IEEE P802.11
Wireless LANs

Approved Minutes of the IEEE P802.11 Full Working Group
March 15 – 19, 2004
Hilton Walt Disney World, Buena Vista, Florida, USA

Joint 802.11 / 802.15 Opening Plenary: Monday, March 15, 2004

1.1. Introduction

1.1.1. Meeting called to order by Stuart J. Kerry at 1:30PM.
1.1.2. The agenda of the 84th session of 802.11 is in doc: IEEE 11-04-149r4. This session is including 802.11, 802.15, 802.18 RREG TAG, 802.19 Coexistence TAG, and 802.20 MBWA.
1.1.3. Count of new participants at this meeting: 47
1.1.4. There are 504 people in the room.
1.1.5. Secretary – Tim Godfrey
1.1.6. Officers and Chairs of 802.11:

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1.2. Policies and procedures

1.2.1. Current policies and procedures are in 00/331r7. A revised version (r8) will be placed on the server.

1.2.2. Al Petrick reviews the policies and procedures contained in document 00/278r10.

1.2.2.1. Review of officer duties.

1.2.2.2. Review of voting tokens – 802.15 through 802.20 will continue to use paper tokens. 802.11 is using printed voting status on their registration badges. This is a trial effort. There were only 16 discrepancies. If anyone else has a question about voting status, see Al Petrick.

1.2.2.3. The WG chair notes that if a badge is lost, a WG chair, or one of the WG Vice Chairs will have to give permission to re-print the badge.

1.2.2.4. Hierarchy of policies and procedures.

1.2.2.5. Review of registration and recording rules.

1.2.2.6. Review of attendance list and recording procedures.

1.2.2.7. Review of voting rights and rules for earning and maintaining.

1.2.2.8. Review of membership and anti-trust rules.

1.2.2.9. Review of IEEE-SA Standards Board Bylaws on Patents in Standards. This information was last updated in February 2004.

1.2.2.10. The following text was read in its entirety to the membership by Al Petrick:

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**IEEE-SA Standards Board Bylaws on Patents in Standards**

6. Patents

IEEE standards may include the known use of essential patents, and patent applications, provided the IEEE receives assurance from the patent holder or applicant with respect to patents essential for compliance with both mandatory and optional portions of the standard. This assurance shall be provided without coercion and prior to approval of the standard (or reaffirmation when a patent becomes known after initial approval of the standard). This assurance shall be a letter that is in the form of either:

- a) A general disclaimer to the effect that the patentee will not enforce any of its present or future patent(s) whose use would be required to implement the proposed IEEE standard against any person or entity using the patent(s) to comply with the standard or

- b) A statement that a license will be made available without compensation or under reasonable rates, with reasonable terms and conditions that are demonstrably free of any unfair discrimination

This assurance shall apply, at a minimum, from the date of the standard's approval to the date of the standard's withdrawal and is irrevocable during that period.

Approved by IEEE-SA Standards Board –, March 2003, Feb 2004

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General Agenda Information        Slide 12        Stuart J. Kerry - Philips Semiconductors, Inc.
Inappropriate Topics for IEEE WG Meetings

- **Don’t** discuss licensing terms or conditions
- **Don’t** discuss product pricing, territorial restrictions or market share
- **Don’t** discuss ongoing litigation or threatened litigation
- **Don’t** be silent if inappropriate topics are discussed… do formally object.

**If you have questions,**
**contact the IEEE Patent Committee Administrator**
at patcom@ieee.org

Approved by IEEE-SA Standards Board – December 2002

1.2.2.11. The rules and status of copyright are reviewed.
1.2.2.12. IEEE Bylaws were amended in November 2003 by the IEEE SA bylaws. IEEE Bylaw 1300-4(4)
   1.2.2.12.1. Abstentions are no longer counted toward the total number of votes needed to approve or disapprove.
   1.2.2.12.2. Email ballots must receive approval from a majority of voting members of the working group.
1.2.2.13. The Working Group policies and procedures will be updated accordingly
1.2.2.14. Discussion
   1.2.2.14.1. Does this mean that all email letter ballots require now 50%? Any email ballot requires a majority of voting members in favor. We also require 75% approval for drafts. A 75% requirement of members for drafts would be a problem. However, we have determined that this rule applies to a binding vote. We do not conduct letter ballots on draft as a binding activity. That only occurs at a face to face meeting. We make a motion to forward the draft to ExCom. That is the formal vote. The ExCom agrees that our existing rules for letter ballots are acceptable.
   1.2.2.14.2. How do the quorum rules impact this? There is no change.
   1.2.2.14.3. Question about Procedure 10 – we need a clear understanding on what is required to go to Sponsor Ballot? This will be discussed with ExCom on Wednesday.

