 2000 and WRC 2002 activities

The ad hoc regulatory group was asked to look at Richard Paine's contribution and come back with a recommendation.

7 New Business**7.1 Submission of new standards to ISO/IEC**

We have been asked to submit 802.11a and 802.11b for fast track standardisation in ISO/IEC.

Motion 99/59P04 (120) to support the ISO/IEC fast track procedure for 802.11a and 802.11b

Moved: John Fakatselis

Seconded: Al Petrick

Discussion: 802 has "Liaison Status A" in SC6 so can now directly put standards in the fast track procedure. There is merit for ISO/IEC approval in Europe and in Japan since it lowers the barrier to uptake.

Motion to amend by splitting into two motions

No objections were voiced.

Motion 99/59P04 (120) to support the ISO/IEC fast track procedure for 802.11a.

Moved: John Fakatselis

Seconded: Al Petrick

Discussion: none

Motion passes: 19-0-3

Motion 99/59P05 (120) to support the ISO/IEC fast track procedure for 802.11b

Moved: John Fakatselis

Seconded: Al Petrick

Discussion: Members wanted more information on the problems with the 802.11b draft before consideration of this motion.

Motion to Postpone

Motion 99/59P07 (121) to postpone motion on ISO/IEC fast track procedure for 802.11b until after the in-depth discussion of Agenda item 7.4 of Hawaii meeting.

Moved: David Skellern

Seconded: Richard Paine

Discussion: none

Motion passes: 19-0-2

7.2 Secretary Election

Motion 99/59P08 (122) to elect David Skellern the 802.11 Secretary

Moved: Stuart Kerry

Seconded: Al Petrick

Discussion: none

Motion approved by acclamation.

7.3 Volunteer to be secretary at Tel Aviv meeting

Tim Godfrey volunteered to act as secretary.

7.4 802.11b issue

Bob O'Hara explained that there are two problems with the approved 802.11b D7.0 text that make it impossible to compile the MIB properly to build a compliant implementation:

- ❑ Two attributes, HRDSSS Entry 6 and 7, are described in the new MIB but they do not exist. Two possible fixes were noted: either change the spelling so that they belong to the DSS table or add the new table entries.
- ❑ A new compliance group for the high rate PHY was added but there is no description of what constitutes compliance. This description needs to be added.

It was reported that the IEEE SB will not allow a simple editorial change and that a PAR is needed, which will require at least 60 days for approval.

Bob agreed to make a submission about what has to be replaced and draft a PAR that limits the correction to exactly these matters. He estimated that it was probably going to be a few pages of MIB text to correct these problems.

Motion 99/59P09 (123) Move to draft the text changes needed for 802.11b along with a PAR that is limited to the text changes.

Moved: John Kowalski

Seconded: Peter Ecclesine

Discussion: Recall that the MIB should be compiled to check the validity of the changes. The status of the 802.11b standard was questioned. Does availability of an electronic version constitute publication?

Motion to postpone the motion:

Motion 99/59P10 (124) Move to postpone motion (ID 123) until the Wednesday plenary and ask the chair to learn the procedural route to resolve this issue.

Moved: Naftali Chayat

Seconded: Stuart Kerry

Discussion: It was explained that the process being proposed is that recommended by IEEE. The procedural route is known. 802.11b is currently being sold as an unapproved standard; however, it is approved. The real issue is that someone implementing according to D7.0 will not be interoperable with someone with the new version that would arise from the proposed fixes. It was explained that the various routes have been discussed with IEEE.

Move to call the question:

Moved: Bob O'Hara

Seconded: John Kowalski

Motion to postpone fails 7-11-6

Motion 99/59P09 (123) put:

Motion passes 14-1-12

Return to Motion 99/59P05 (120) - to support the ISO/IEC fast track procedure for 802.11b

Discussion: Since there is no version of the standard with the corrections in it, this motion would not apply to the corrected standard. The general view was that we should focus on a fast track procedure within IEEE. This is not ready for a fast track in ISO and would damage our credibility.

Motion fails 0-18-4.

There was renewed discussion about whether every avenue in IEEE has been exhausted. The problems with 802.11b D7.0 were clearly editorial oversights and the proposed resolution would seem to unduly delay publication of the standard. The Chair was called upon to talk with the Chair of RevCom and sort out a better solution.

The Chair agreed to update the WG on Wednesday after discussion with the relevant IEEE officers.

7.5 Regulations: UK-RA Consultation document

All ok on UK-RA – asked ad hoc reg to bring a recommendation to us

7.6 Review of rules for sending letters to Administrations

This item is informative only and an action item for the WG Chair. The need is to confirm rules with Chair 802 to prevent problems in the future.

7.7 Expenditure of Santa Rosa Balance

Postponed until Wednesday when more information will be available.

7.8 Working Group Rules

A draft of the WG Rules would be brought on Wednesday. There is a requirement to document and publish the way we are operating. WG 802.15 wants to align their rules with ours.

7.9 Update on ETSI BRAN standard

Naftali Chayat reported.

ETSI HIPERLAN/2 PHY has gone to publication. Puncturing is a significant difference to 802.11a. The issue of adoption of 802.11a as one of the HIPERLAN family was not well received. 802.11a is seen as having a functionality that is included in HIPERLAN/2. The question has been raised at the ETSI Board. Two essential technical issues relating to allocation of the spectrum in Europe are requirements for transmit power control (TPC) and for dynamic frequency selection (DFS) for interference evasion and uniform distribution of interference. These are requirements met by HIPERLAN/2. 802.11a does not require them.

8 Adjourn for subgroups

The Plenary meeting adjourned at 1548 hrs.

Wednesday, 10 November 1999 Meeting of IEEE P802.11

Scheduled: 3:30pm – 5:30pm

9 Opening

Meeting called to order by Vic Hayes at 3:48PM and David Skellern, Secretary 802.11 was ready to take the meeting notes.

9.1 Agenda Update

Vic Hayes presented the updated agenda.

Motion 99/59P11 (136)	To approve the agenda as presented.
Moved	John Kowalski
Seconded	Chris Zegelin

Discussion: none

Motion passes 29-0-0

10 Reports from Subgroups**10.1 TGd**

Bob O'Hara reported that TGd has been meeting to create a draft. Chris Zegelin had presented to the subgroup and Bob O'Hara had presented a draft that has been worked on by the subgroup. Aim is to get a draft this week in order to meet our goal of a July approval by the SB.

11 New Business**11.1 802.11b Issue**

It was reported that a more satisfactory resolution to this issue had been negotiated with IEEE. The MIB (Appendix D) will not be published but the remainder of 802.11b D7.0 will go forward to publication. A reference will be made to the availability of a MIB on the web site.

Motion 99/59P12 (137)	to approve a PAR for Corrigenda to correct the errors in the MIB of 802.11b.
Moved:	Bob O'Hara
Seconded:	John Fakatselis

Discussion: Bob O'Hara read through the proposed Corrigenda PAR to be submitted. The PAR is limited to the Corrigenda. Bob also went through a first pass at the necessary corrections. What was missing was what are the pieces of the MIB that was necessary for performance. Vic suggested we propose the name 802.11b(Cor).

Motion passes: 35-0-1

12 There is no item 12.**13 Adjournment**

There being no other business, the Meeting adjourned at 1609 hrs.