1.3. **IP Statements (Letters of Assurance)**
1.3.1. The WG chair asks if there are any LOAs?
   1.3.1.1. None from the floor.
1.3.2. 802.11 has received a letter from Sanyo regarding 802.11n. It has been registered with 802 PatCom.
1.3.3. The WG chair notes the previous meetings statement regarding IP statements impacting 802.11 Mesh Network SG and 802.15 Mesh Networks – It was quoted that TI has IP on Mesh Networks. IEEE’s ruling is that the PARs for Mesh Networking has not been approved, so we cannot approach the counsel of TI.

1.4. Leadership re-affirmation
1.4.1. The officers of 802.11 and 802.15 are asking for re-affirmation for another 2-year term.
   1.4.1.1. Stuart J Kerry for
1.4.2. Are there any other nominations for WG Chair in 802.11?
   1.4.2.1. None.
   1.4.2.2. nominations remain open until before the vote on Wednesday.
   1.4.2.3. The vote will be taken on Wednesday
1.4.3. For 802.15 – are there any candidates for chair of 802.15?
   1.4.3.1. None.
   1.4.3.2. The nominations for 802.15 will remain open until Wednesday.
1.4.4. 802.18 – Carl Stephenson and Dennis Kuahara are standing for re-affirmation. Nominations will remain open until 1:00PM on Wednesday, at which time the election will be held.
1.4.5. 802.19 – Steve Shellhammer (acting chair since November) will run for chair, Tom Seip for Vice Chair.
1.4.6. 802.20 – Jerry Upton

1.5. Announcements
1.5.1. Dorothy Stanley asks for volunteers for the Ad Hoc standing committee forming to respond to IETF CAP/WAP document. See Stuart or Dorothy.
1.5.2. Remember to sign into the attendance server.
1.5.3. Question about CAPWAP activity: We are going to consider the material and create a response. Requests that any output from the group would be presented to the group as a Letter Ballot, and follow with Comment Resolution.

1.6. Review of the Agenda
1.6.1. Stuart Kerry reviews the agenda for this joint meeting in document 04/149r4.
1.6.2. The agenda is approved with Unanimous consent.

1.7. Review of the minutes from January
1.7.1. Are there any matters arising from the minutes?
   1.7.1.1. None
1.7.2. The January 2004 minutes are approved with Unanimous consent

1.8. Wireless Network and Attendance
1.8.1. Al Petrick reviews document 03/447r7.
1.8.2. Review of network access procedures.
1.8.3. Review of file access procedures.
1.8.4. Does anyone not have wireless LAN or a laptop (one person)
1.8.5. Review of 802wirelessworld sign-in procedures.
1.8.6. Discussion
   1.8.6.1. Has the database been corrected for attendance irregularities? We have corrected some – if there are any problems, see Al Petrick and Harry Worstell.
   1.8.6.2. Stuart notes that Al and Harry have worked very hard to update all this information, and thanks them on behalf of the membership. Rick Alfin has done the same work for 802.15, and we thank them also.
   1.8.6.3. For 802.15 members, the database is up to date and correct. If there are problems see Rick Alfin.
1.8.7. Review of the document submission process
1.8.8. The WG chair encourages members to not sign in for others, and not to sign in when not in the proper room.
1.8.9. At 802wirelessworld.com, the paper information and handouts are now available

1.9. Review of Interim Sessions
1.9.1. May 9-14 in Hyatt Anaheim in California.
   1.9.1.1. Hotel reservation link is posted. It is a new system called PassKey that Hyatt is using. There have been problems working with some corporate firewalls. Please let the WG chairs know if there are problems. You can also use fax or telephone to register.
   1.9.1.2. Meeting Registration will be available later today.
   1.9.1.3. Pre-registration discount is open until April 16th.
1.9.2. September 12-17 – Esterel Hotel, in Berlin Germany.
   1.9.2.1. Registration fee will be in the $800 range.
1.9.3. January 16-21 – considering Hyatt Monterey
1.9.4. May 2005 – considering international venue
   1.9.4.1. Possibly Seoul, Korea or Sydney, Australia May 15-20.
   1.9.4.2. Straw Poll on members preference
      1.9.4.2.1. For Seoul 103: For Sydney 265
      1.9.4.2.2. Who is opposed to Seoul 5; Sydney 2;
      1.9.4.2.3. We will look for a Sydney meeting.
1.9.5. Possible venue for future Session – Park Plaza in Boston. It is too small for a Plenary. Possible location for September 2005.

1.10. Review of Finances
1.10.1. Bob Heile reviews the expenses for Interim meetings
1.10.2. We took in $617K and ran a yearly surplus of $3K.
1.10.3. The bank balance in Jan 2003 was 59K, currently at $62K.
1.10.4. We have some committed spending for Ideal and for audits. We have $15K reserved. Our available reserve is $47K.
1.10.5. We are going to try to build the reserve to cover the event of a meeting cancellation. We will try to keep the reserve at about $100K.

1.10.6. The audit package will be submitted to IEEE this week.

1.11. **Report on ExCom activities and Plans**

1.11.1. Bob Heile reviews the 802 Executive Committee Meeting.

1.11.2. 802 reserve is approximately $320K

1.11.3. IEEE indemnification policy is still an issue. It is not properly covering participants and chairs. The IEEE board of governors has not made a final action yet.

1.11.4. There were 86K download of 802 standards. 802.11 leads the list.

1.11.5. Corporate Advisory Group – 802.3 voted to not proceed on 2.5G Ethernet. The CAG has been used to develop standards on a “for hire” basis.

1.11.6. Ongoing discussion on Tutorials. 802.11 typically runs meetings in the evenings – technically not supposed to be in parallel with tutorials. Feedback from members is requested.

1.11.7. Financial operations rules still under review. Roll Call votes must be approved with 51%. Or the chair may rule to take a roll call vote. Roberts rules offer the option to allow a roll call vote at a lower procedure. That has not passed as part of Policies and Procedures. Feedback to the chairs on this issue is requested.

1.12. **IEEE 802 PARS for approval this week**

1.12.1.1. 802.1 Connectivity Fault Management
1.12.1.2. 802.1 comments
1.12.1.3. 802.3ap: Backplane Ethernet
1.12.1.4. 802.3ap: 10G Ethernet serial optics for FDDI Grade Multimode Fiber
1.12.1.5. 802.11p: Wireless Access for the Vehicular Environment
1.12.1.6. 802.11r: Fast Roaming
1.12.1.7. 802.11s: ESS Mesh Networking
1.12.1.8. 802.11m: Maintenance [changing existing Amendment PAR to Revision PAR]
1.12.1.9. 802.15.3b: MAC corrections and clarifications for 802.15.3 MAC
1.12.1.10. 802.15.4a: alter.PHY for 802.15.4: improved ranging capability, improved link margin, & mobility
1.12.1.11. 802.15.4b: 802.15.4 revision

1.12.2. Any WG can provide comments to these working groups by Tuesday at 5:00PM.

1.12.3. Resolutions must be provided back by Wednesday at 5:00PM.

1.12.4. Al Petrick will be the coordinator for 802.11 for feedback to other working groups.

1.12.5. **Discussion**

1.12.5.1. ExCom is going to consider 802.11p WAVE. Believes the PAR for an amendment is inappropriate. Why risk the standard for an unproven
application. Believes the PAR should be changed to a standalone standard. What is the process for making that suggestion.

1.12.5.2. The WG chair has referred this to committee. The WG has approved the PAR and SC. The issue will be discussed in the WAVE SG. It has been referred to committee for discussion. The SG will report back to the 802.11 WG Chair.

1.12.5.3. The 802.3ap designation is used twice.

1.13. **802.11 WG Voter Summary**

1.13.1. Al Petrick presents document 01/402r17

1.13.1.1. 403 voters
1.13.1.2. 145 nearly
1.13.1.3. Potential 548
1.13.1.4. 505 aspirant

1.13.2. Membership is rolling off as non-voters are removed from the membership due to electronic recording.

1.14. **Approval of the 802.11 Agenda**

1.14.2. The sessions for TGj are cancelled for today. Sheung Li will be arriving tonight or tomorrow.
1.14.3. Bob O’Hara is sick and unable to be here. Darwin Engwer will chair TGm this week.
1.14.4. The agenda is approved with Unanimous consent