Wednesday, 10 November 1999 Joint Meeting of IEEE P802.11 and P802.15

Scheduled: 1:00pm – 3:00pm

The minutes of the joint meeting are recorded separately in doc: IEEE P802.11-99/272.

Motions of the P802.11 WG recorded in that meeting include those numbered 99/59 P13 to 99/59 P18.

Thursday, 11 November 1999 Full WG Closing Plenary of IEEE 802.11

Scheduled: 3:30 PM - 5:00 PM

14 Opening

The closing plenary was opened by Vic Hayes at 3:32 PM and David Skellern, Secretary was ready to take notes.

14.1 Announcements

There were no announcements.

14.2 Document List Update

The document list was reviewed. New documents since the Monday WG plenary are docs: 802.11-99/247-276. Dennis Kuwahara was allocated 277 for the report of the regulatory ad hoc group.

14.3 Agenda Adjustments

A revised agenda was reviewed.

Motion 99/59P19 (no database ID allocated due to computer trouble) To approve the amended Meeting Agenda
 Moved: Stuart Kerry
 Seconded: David Skellern

Discussion: none

Motion passes, hearing no objection, by unanimous consent.

15 Reports and Actions from Subgroups

15.1 TGd

Bob O'Hara reported on TGd. The detailed report is doc. 99/249.

- Submission from Bob O'Hara: 99/244 Communication of PHY Specific Information
- Submission from Chris Zegelin: 99/257 International Roaming
- The following motion, which passed unanimously in the TG, was submitted.

Motion 99/59P20 (138) To issue TGd draft 0.2 contained in document P802.11d Draft0.2.doc to working group letter ballot.
 Moved: Bob O'Hara
 Seconded: Keith Amundsen

Discussion: There was the usual debate about Framemaker format – needed by IEEE. WG LB format will be Word. The LB will ask for approval to go to Sponsor Ballot.

Motion passes: 29-0-0

- The following motion, which also passed unanimously in the TG, was submitted.

Motion 99/59P21 (139) To empower the January interim meeting to process comments on the TGd letter ballot and to issue a new draft to working group letter ballot.
 Moved: Bob O'Hara for TGd

Discussion: none

Motion passes: 28-0-1

- Bob O'Hara noted that the SDL needs to be edited. Alan Heberling will be contacting Telelogic about issuing editor licenses to those volunteering to do the edit.
- Bob O'Hara will not be at the January meeting. Acting Chair is needed to handle the LB responses.

15.2 Regulations

Dennis Kuwahara gave an update on discussions, letters and letter revisions since the Wednesday report. The written report is doc.: IEEE 802.11-99/277.

- The draft letter to FCC on modifying the rules for 2.4 GHz spread spectrum devices (doc. 99/265r1) was discussed.
- Straw poll of voting members in favor of submitting to FCC: 18-0-7.

Motion 99/59P22 (140) To accept 99/265r1 as written, and to submit to the FCC, via ExCom
 Moved: Richard Paine
 Seconded: Don Johnson

Discussion: none

Motion passes: 25-0-1

- ❑ Draft letter for 5 GHz Coexistence Worldwide. This document will be submitted by Boeing to SG8 if approved. The endorsement of IEEE802 will be noted in the letter. The lengthy draft letter, doc.: 99/264, was reviewed partially by the group.

Motion 99/59P23 (141) To empower a group under the leadership of Richard Paine and including Peter Ecclesine, Dennis Kuwahara and Vic Hayes, to complete the final document for submission to ITU-R SG8a/9b via ExCom and then an appropriate administration.

Moved: Richard Paine

Seconded: Peter Ecclesine

Discussion: none

Motion passes: 27-0-0

- ❑ Draft letter to UK-RA, doc.:99/263r1

Motion 99/59P24 (142) To submit doc.: 99/263r1 to the UK-RA, via ExCom.

Moved: Richard Paine

Seconded: Peter Ecclesine

Discussion: none

Motion passes: 25-0-1

Motion 99/59P25 (143) To empower the members of the Ad Hoc regulatory group, under the leadership of Dennis Kuwahara, to respond to regulatory events or other needs, until the next plenary.

Moved: Stuart Kerry

Seconded: Richard Paine

Discussion: none

Motion passes: 26-0-0

15.3 Study Group Enhanced MAC

John Fakatselis reported that the PAR draft has been completed. He brought forward several motions that were approved by the SG.

Motion 99/59P26 (144) To request extension of the MAC enhancement SG until March 2000 Plenary.

Moved: John Fakatselis for SG

Discussion: Although the SG timetable spans this date, such extension requests are a necessary IEEE formality.

Motion passes: 27-0-0

Motion 99/59P27 (145) To ask the WG to send out a WG Letter Ballot on the MAC enhancements PAR Draft. If the Letter Ballot has 75% approval, the January 2000 Interim will be authorised to resolve all comments and submit the PAR to the ExCom. If the Letter Ballot has under 75% approval, the January 2000 Interim will resolve comments, and start a recirculation ballot.

Moved: John Fakatselis for SG

Discussion: This process was thought to be too complicated and a simpler process was proposed.

Motion to amend

Motion 99/59P28 (146) To approve MAC enhancements PAR and send to SEC and then to NesCOM.

Moved: Bob O'Hara

Seconded: Tim Godfrey

Discussion: none

Motion to amend passes: 18-5-6

The motion itself was then put without renumbering.

Motion passes: 22-1-4

It was agreed that Dave Bagby would seek input from MAC experts regarding the PAR.

Motion 99/59P29 (147) To ask the WG to send out a WG Letter Ballot on the IAPP PAR Draft, which is document 99/275. If the Letter Ballot has 75% approval, the January 2000 Interim will be authorised to resolve all comments and submit the PAR to the ExCom. If the Letter Ballot has under 75% approval, the January 2000 Interim will resolve comments, and start a recirculation ballot.

Moved: John Fakatselis for SG

Discussion: Again a simpler process was proposed.

Motion to amend.

Motion 99/59P30 (148) To amend 147 to read: To approve the IAPP PAR and forward to SEC and then to NesCOM.

Moved: Bob O'Hara

Seconded: Jan Boer

Discussion: none

Motion to amend passes: 20-1-7

Motion 99/59P31 (149) To approve the IAPP PAR and forward to SEC and then to NesCOM.

Moved: John Fakatselis for SG

Discussion: none

Motion passes: 22-0-6

Motion 99/59P32 (150) To empower the SG to consider comments and amend the two PARs, at the January 2000 interim meeting.

Moved: John Fakatselis

Seconded: Tim Godfrey

Discussion: A view was formed that this ability to amend the PARs was not legal. The SG has completed its work and the present PARs are the outcome.

Motion withdrawn.

There will be work in January in anticipation of the approval of the PAR. It was believed that starting to entertain more technical work and beginning a requirements document was valid work for the SG.

15.4 TGb

Motion 99/59P33 (151) To empower Chair to form Sponsor Ballot Group as soon as PAR has been approved.

Moved: John Fakatselis

Seconded: Bob O'Hara

Discussion: none.

Motion passes 26-0-0.

Motion 99/59P34 (152) To empower WG Chair to start WG Letter Ballot so that Sponsor Ballot can start from the March meeting

Moved: Bob O'Hara

Seconded: John Fakatselis

Discussion: none.