1.15. **Review of the minutes from Vancouver**

1.15.1. The minutes are approved with Unanimous consent

1.16. **802.11 WG policies and procedures**

1.16.1. Document 00/331r7.
1.16.2. We have new input for changes.
1.16.3. A new document of proposed changes to the 802.11 P&P will be put on the server.
1.16.4. Changes

1.16.4.1. The TG chairs will be re-affirmed every 2 years one session after the WG chairs re-affirmation.
1.16.4.2. IEEE and 802.11 are now registered trademarks.
1.16.4.3. We will have closed reflectors to stop unsolicited emails, but they are open to public subscription per our WG P&Ps.
1.16.4.4. Voting Policies will be aligned with IEEE bylaws.
1.16.4.5. Nearly voters must request to have voting rights before the opening plenary by email per 802 LMSC rules.
1.16.4.6. We will remove “flash card” as the medium to transfer files.
1.16.4.7. These changes will be voted in May and go into effect in July.

1.16.5. **Discussion**

1.16.5.1. The year of the P&P is 00, not 2004.
1.16.5.2. We will change the P&P into a 2004 document from now on.
1.16.5.3. Clarification on voting rights – Is an email required now? Not for this meeting, but in the future, a request will be required. This comes from 802 LMSC. In this meeting a nearly voter will have a token.
1.17. **Documentation update**

1.17.1. We have 300 documents this year so far.

1.17.2. Please police the document formatting yourself, and bring to the TG chair and presenters attention.

1.17.3. Turn off tracking when making changes to document number or formatting changes.

1.17.4. We are not responsible for copyright violations for documents placed on our web site. Do not place copyrighted documents on the server.

1.17.5. The WG chair notes that members finding improperly formatted documents must bring it to the attention of the chair at that time.

1.18. **Nominations for TG chairs**

1.18.1. Nominations for chair of TGp, TGr, and TGs are open.

1.19. **Reports from 802.11 Sub Groups**

1.19.1. **TGe John Fakatselis**
   1.19.1.2. No Votes have been reduced from 30 to 16.
   1.19.1.3. We have 94% Yes and 6% No.
   1.19.1.4. We hope to go to sponsor ballot this week.

1.19.2. **TGi – Dave Halasz**
   1.19.2.1. Completing SB recirculation.
   1.19.2.2. Official results of Sponsor Recirculation ballot of 802.11i Draft D8.0. There 163 voters in pool. 122 for, 11 against. 7 abstain. 140 votes 85% return. 133 non-abstain votes. Passed with 91%.
   1.19.2.3. Comments in 04/0273.
   1.19.2.4. There were no new No votes

1.19.3. **TGj – Peter Ecclesine**
   1.19.3.1. Letter Ballot 66. Ballot Pool of 464 voters. We still need half of 464. Any voters who didn’t vote are needed to close this LB.
   1.19.3.2. We may do a recirculation and ask for Procedure 10 before July.
   1.19.3.3. Be ready for empowering motion.
   1.19.3.4. Discussion
   1.19.3.4.1. If you voted yes on the previous ballot, would an additional Yes vote help? If people voted in LB64 do they need to vote again? If you have not changed your position, you don’t need to vote again. Anyone who didn’t vote on LB64 needs to vote now.

1.19.4. **TGk – Richard Paine**
   1.19.4.1. Finished review of draft 0.09. Will start review of draft 0.13 this week. Considering Letter Ballot this week.
   1.19.4.2. Will incorporate comments into draft, consider security of measurement frames.
   1.19.4.3. Continuing teleconferences.

1.19.5. **TGm – Darwin Engwer**
   1.19.5.1. Will address 2 interpretation requests
   1.19.5.2. Update from maintenance to revision PAR
   1.19.5.3. Will address general list of work items.
1.19.6. T Gn – Bruce Kraemer
1.19.6.1. Objectives are to adopt FRCC and Usage Models documents, and discuss Call For Proposals timeline.