Motion passes 27-0-0.

15.5 Other Interim Meetings Required

None identified at this time.

16 Unfinished Business

16.1 Output documents

- | | |
|--|--------|
| <input type="checkbox"/> PAR 802.11b COR | 99/267 |
| <input type="checkbox"/> Letter to UK-RA re Consultation | 99/263 |
| <input type="checkbox"/> Letter to FCC re 99-231 | 99/265 |
| <input type="checkbox"/> Letter to ITU-R | 99/264 |
| <input type="checkbox"/> Extension for SG MAC enhance. | 99/ |
| <input type="checkbox"/> Extension for SG IAPP | 99/ |
| <input type="checkbox"/> Draft PAR MAC enhance. | 99/273 |

16.2 Next meeting

Objectives for next meeting

- To resolve LB results of TGD
- To start looking at the technical material for MAC enhancements and IAPP
- To resolve LB results of TGB
- To respond to Regulatory events and needs

17 New Business**17.1 Issue of Plaque and Awards for work on 802.11rev.**

Vic Hayes presented plaques to the following WG members:

Alan Heberling

Bob O'Hara

Ron Brockmann

Henri Moelard (accepted by Jan Boer)

Johnny Zweig (accepted by Bob O'Hara)

Darwin Engwer (accepted by Bob O'Hara)

Rick Ozer (accepted by Stuart Kerry)

17.2 Thanks to meeting organisers

Motion 99/59P35 (153) To commend the meeting organisers for a fine meeting. Thanks!

Moved: Bob O'Hara

Seconded: Stuart Kerry

Discussion: none

Motion approved by acclamation.

18 Closure

Meeting adjourned at 17:41.

Attendance list for the meeting held at
The Hyatt Regency Kauai, Kauai, HI

<i>Full name</i>	<i>statu</i>	<i>att.</i>	<i>phone</i>	<i>company</i>	<i>e_mail</i>
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<i>Full name</i>	<i>statu</i>	<i>att.</i>	<i>phone</i>	<i>company</i>	<i>e_mail</i>
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Mr. Chris Zegelin (Chris)	voter	100	+1 408 528 2667	Symbol Technologies Inc.	chrisz@psd.symbol.com

Tentative meeting schedule

Date	Place	Hotel	Type	Host
January 10-14, 2000	Tel Aviv, Israel		Interim	Breezecom
March 6-10, 2000	Albuquerque, NM	Hyatt Regency	Plenary	
May 8-12, 2000	Seattle, WA	Renaissance Madison Hotel	Interim	Boeing
July 10-14, 2000	La Jolla (San Diego), CA	Hyatt Regency	Plenary	
?September 18-22, 2000		Memphis, TN	Interim	FedEx
November 6-10, 2000	Tampa, FL	Hyatt Regency	Plenary	
March 12-16, 2001	Hilton Head	Hyatt Regency	Plenary	
July 9-13, 2000	Portland, OR	Portland Marriott	Plenary	
November 12-16, 2001	Austin, TX	Hyatt Regency Town Lake	Plenary	
March 11-16, 2002	?	?	Plenary	
July 8-12, 2002	Vancouver, BC	Hyatt Regency	Plenary	
November 11-15, 2002	Montreal, PQ	Queen Elizabeth	Plenary	

IEEE P802.11
Wireless LANs

Minutes of the Ad Hoc Regulatory Group**Date:** November 1999**Author:** **IEEE p802.11 Regulatory AD-Hoc Group**

Minutes of the Ad Hoc Regulatory Group
11/9/99

Convened at 10:40

Lou Dellaverson - Motorola
Don Johnson – WLAN Consulting
Denis Kuwahara – Boeing
Peter Murray – No Wires Needed
Richard Paine - Boeing
Reiner Mim – Proxim
Harry Worstell – AT&T

The ad hoc regulatory committee met in Kauai 3, convening at 10:40 on 11/9/99. We started with a discussion on the NPRM comments from the 2.4GHz widening of the channels. Don Johnson gave us a rundown on the comments. There were 114 comments filed, with 14 containing technical information. The deadline for replying to the filed comments was 11/2 and has been extended to 11/19. We concluded to not file any comments on the replies. Our original position was plain and has not changed. Don Johnson offered to write up a response in case the plenary wanted to reply.

We next had a discussion on the RF lighting issue. There has not been any update and Jim Zyren is not at the meeting. The discussion led to the conclusion that we have not changed our position and have no desire to say more to the FCC on the subject. We actually had sent the message to all the FCC commissioners, so the political arm has been notified of our position. There was some discussion about whether lighting was an ISM application, and whether to petition to the FCC on whether lighting was an ISM application. The conclusion was to not stir the pot by sending a letter to the FCC at this time. Peter Murray, of No Wires Needed, had attended the RF Lighting meetings and gave us a summary of the technology and confirmed that further progress has not happened and to give it a rest because the RF Lighting company (Fusion Lighting) has backed off a little.

We had a long discussion on the 5.15GHz worldwide proposal. Lou Dellaverson made the announcement that the European Regulatory Commission (ERC) announced that there will be a total of 475MHz for HIPERLAN specifications; 100MHz for HIPERLAN1 and 375MHz for HIPERLAN2. The decision was made during the week of 9/13/99. There was a lot of discussion about the changes that are ongoing in Europe about the requirements associated with this allocation of frequencies. Dynamic frequency selection and power control are added requirements for HIPERLAN. End users must reduce power until the bit error rate goes up. HIPERLAN base stations give allocations for controlling the power. HIPERLAN actually drags users off the channel when a radar comes on-line. There was some discussion about IEEE not being able to meet the requirements because the peer-to-peer nature of 802.11. The prototypes, so far, have been WATM and therefore are PVCs and therefore easier to manage with regard to regulating power.

Spread spectrum rules change was again a subject of discussion for wideband expanding of the channels. Proxim, Breezecom, and Aironet had technical submissions. They represented the whole range: Proxim was for, Breezecom was for it if FH and against it if DS, and Aironet was against.

We spent most of the afternoon on the UK-RA request for information about a proposed HIPERLAN0 and preparing a response to the UK-RA request.

There was discussion about the 5GHz worldwide. The point brought to the group by Lou Dellaverson from Motorola and co-chair of the ATM Forum was that any international standard should be able to operate anywhere. He mentioned that there are several people in the EU who are now supportive of opening up the coexistence issues in the 5GHz bands. The impacts of expanding the European position to include other international standards in addition to the HIPERLAN family are being reviewed and they may be receptive at this point to a proposal from IEEE 802.11. John DeSilva and Jose Herera from Domain 4 in the ECU are in support of such a proposal. We should propose to the ECU to create an open market place for wireless LANs. Jamshid Khun-Jush, the chair of BRAN, wrote a letter that stated the results of the meeting were inconclusive. In actuality, the presentation was a bloodbath. Jamshid was being helpful. There was a suggestion that we bring together an IEEE/BRAN study group to work out a compromise on coexistence. The suggestion from Lou Dellaverson was to use IEEE as a lead to go forward to the world to do coexistence. IEEE 802.11 could be the organization to seek out other standards groups and create agreements early to circumvent political and technical problems.

Adjourned at 5:20pm

Convened at 8:40am on 11/10/99

Worked the UK-RA document. and produced a letter 99/263.in reply to their inquiry.