1.19.7. WNG – TK Tan
1.19.7.1. Will have 4 sessions.
1.19.7.2. Millimeter WLAN
1.19.7.3. AP Functional Architecture
1.19.7.4. Next Generation ideas
1.19.7.5. Update on spectrum policy and sharing
1.19.7.6. Wake On Wireless LAN
1.19.7.7. several presentations on wireless InterWorking

1.19.8. Fast Roaming SG – Clint Chaplin
1.19.8.1. Passed PAR and 5C. Comments may come in, and will be resolved.
1.19.8.2. Will vote to re-authorize SG.
1.19.8.3. Will start working as Task Group in remaining time.
1.19.8.4. Will accept submissions on roaming timing and measurement methodologies.
1.19.8.5. The WG chair notes that comments must be written, not email

1.19.9. ESS Mesh SG – Donald Eastlake
1.19.9.1. 04/080 has agenda and list of presentations for this week.

1.19.10. WAV SG – Lee Armstrong
1.19.10.1. Meeting objectives are posted – no change
1.19.10.2. Will have a draft amendment to review.
1.19.10.3. Questions
1.19.10.3.1. There was a question about suitability of transfer of work from ANSI to IEEE? Will take off-line.
1.19.10.3.2. Do we need to re-submit the question from the 802.20 member. It has been passed to Lee Armstrong.
1.19.10.3.3. The 802.11 chair asks for 802.20 to clarify if there is an 802.20 issue with the PAR.

1.19.11. WPP SG – Charles Wright
1.19.11.1. Goal is to discuss purpose and scope for PAR and 5C.

1.19.12. WG Editor – Terry Cole
1.19.12.1. Two parallel activities – Assuming 11ma is approved, will roll-up 11g and 11h and anything else approved by December into a new document.
1.19.12.2. Will work with groups publishing documents this year in a way consistent with the base document.
1.19.12.3. Presentation of document 04/005r2.
1.19.12.4. Internationalization – will move our 11g and 11h draft to ISO for internationalization.

1.20. Reports 802.15 Sub Groups
1.20.1. 236 voters in 802.15
1.20.1.1. 802.15 rules
1.20.1.2. Document will be released on Wednesday with updates.
1.20.1.3. 802.15.1a
1.20.1.3.1. LB for 802.15.1a passed. There are comments to be resolved.
1.20.1.4. 802.15.3b
1.20.1.4.1. TG3 will go into hibernation this week.
1.20.4.2. Have a PAR for TG3b. Will review submissions for maintenance starting on Tuesday.

1.20.5. 802.15.4b
1.20.5.1. Reviewing comment inputs pending PAR approval. Will review submissions for enhancing 802.15.4

1.20.6. 802.15.4
1.20.6.1. Will be going into hibernation

1.20.7. 802.15.5
1.20.7.1. Mesh Networking. Will look for definition.

1.20.8. 802.15.4a
1.20.8.1. 4a has a PAR for approval at this meeting. Will have call for proposal in the next few months.
1.20.8.2. 4a is low data rate for sensors. Alternate PHY with precision location capability.
1.20.8.3. Prepare for call for proposals.

1.20.9. 802.15.3a
1.20.9.1. Continuing down-selection process. Still two proposals on the floor. Will adjust agenda after this meeting.

1.20.10. Millimeter wave interest Group
1.20.10.1. Tutorial 6 on Tuesday on mm Wave.

1.20.11. Publicity (joint)
1.20.11.1. Will hold usual meeting on Tuesday at 8:00AM.
1.20.11.2. Industry updates, review press releases, and discuss press coverage.

1.21. Reports from 802.18 – Carl Stephenson
1.21.1. Will look at FCC NPRM on interference temperature, and cognitive radio.
1.21.2. Will conduct chair elections.
1.21.3. Will discuss unlicensed use of TV spectrum.
1.21.4. Ad Hoc group of 11 and 15 members discussed the ITUR contribution for global primary allocation at 5GHz. That contribution was well received. CEPT may also make a contribution.

1.22. Report from 802.19 – Steve Shellhammer
1.22.1. Meeting twice – looking at changes to P&P for coexistence. What steps are needed for coexistence between wireless standards.
1.22.2. Call for Submissions for predicting interference between wireless standards has gone out – document 19-04-070r3

1.23. 802.20 – Jerry Upton
1.23.1. Procedure in made in Vancouver – an affiliation statement and sign in process are required.
1.23.2. Modifications to P&P based on LMSC. Consultants must indicate who is funding the participation.
1.23.3. Officers election – 3 candidates for chair. Nominations accepted until election starts.
1.23.4. Voting tokens required for ballot.
1.23.5.  Comments on PARs will be handled before Tuesday deadline.