Jim Carlo, Vic Hayes, and Fred Lucas gave us direction on how to approach 5GHz letter. They said that we had to submit the paper to the EXCOM with a motion to endorse a Boeing letter with a statement at the bottom that stated "Endorsed by IEEE 802.11 by a vote of XX/XX/XX."

11/11/99

Thursday Team Members:

Richard Paine – Boeing
Denis Kuwahara – Boeing
Don Johnson – WLAN
Dirk Ostermiller - Aware

The team spent the morning and the afternoon until 3:30pm working on the letter for 5GHz worldwide. It will be delivered as a letter from Boeing to US SG 8A/9B with an endorsement by IEEE 802.11 as a vote.

The votes at the final plenary were:

Endorsement of the UK-RA 25/0/1

Endorsement of the 5GHz Coexistence was 27/0/0

There was a final empower proposal to empower the members of the regulatory group, under the leadership of Denis Kuwahara to respond to regulatory events until the next plenary. 26/0/0

**IEEE P802.11 – P802.15
Wireless LANs – Wireless PANs**

Tentative Minutes of IEEE P802.11/P802.15 Joint Session

Hyatt Regency Hotel, Koloa, Kauai, HI

Wednesday, 10 November 1999 Joint Meeting of IEEE P802.11 and P802.15

Scheduled: 1:00pm – 3:00pm

1. Opening

Meeting called to order by Vic Hayes at 1:05 PM and David Skellern, Secretary 802.11 was ready to take the meeting notes.

1.1 Roll call

All 54 people present at the start of the meeting introduced themselves.

1.2 Document list update

Vic Hayes and Bob Heile noted the following new documents were available to the WGs:

- doc.:802.11-99/261 is the latest one in dot11.
- doc.:802.15-99/128-142 added this meeting

1.3 Announcements

1.3.1 802.11b Issue

Vic Hayes reported on a solution to the MIB error problem reported at the opening 802 plenary.

1.3.2 Standards CD-ROM available

2 Approval of Minutes

Motion 99/59 P13 (125) To approve the minutes of the previous joint meeting at Santa Rosa (802.11).
 Moved Stuart Kerry
 Second Al Petrick

Discussion: none

Motion Passes: 802.11 24-0-1

Motion 99/59P01 (126) To approve the minutes of the previous joint meeting at Santa Rosa (802.15).
 Moved Bruce Kraemer
 Second Ian Gifford

Discussion: none

Motion Passes: 802.15 18-0-0.

There are no matters arising from the minutes

3 Approval of the Agenda

3.1 Agenda update

New items added were:

- 5 New Business
 - Approval of Santa Rosa finances and disposition of the funds
 - Voting Rule
- 4.5 SG Coexistence

Motion 99/59P14 (127) To approve the agenda as proposed (802.11)
 Moved Al Petrick
 Second Harry Worstel

Discussion: none

Motion Passes: 802.11 30-0-0

Motion 99/59P02 (128)	To approve the agenda as proposed (802.15)
Moved Bruce Kraemer	
Second Mike McInnis	

Discussion: none

Motion Passes: 802.15 19-0-0.

4. Old business

4.1 Liaison officers

Vic Hayes reported that Bruce Kraemer, Stuart Kerry and Peter Murray were appointed as 802.11 liaisons to 802.15 (motion 99/57P24 at the Montreal meeting). Alan Heberling and Mike McInnis are the reverse liaisons.

4.2 Review 802.15 Call for Proposals/Participation submissions

Ian Gifford summarised doc.:802.15-99/124r0 WG Liaison Report. There is a new high-rate (up to 20 Mbit/s) submission from Kodak and three other companies. See convergence diagram in document. The 802.15 WG is moving ahead on schedule. A 30-day letter ballot is to be issued tomorrow on the Bluetooth-based (<1 Mbit/s) proposal. It was observed that there would be a single MAC running over the different PHY layers. There may be a low rate submission also. There is no update information on the ETSI-Bluetooth liaison.

Ian Gifford summarised doc.:802.15-99/123r0 TG1 Report. Draft released last week. The Santa Rosa mapping from Bluetooth to 802 was scrapped principally because of the delay it would cause in getting the draft out. The current draft reflects the input of about 300 comments.

Ian Gifford summarised doc.:802.15-99/122r0 Marketing Report. Working with IEEE-SA and IEEE Press to deliver Primer, Handbook, Companion and Pocket Guide.

4.3 Review Joint Regulatory activities

Dennis Kuwahara

- RF Lighting
 - No new information.
 - Question if this is ISM.
 - No action at this time.
- Review of 2.4GHz NPRM Comments
 - 114 replies with 14 providing supporting information.
 - No refuting data found.
 - Prepared draft reply – in case.
 - Dennis reviewed the proposed draft letter and received several inputs from the group.

The closing date for reply comments is now 19 November. There is no decision date scheduled yet.

- UK-RA consult document on 5.1 and 5.4 GHz bands
 - SG feels need for coexistence
 - Recommended ETSI/IEEE coexistence meeting (IEEE 802.11a with HIPERLAN/1 and HIPERLAN/2)
 - Reply to UK RA RFC series of five questions.
 - Jim Carlo, Fred Lucas, Vic Hayes to discuss.
 - Dennis reviewed the draft letter with the reply to the UK-RA.
- 5 GHz World Wide band allocation request
 - SG is still in working
 - US position to US SG8a/9b
 - For submission to 2002

4.4 P802.15 Hosted Venue choices

- Mike McInnis spoke to doc.:802.15-99/097. May 8-12 Renaissance Madison Hotel; lunch provided. Planning for 70-75 people. 46 people in the room said they would attend.
- Moving forward with 18-22 September 2000 is FedEx in Memphis, Tennessee. The tentative venue is a hotel with a Conference Centre in walking distance. Straw poll showed 38 for Memphis and 6 ambivalent.
- 10-14 January Tel Aviv – 34 will go; 24 will not go; 6 ambivalent. 25 November is deadline for reservations.

4.5 802.15 Study Group Coexistence

Steve Shellhammer summarised the SG Report 802.15-99/121r1. There is a new Coexistence web site <http://grouper.ieee.org/groups/802/15/SG>. Aim is to develop a Coexistence Model for the 2.4 GHz ISM band.

Jim Carlo has asked how 802.11 and 802.15 can collaborate on the coexistence work. The proposal to achieve this is as follows:

- SG becomes TG in 802.15
- Liaisons from .11 would vote in TG
- Progress of TG would be given at Joint meetings.
- Draft Recommended Practice would be submitted to both 802.15 and 802.11 for separate letter ballot. To get to ExCom the letter ballots must pass in both groups
- The proposal is that attendance at the SG/TG will count for credit for 802.11 members.

802.15 SG had taken straw polls on the following questions, and 802.11 members were similarly polled, with the results shown:

- that SG becomes a TG in 802.15: 21-4-9 (802.15); 19-0-9 (802.11)
- that SG becomes a TAG – 3-21-11 (802.15); 0-16-7 (802.11)
- that attendance at TG count for 802.15 attendance - 31-0-7 (802.15); 25-0-6 (802.11)

Motion 99/59P15 (129) to approve the separation of the subsequent letter ballot output from the 802.15 coexistence task group to both 802.11 and 802.15 voting members, and for both groups to agree before sending to ExCom (802.11).

Moved Stuart Kerry
Second Peter Murray

Discussion: none

Motion Passes: 802.11 21-0-6

Motion 99/59P03 (130) to approve the separation of the subsequent letter ballot output from the 802.15 coexistence task group to both 802.11 and 802.15 voting members, and for both groups to agree before sending to ExCom (802.15).

Moved Pat Kinney
Second Peter Murray

Discussion: none

Motion passes: 802.15 14-0-1.

4.6 802.11 Study Group MAC Enhancements

John Fakatselis reported on SG deliberations. Eight papers were presented this week. Areas include:

- QoS – multimedia and VOIP
- Enhanced Security
- Inter Access Point Protocol
- Authentication
- Load balancing
- Add proprietary information without violating interoperability.

Looking for approval of TG status no later than March.

5. New Business

5.1 Approval of Santa Rosa finance

Expenses \$18936.70. 78 attendees at \$265 yielded \$20,670 income leaving a surplus of \$1733.30

Motion 99/59P16 (131) To approve the Santa Rosa finances (802.11)

Moved Harry Worstel
Second Stuart Kerry

Discussion: none

Motion passes: 802.11 23-0-2.

Motion 99/59P04 (132) To approve the Santa Rosa finances (802.15)

Moved Harry Worstel
Second Mike McInnis

Discussion: none

Motion passes: 802.15 12-0-1.

Two flash cards were lost at that meeting. The cost of these was \$986. This leaves a new balance of \$747.30. It is proposed to purchase 6 walkie-talkies for use by 802.11 and 802.15 officers to a maximum of \$600. Al Petrick will purchase these.

Motion 99/59P17 (133) To purchase from the interim Santa Rosa meeting surplus funds, 6 (total) walkie talkies for 802.11 and 802.15 use (802.11)

Moved Stuart Kerry

Second Harry Worstel

Discussion: none

Motion passes: 802.11 24-0-2.

Motion 99/59P05 (134) To purchase from the interim Santa Rosa meeting surplus funds, 6 (total) walkie talkies for 802.11 and 802.15 use (802.11)

Moved Bruce Kraemer

Second Ian Gifford

Discussion: none

Motion passes: 802.15 9-0-2.

Motion 99/59P18 (135) To combine the voting procedure for the joint 802.11 and 802.15 into one combined vote, providing a quorum is present for both groups, otherwise it is a recommendation back to each group. Those that are voting members of both groups may have only one vote once per motion (802.11)

Moved Stuart Kerry

Second Al Petrick

Discussion: Liaisons get a single vote – the motion was amended to include this. The quorum issue was also discussed and the motion was further amended. Several members spoke against the motion on the basis that it would not fairly represent one of other of the groups.

Motion fails: 802.11 6-12-13.

No motion was put from 802.15.

6. Closure

The meeting closed at 1525.

**IEEE P802.11
Wireless LANs**

Minutes of the MAC Enhancement Study Group

Date: November 11, 1999

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1. Meetings at the 802.11 November 1999 Plenary

1.1. Tuesday AM

1.1.1. Appointment of Secretary

1.1.1.1. *Tim Godfrey*

1.1.2. Call to Order

1.1.3. Agenda for the week

1.1.3.1. *Policies Overview*

1.1.3.2. *Study / Schedule Overview*

1.1.3.3. *Call for Papers*

1.1.3.4. *Presentation of Papers*

1.1.3.5. *PAR Draft*

1.1.3.6. *New Business*

1.1.3.7. *Presentation to WG Plenary*

1.1.4. Agenda Approved without objection

1.1.5. Policies Overview

1.1.5.1. *Approximately 10 first time participants*

1.1.5.2. *Overview of voting rights – in SG everybody has the right to participate in debates, make motions, and vote. Key Motions of Robert's rules: Point of Order, Point of Information, Parliamentary Inquiry.*

1.1.6. SG Authorization and Charter

1.1.7. SG Schedule to completion

1.1.7.1.1. *Sept 99 – list of candidate enhancements*

1.1.7.1.2. *Nov 99 – Initial PAR*

1.1.7.1.3. *Jan 00 – Finalize project list, Update PAR draft*

1.1.7.1.4. *Mar 03 – Finalize PAR, Submit PAR*

1.1.7.2. *If we have a mature PAR by Thursday, we may accelerate the schedule.*

1.1.7.3. *No Questions or Comments*

1.1.8. Call for Papers

1.1.8.1. *Load Balancing PAR Criteria (NWN) 99/252*

1.1.8.2. *Frame Customization (NWN) 99/253*

1.1.8.3. *DFS/TPC (Lucent) 99/254*

1.1.8.4. *Introduction to QoS (Lucent) 99/255*

1.1.8.5. *802.11 enhancements for QOS (AT&T) 99/251*

- 1.1.8.6. *Reed Solomon Coding for IEEE 802.11b (Alantro) 99/250*
- 1.1.8.7. *Evaluation of Protocol Efficiency (Breezecom) 99/256*
- 1.1.8.8. *Streaming Enhancements to 802.11b (Sharewave)*
- 1.1.8.9. *Scheduling Overlay for 802.11b MAC (Sharewave)*

1.1.9. Order and Scheduling of Papers

- 1.1.9.1. *NWN Papers – 20 min for both*
- 1.1.9.2. *Lucent Papers – 40 minutes*
- 1.1.9.3. *AT&T Paper – 20 minutes*
- 1.1.9.4. *Alantro Paper – 15 minutes*

1.1.10. Presentation of Papers

- 1.1.10.1. *Load Balancing PAR Criteria (Maarten Hoeben, NWN) 99/252*
- 1.1.10.2. *Frame Customization (Maarten Hoeben, NWN) 99/253*
- 1.1.10.3. *Questions*
 - 1.1.10.3.1. *Q- How does the presentation map onto the motion that initiated the study group? A- If we are to enhance the MAC and add things that should have been there, why not do it. Q – I have a problem with adding proprietary things to a standard.*
- 1.1.10.4. *Later discussion will occur on the subject of what is in and outside the scope of the standard and the SG charter.*

1.1.11. Review of Candidate Projects from September Meeting

- 1.1.11.1. *QoS, VoIP, Multimedia*
- 1.1.11.2. *Enhanced Privacy*
- 1.1.11.3. *IAPP*
- 1.1.11.4. *Load Balancing*
- 1.1.11.5. *Extensions for proprietary vendor information*
- 1.1.11.6. *Enhanced authentication*

1.1.12. Review of PAR Five Criteria

- 1.1.12.1. *Broad Market Potential*
- 1.1.12.2. *Compatibility with IEEE 802*
- 1.1.12.3. *Distinct Identity*
- 1.1.12.4. *Technical Feasibility*
- 1.1.12.5. *Economic Feasibility*