1.24.  Recess – at 3:30PM

2.  Wednesday, March 17, 2004

2.1.  Opening

2.1.1.  The meeting is called to order at 10:30AM by Stuart J. Kerry.

2.1.2.  Following the agenda in document 11-04-149r6

2.1.2.1.  Currently the same as R5

2.1.3.  The chair notes the rules prohibiting photographs and audio recording.

2.2.  Announcements

2.2.1.  Count of those who are new to 802.11 – 25 new attendees

2.2.2.  There are 336 people in the meeting room.

2.2.3.  The chair notes the CAC meeting on Thursday @ 07:00 am

2.3.  IP Statements (Letters of Assurance)

2.3.1.  The chair asks if there are any new LOAs?

2.3.1.1.  None

2.4.  Attendance Recording

2.4.1.  The attendance system was down yesterday. The attendance recording will be open from 6:00PM tonight until 7:30AM tomorrow to allow member to log attendance for yesterday.

2.4.2.  It will be open for yesterday today.

2.4.3.  Those who missed this morning will have an opportunity tomorrow evening.

2.4.4.  Members are reminded to not sign in as a new member if you lose your password or get a new email address.

2.4.5.  There was an attendance problem for Monday evening. That will also be available for registering tonight.

2.4.6.  The WG chair notes that he is disappointed with the problems. We are holding back $10K payment to Ideal until the problems are fixed.

2.4.7.  Discussion from the floor

2.4.7.1.  Request to have 802.11 formally acknowledge Vic Hayes for his tutorial. Also request that the group censure itself for not providing a recess to allow members to participate in tutorials. Request that the group do better in the future to support tutorials, especially when our own members and topics are presenting.

2.4.7.2.  The chair notes that he was present. He asks Vic Hayes to stand and extends an apology from the group as a whole to him, and notes our thanks for his contributions.

2.5.  Approval of the Agenda

2.5.1.  The WG chair reviews the agenda before the group.

2.5.2.  Any amendments? None

2.5.3.  The agenda is adopted by Unanimous consent
2.6.  **Reports from Liaisons**

2.6.1.  **802.11 to 802.1** – Dave Halasz
   
   2.6.1.1.  None

2.6.2.  **802.11 to 802.15**
   
   2.6.2.1.  Open Position – volunteers are requested

2.6.3.  **802.11 to 802.15.3** – Atul Garg
   
   2.6.3.1.  No Report

2.6.4.  **802.11 to 802.18** – Denis Kuahara
   
   2.6.4.1.  Report in document number 18-04-010
   2.6.4.2.  Review of docket under consideration
   2.6.4.3.  Preparing comments on Interference Temperature, Cognitive Radio
   2.6.4.4.  RR TAG SG1 is working on TV Spectrum Re-use.
   2.6.4.5.  Discussion
   
   2.6.4.5.1.  Docket number for Interference Temperature? It is on the 802.18 server.

2.6.5.  **802.11 to Wi-Fi Alliance** – Bill Carney
   
   2.6.5.1.  Report in 11-04-0331r0

2.6.6.  **802.11 to JEDEC JC-61** – Tim Wakeley
   
   2.6.6.1.  Report in document number 11-04-345
   2.6.6.2.  The JEDEC directors approved the RF-Baseband interface standard.
   2.6.6.3.  Will be available for download in a few weeks.
   2.6.6.4.  Will now work on interoperability and compatibility.

2.6.7.  **802.11 to CableLabs** –
   
   2.6.7.1.  Open Position

2.6.8.  **802.11 to IETF** – Dorothy Stanley
   
   2.6.8.1.  Document 04-11-217
   2.6.8.2.  Document dependencies have been updated.
   2.6.8.3.  802.11 EAP method requirements – an IETF draft has been created and in "last call". Comments are available. 802.11i will review comments.
   2.6.8.4.  CAP/WAP WG has been formed in IETF.
   2.6.8.5.  IETF requests additional AP functionality definition. A Call For Interest was made in 802.11 WNG.
   2.6.8.6.  IETF requests 802.11 to review the document that CAP/WAP is generating. An 802.11 chairs ad-hoc committee has been formed to formulate a response to the RFC.
   2.6.8.7.  The WG chair notes that Dorothy is the official liaison to IETF, and she should be the chair of the ad-hoc committee.
   2.6.8.8.  The CAP/WAP draft and reply comments will all be available in April.
   2.6.8.9.  IRTF research group in IP Mobility has been formed. There is a lot of interest in this area.
   2.6.8.10. The WG chair notes that 802 and IETF leadership have met and are trying to keep the work complementary.
   2.6.8.11. Discussion
   