1.1.13. Presentation of Papers, Cont.

- 1.1.13.1. *DFS/TPC (Lucent) 99/254*

- 1.1.13.1.1. *Dynamic Frequency Selection. Transmitter Power Control.*
- 1.1.13.1.2. *802.11a should be conformant to European regulations in order to be accepted as a HiperLan standard.*
- 1.1.13.1.3. *MAC enhancements are needed to implement DFS and TPC in 802.11a.*
- 1.1.13.2. *Introduction to QoS (Jan Boer, Lucent) 99/255*
 - 1.1.13.2.1. *Distributed access procedures for real time traffic (Blackburst)*
 - 1.1.13.2.2. *Questions:*
 - 1.1.13.2.2.1. Q – have you looked at the reduction of throughput due to the BlackBurst on the air. A – Comparable to CSMA/CA backoff in DCF.
 - 1.1.13.2.2.2. Q – Doesn't this assume no hidden nodes? This wouldn't have backward compatibility. In a busy medium, non-RT stations would delay RT stations. A –
 - 1.1.13.2.2.3. Q – have your simulations been implemented? A – yes, we have systems running.
 - 1.1.13.2.2.4. Q – blackburst is replacing the backoff? A – no, blackburst is only used by RT stations at PIFS.
 - 1.1.13.2.2.5. Q – have you looked at scalability in an enterprise? A – the nice thing is that it is fully distributed as in DCF. Q – CSMA has no guarantees, with a lot of stations black bursting, there could be a problem. A – One thing to address is how hard is the QoS guarantee to be? Q – would PCF work with Blackburst? A – No, this is not compatible with PCF. PCF is an option.
- 1.1.13.3. *802.11-Based Wireless Technology to Enhance Premises Voice and Data Services (Harry Worstel, AT&T) 99/251*
 - 1.1.13.3.1. *AT&T intends to provide broadband access to the home through Cable TV acquisitions.*
 - 1.1.13.3.2. *Questions*
 - 1.1.13.3.2.1. Q – what do you mean by client network point coordination function. A – we are providing a service oriented system to provide telephones over a cable system. The 802.11 network is a client to the overall network.
 - 1.1.13.3.2.2. Q1 – is the 802.11 network just an access network? A – 802.11 is just a function of the overall network. Q2 – is AT&T looking at providing services in the 5Ghz band? A – Yes, absolutely.

1.1.14. Poll

- 1.1.14.1. *How many people plan to be active in the area of QoS (strong recommendations or proposals) Approximately 4 companies, 8 people.*

1.1.14.2. *We should have an ad-hoc session to start to look at the baseline to address issues of compatibility and feasibility. Longer term objective – when we start the TG, we start the discussion at this point with consolidated proposals, and understand the thinking of other proposals so we can converge rapidly.*

1.1.15. Presentation of Papers, Cont.

1.1.15.1. *Reed Solomon Coding for IEEE 802.11 (Chris Heegard, Alantro) 99/250*

1.1.15.1.1. *Questions*

1.1.15.1.1.1. *Q – if a packet fails, does it get through the LLC? A – we are not suggesting the mechanism of how the system is implemented, just the advantages of FEC*

1.1.16. Review of Candidate Project list

1.1.16.1. *Current List*

1.1.16.1.1. *QoS, Multimedia over Wireless, VoIP.*

1.1.16.1.2. *Enhanced Privacy*

1.1.16.1.3. *Inter Access Point Protocol*

1.1.16.1.4. *Load Balancing*

1.1.16.1.5. *Proprietary vendor information*

1.1.16.1.6. *Enhanced authentication*

1.1.16.1.7. *Dynamic Frequency allocation*

1.1.16.1.8. *Power Control*

1.1.16.2. *Discussion*

1.1.16.2.1. *We cannot address this big of a list with one PAR.*

1.1.16.2.2. *We need to consolidate all of these into one PAR. Some may need to be removed.*

1.1.16.2.3. *We need a better definition of what belongs in the 802.11 MAC, and what belongs above it.*

1.1.16.2.4. *The IETF is defining Intserve and Diffserve, which are layer 3 functions that require layer 2 hooks to operate.*

1.1.16.2.5. *Is there something in the QoS scope statement that is outside of our charter?*

1.1.16.2.6. *The problem is that you are not stating what you want to accomplish. The PAR must be specific. What are the metrics of QoS? What is VoIP? Go back to the original motion, and remove those subjects that don't map.*

1.1.16.2.7. *For the QoS service question, what do we need to implement?*

1.1.16.2.8. *There are certain requirements for the applications that need QoS.*

1.1.16.2.9. *Objectives – maximize available bandwidth, minimize latency, support as many services as possible.*

- 1.1.16.2.10. *Comparison of the 802.11a PAR. It was not extremely specific.*
- 1.1.16.3. *Is the statement of work acceptable? "Enhance the 802.11 MAC to support streaming over wireless".*
- 1.1.16.4. *Discussion*
 - 1.1.16.4.1. *There should be several PARs. Let each subject stand alone.*
 - 1.1.16.4.2. *Enhanced Privacy: "Enhance the 802.11 MAC to implement stronger privacy protection". How much security is required? Specific applications, specific required security against specific threats.*
 - 1.1.16.4.3. *Do we need to quantify exactly what is to be done at this point, and perhaps limit what could be possible in a proposal? Do we discuss all the technical details and market issues before the PAR is issued, or get the PAR and then make the decisions? Prefers the latter.*
 - 1.1.16.4.4. *What is appropriate diligence for a PAR, and what is appropriate for the TG? As of September, we took the approach that we will not have quantitative requirements for the PAR.*
 - 1.1.16.4.5. *What do we have to do? Will ExCom deny the PAR approval?*
- 1.1.16.5. *Chair – will present existing text to ExCom to get opinion on what is required to create a satisfactory PAR?*

1.1.17. Adjourn Session

1.2. Wednesday AM

1.2.1. Call to Order

1.2.2. Call for Papers

- 1.2.2.1. *Security issues with IEEE 802.11 (99/257)*

1.2.3. Discussion of PAR scope and requirements

- 1.2.3.1. *Concern whether PAR is acceptable to ExCom. Chair has approached ExCom.*
- 1.2.3.2. *Howard Frazier from ExCom and RevCom to present his opinion and views.*

1.2.4. Howard Frazier

- 1.2.4.1. *Title is Pro-Forma for supplements*
- 1.2.4.2. *Scope is one or two sentences regarding what the group is doing.*
- 1.2.4.3. *Purpose is 3 or 4 sentences on why you are doing this.*
- 1.2.4.4. *Too much detail can tie your hands. You learn things through the process, that might require a PAR change later.*

1.2.4.5. Questions

1.2.4.5.1. Q – there are a lot of different areas we are looking at. Should we consider splitting this work into multiple PARs?

1.2.4.5.2. A – multiple PARs sound good, but remember a PAR authorizes you to conduct a task group and run a sponsor ballot. The real reason for multiple PARs is if you expect parts of the work to proceed at different rates, and would require separate sponsor ballots. If you believe all the enhancements will be developed at one time and balloted together, you should keep them together. Also if they affect a related area of the existing standard, they should remain together.

1.2.4.5.3. Q – regarding 802.11b. We recognize a need to fix the standard. What is the minimum time to go from a PAR to approval.

1.2.4.5.4. A – 802.11b was recently approved. Additions to the MIB which are necessary for the MIB could be included in the MAC enhancements SG.

1.2.4.5.5. Chair – let's restrict this discussion to the work of the SG

1.2.4.5.6. Q – As one who was urging for more specificity. EG – supporting “streaming”. What is the definition of streaming? Otherwise the parties involved have different expectations, and work at cross purposes. Please speak to the tradeoff there.

1.2.4.5.7. A – there are other vehicles to accomplish that. The group needs to understand what they are doing. The PAR is not the place to do that. Another list of internal objectives is appropriate. Some groups create a few pages of requirements documents. A PAR is not the right vehicle for that.

1.2.4.5.8. Q – do other groups do the objectives before or after the PAR.

1.2.4.5.9. A – there is no rule. Whatever works for the group. The objective document is under control of the group, so it can be internally modified. The PAR has to go to the Standards Board to be changed.

1.2.4.6. Example from work so far:

1.2.4.6.1. Candidate Project and Scope.

1.2.4.6.2. Chair – ask for comments on the scope statement on QoS.

1.2.4.6.3. Howard – this level of detail is probably already too verbose.

1.2.4.6.4. Chair – we need consolidation, not expansion.

1.2.4.6.5. Jim Carlo, Chair 802 & NesCom. The PAR defines your “sandbox” and what you are doing. You want to make it big enough to hold the final document, even if it shifts a little bit.

1.2.4.7. Questions

- 1.2.4.7.1. Q – comment on the 5 criteria
- 1.2.4.7.2. A – this is an 802-specific analysis tool. Each criteria has several bullet points that need to be addressed.

1.2.5. Presentation of Papers

- 1.2.5.1. *Evaluation of Protocol Efficiency (Breezecom) 99/256*
 - 1.2.5.1.1. *Additions to statements of work*
 - 1.2.5.1.1.1. DCF Acknowledgement scheme and frame aggregation.
- 1.2.5.2. *Streaming Enhancements to 802.11b (Rajugopal Gubbi, Sharewave) 99/259*
 - 1.2.5.2.1. *Questions*
 - 1.2.5.2.1.1. Q – regarding ECC, would that apply to the MAC payload?
 - 1.2.5.2.1.2. A – the header needs to be protected also, but it needs to be compatible.
 - 1.2.5.2.1.3. Q – Please clarify technique of avoiding collisions.
 - 1.2.5.2.1.4. A – Using the existing CFP in 802.11, with additional enhancements to improve throughput.
- 1.2.5.3. *Scheduling Overlay for 802.11b MAC (Rajugopal Gubbi, Sharewave) 99/260*
 - 1.2.5.3.1. *Questions*
 - 1.2.5.3.1.1. Q – Do you have any simulation data regarding feasibility
 - 1.2.5.3.1.2. A – much of this presentation is obvious. More data will be coming in later meetings.
 - 1.2.5.3.1.3. Q – If you go back 5 years ago, there were papers on the same subject. In the real environment, it just stopped working. You should review the papers from back then. Nobody then could figure out how to make scheduling work. You always have contention from devices not under your control. We don't own the band.
 - 1.2.5.3.1.4. A – There will be interference, not necessarily contention.
- 1.2.5.4. *Security issues with IEEE 802.11 (Bob Beach, Symbol Technologies) 99/257*
 - 1.2.5.4.1. *Questions*
 - 1.2.5.4.1.1. Q – You have lumped together a number of issues at various layers. A lot of these attacks are not .11 specific. All 802 protocols can have forged MAC addresses.
 - 1.2.5.4.1.2. A – The .11 specific issue is that the attacker can sit in the parking lot. You don't have to have physical access for .11

1.2.5.4.1.3. Q – A number of things can be solved without changing the MAC. EG at bridging function on top of the MAC in the AP

1.2.5.4.1.4. Q – if someone puts a microwave oven in the parking lot without a door, it would mount an equally effective denial of service attack.

1.2.6. Conclusion

1.2.6.1. *Chair will review papers and consolidate the different areas into more comprehensive text.*

1.2.6.2. *Next session we will start working towards the draft.*

1.2.6.3. *There are two sessions left. We may break off into subgroups if it is not effective to work in committee.*

1.2.6.4. *We hope to have draft text to present to Plenary tomorrow.*

1.2.7. Adjourn Session

1.3. Thursday AM

1.3.1. Call to Order

1.3.2. Status

1.3.2.1. *Completed presentation of 10 papers.*

1.3.2.2. *No additional papers to be submitted. Submission of papers closed.*

1.3.2.3. *Remaining work – working on draft text for the PAR.*

1.3.3. SG Schedule to completion

1.3.3.1. *Sept 1999 – Generate Candidate Enhancement Projects. Initial Draft of Objectives*

1.3.3.2. *Nov 1999 – Generate Candidate Enhancement Projects. Initial PAR draft.*

1.3.3.3. *Jan 2000 – Finalize Projects lists. Update PAR draft.*

1.3.3.4. *March 2000 – Finalize PAR, Submit PAR to ExCom.*

1.3.4. Review of the existing work area and scope table

CANDIDATE PROJECT	PROPOSER	SCOPE	COMMENTS/ SCOPE
QoS Multimedia over wireless Voice over IP	Maarten, Amar, Bob	Enhance the 802.11 MAC to support streaming over wireless with Emphasis on enhancements in the areas of Latency, bandwidth, Priority, error correction, data streams, channel agility policies.	Enhance the 802.11 MAC to perform quality of service based on PCF or DCF. Soft real time services. Ways to prioritize traffic. Integration of IETF in wireless. Enhance the 802.11 MAC to define and accommodate multimedia applications. Emphasis of enhancements in the areas of Latency, BW, Priority, channel

			<p>protection, data streams.</p> <p>REQs Maximize bandwidth</p> <p>Enhance the 802.11 MAC to facilitate voice over IP capability.</p>
Enhanced Privacy	Richard	Enhance the 802.11 MAC to implement stronger privacy protection. Enhance MAC management functions in the areas of algorithm negotiation , key length, key management to accommodate a more secure 802.11 system.	Enhance the 802.11 MAC to implement stronger security protection. Scalable mechanisms for security as applicable and required from users and within regulatory restrictions. Eliminate existing algorithm flaws that compromise security. Enhance MAC management functions in the areas of key management, length, negotiation , distribution and algorithm selection to accommodate a more secure 802.11 system. Note: evaluate other existing schemes i.e. IETF, BT
IAPP	Richard, Maarten	Enhance the 802.11 MAC to establish an inter AP protocol to maintain connectivity and ensure smooth hand off and continuity of services between APs.	Enhance the 802.11 MAC to establish an inter AP protocol to maintain connectivity and ensure smooth hand off and continuity of services between APs.
Load Balancing	Maarten	Enhance the 802.11 MAC to facilitate load balancing.	Enhance the 802.11 MAC to accommodate load balancing and avoid interoperability issues.
Extend the MAC to include proprietary vendor specific information.	Maarten	Enhance the 802.11 MAC to accommodate proprietary vendor specific information without compromising interoperability.	Enhance the 802.11 MAC to include proprietary vendor information without compromising interoperability.
Enhanced Authentication	Bob O	Enhance the 802.11 MAC to use stronger authentication mechanisms.	Enhance the 802.11 MAC to use stronger authentication mechanisms. AP to server authentication protocol with privileged classes.
Dynamic Frequency allocation	Jan		
Power control	Jan		
DCF acknowledgement scheme and frame aggregation enhancements	Alan		
Enhanced PCF mode.	Alan		

1.3.5. Review of Five Criteria**1.3.6. Discussion**

1.3.6.1. *Motion to strike from the PAR scope and purpose statement any language inconsistent with the motion that chartered the study group.*

1.3.6.1.1. *Moved D Bagby, Second K Admundsen. Fails 6/20/6*

1.3.6.2. *Does the draft scope text violate the scope of the charter? Straw Poll – 7/24/6. Based on that, we will continue with the scope as it is.*

1.3.6.3. *Motion to delete the clause in the PAR Scope statement regarding Inter Access Point coordination, and create a second PAR for an 802.11 Recommended Practice document to cover Inter Access Point Protocol.*

1.3.6.3.1. *Moved D Bagby Second B O'Hara,*

1.3.6.3.2. *Question Called H Worstel, 2nd John: 20/1/3*

1.3.6.3.3. *Vote on main motion: Passes 23/0/10*

1.3.6.4. *Consider whether vendor specific extensions are allowable within the scope of the standard.*

1.3.6.4.1. *Straw Poll – In favor of leaving the statement on vendor extensions: 14/10/7*

1.3.6.4.2. *Leave vendor specific extensions.*

1.3.6.5. *What work is necessary to provide an interface to higher layers to support QoS?*

1.3.6.5.1. *802.1d provides prioritization of data, and requires the MAC to support classes of service.*

1.3.6.6. *Consider striking the second sentence of the Scope statement.*

1.3.6.7. *Motion to strike second sentence of PAR Scope statement in its entirety.*

1.3.6.7.1. *Moved D Bagby, 2nd Hitoshi.*

1.3.6.7.2. *Vote on motion: Passes 13/10/6*

1.3.7. Draft Scope Statement

1.3.7.1. *[Enhance the 802.11 Medium Access Control (MAC) to improve and manage Quality of Service, provide classes of service, and enhanced security and authentication mechanisms. Consider efficiency enhancements in the areas of the Distributed Coordination Function (DCF) and Point Coordination Function (PCF)]*

1.3.8. Adjourn Session**1.4. Thursday PM**

1.4.1. Call to Order**1.4.2. Discussion of Purpose statement from draft PAR****1.4.3. Review of 5 criteria****1.4.4. PAR 1st Draft document 99/273**

1.4.4.1. *Motion to accept the PAR draft 99/273 for the MAC enhancements study group.*

1.4.4.1.1. *Moved Greg Parks, 2nd Jan Boer*

1.4.4.1.2. *Vote on motion: Passes 24/0/3*

1.4.5. Process

1.4.5.1. *PAR should be submitted to ExCom 30 days prior to their meeting for review.*

1.4.5.2. *This PAR should be submitted by February.*

1.4.5.3. *Discussion on authorizing the Interim to complete the PAR.*

1.4.5.3.1. *Proposal for Letter Ballot after January Interim.*

1.4.5.3.2. *We have the option to close on the PAR now and submit it now.*

1.4.5.3.3. *Only the Plenary WG session can authorize the PAR completion.*

1.4.5.4. *This session will ask the WG to send out a WG Letter Ballot on the MAC enhancements PAR Draft. If the Letter Ballot has 75% approval, the January 2000 Interim will be authorized to resolve all comments and submit the PAR to the ExCom. If the Letter Ballot has under 75% approval, the January 2000 Interim will resolve comments, and start a recirculation ballot.*

1.4.5.4.1. *Motion to accept text. Moved Tom T, 2nd Dick Eckard*

1.4.5.4.1.1. *Discussion*

1.4.5.4.1.2. *Q – In March, is the PAR approved on Monday or Thursday? A – They will look at it Monday, and approve / disapprove Thursday.*

1.4.5.4.2. *Vote on motion: Passes 27/0/3*

1.4.5.5. *We will have a Task Group by the end of the March Plenary.*

1.4.6. Extension of SG

1.4.6.1. *Motion to request extension of the MAC enhancements SG until the March of 2000 Plenary.*

1.4.6.1.1. *Moved Jan Boer, 2nd Amar Ghori.*

1.4.6.1.2. *Vote on motion: Passes 27/0/1*

1.4.7. PAR for IAPP

1.4.7.1. *Put IAPP PAR on same letter ballot as the MAC enhancements PAR?*

1.4.7.2. *Review of proposed PAR text*

1.4.7.3. *Motion to ask the WG to send out a WG Letter Ballot on the IAPP PAR Draft, which is document 99/275. If the Letter Ballot has 75% approval, the January 2000 Interim will be authorized to resolve all comments and submit the PAR to the ExCom. If the Letter Ballot has under 75% approval, the January 2000 Interim will resolve comments, and start a recirculation ballot.*

1.4.7.3.1. *Moved Tom T, 2nd Albert Young.*

1.4.7.3.2. *Vote on motion: Passes 20/0/5*

1.4.8. Adjourn Session

**IEEE P802.11
Wireless LANs**

Tentative Minutes of the IEEE 802.11 Task Group D

Hyatt Regency, Kauai, Hawaii

8-12 November 1999

Meeting Minutes Monday 1PM, November 8, 1999

Chair for the week: Bob O' Hara

Secretary for the week: Al Petrick

Bob O' Hara reviewed the agenda

Motion 1: to approve the agenda as presented in Doc: 99/249

Moved Al Petrick

Seconded: Chris Zeglein

Discussion: none

Motion passes: Approved by unanimous consent

Motion 2: to approve minutes as submitted in Doc: 213

Moved Harry Worstel

Seconded: Richard Paine

Discussion: none

Motion passes: Approved by unanimous consent

Call for submissions

Doc: 99/244 Communication of PHY Specific Information by Bob O' Hara

Doc: 99/257 International Roaming by Chris Zegelin

Chris Zegelin presented 99/244. Some discussion.

Bob O' Hara presented Doc: 99/244. Some discussion.

Bob O' Hara made a request that the group read over 99/244 and 99/257 before tomorrow 1PM Tuesday. On Tuesday the group will bring into smaller sub-groups to work on fine details and recommendations.

Meeting adjourned until 1PM Tuesday 11/9/99

Meeting Minutes Tuesday IPM, November 9, 1999

Continue with New Business

Proposed Action for Tuesday

Break into smaller groups to draft text for the standard

Reconvene Wednesday morning at 10:30AM

**Motion 3: To amend the agenda as follows:
Break into smaller groups to draft text for the standard
And reconvene Wednesday morning at 10:30AM**

Moved: Al Petrick

Seconded: Hitoshi Takanashi

Discussion: none

Motion passes: 10-0-0

Meeting adjourned until Wednesday 10:30AM November 10, 1999

TGd Meeting Minutes Wednesday 10:30AM November 10, 1999

Continue with agenda from Tuesday morning' s meeting

Strawpoll on number of channels in the bands in the future

Those that believe there will there be >256 channels

Strawpoll results (3)

Those that believe there Will NOT be > 256 channels in the bands in the future

Strawpoll results (8)

Meeting adjourned until Thursday November 11, 1999 10:30AM

Continue with agenda from Wednesday morning' s meeting

Motion 4: To send P802.11d Draft0.2 to working group letter ballot.

Moved: Peter Ecclesine

Seconded: Chris Zegelin

Discussion: none

Motion passes: 10/0/1

Motion 5: To empower the interim meeting to process comments and issue a new working group letter ballot.

Moved: Chris Zegelin

Seconded: Peter Ecclesine

Discussion: none

Motion passes: 9/0/0

Meeting adjourn until Thursday November 11, 1999 plenary 3PM.