   2.6.8.11.1.  Request that IETF drafts are published as 802.11 documents on our servers and reflectors. A link to the document will be posted. Dorothy will post the document in the 802.11 private area.
   2.6.8.11.2.  All IETF drafts are public, so there is no problem redistributing them.
2.6.8.12. The WG Chair calls for additional volunteers for the ad-hoc committee.
2.6.8.12.1. There are three more that will sign up with Dorothy.
2.6.8.12.2. Dorothy Stanley is appointed committee chair by acclamation.

2.6.9. 802.11 and MMAC – Inoue-san
2.6.9.1. Document number 11-04-352
2.6.9.2. Review of T71 ad-hoc WG activities.
2.6.9.3. There are two working groups and 1 special committee.

2.7. Old Business

2.7.1. Working Group Leadership Re-affirmation
2.7.1.1. Nominees are Stuart Kerry (Chair), Harry Worstell (2nd Vice Chair), Al Petrick (1st Vice Chair), and Tim Godfrey (Secretary)
2.7.1.2. The WG chair reviews the process for election according to the WG Policies and Procedures.
2.7.1.3. The election will be carried on by the 1st vice chair, Al Petrick.
2.7.1.4. Are there any other nominations for WG Chair?
2.7.1.4.1. None
2.7.1.5. The nominations are closed.
2.7.1.6. Al Petrick takes the chair.
2.7.1.7. Stuart Kerry presents a presentation and statement of his qualifications, commitment, accomplishments, and vision for the working group.
2.7.1.8. Questions from the floor
2.7.1.8.1. Given that we have all these study groups and task groups, how can we make organizational changes to help manage our success? Stuart is considering the architectural review board, and standing committees to review it.
2.7.1.8.2. Applauds the pro-active efforts through the CAC. Concerned about CAP/WAP – what is the relationship going forward? A good point – our liaison activity needs to make sure there is no turf war. We need to define and encompass scopes and avoid overlap. Our existing process has done a good job, but we need to remain as the pre-eminent forum for 802.11. We need to influence into international domains as well.
2.7.1.8.3. There was mention of an incident with the executive committee. What was mentioned was of concern. Requests clarification and position on that incident. Stuart notes that the issue was regarding the contracting for software development. The issue was developing assets to be used over multiple meetings. Feels that it was for the good of the WG, and personally took financial risk. Was prepared to accept the censure of the ExCom for the benefit of the WG.
2.7.1.8.4. Carl Stephenson, 802.18 WG chair states that there was never an allegation that Stuart or Bob ever did anything financially inappropriate, but only a matter of procedure. The results of their actions have resulted in many successful meetings. Encourages the membership to not have any concerns over the issue. The procedural aspects have been fixed to everyone’s satisfaction.
2.7.1.8.5. A member of the WG, notes that he wears two hats well, and has demonstrated fairness in the role of chair.
2.7.1.8.6. Affirming the chairmanship and asking for support of affirming drafts to sponsor ballot.
2.7.1.8.7. Al Petrick asks about Stuart’s Sponsorships and support.
    Stuart affirms that he has sponsorship by his company for the
    next 2 years.
2.7.1.9. Stuart J. Kerry is affirmed as WG chair by acclamation.
2.7.1.10. Stuart takes the chair
2.7.1.11. Any additional nominations for Vice-Chair?
    2.7.1.11.1. None
    2.7.1.11.2. Nominations are closed
2.7.1.12. Al Petrick gives a statement of his qualifications, accomplishments,
    philosophy, dedication, support, and vision for the Working Group.
2.7.1.13. Questions from the floor
    2.7.1.13.1. None
2.7.1.14. The WG chair reviews the duties of the vice chair position.
2.7.1.15. Al Petrick is affirmed as Vice Chair by acclamation.
2.7.1.16. Al Petrick states that his sponsoring company is committed to
    supporting him in the role of Vice-Chair for the term of office.
2.7.1.17. The WG chair notes that letters of support are required by LMSC
    policy.
2.7.1.18. Harry Worstell gives a statement of his qualifications, experience and
    vision for the working group.
2.7.1.19. Questions from the floor?
    2.7.1.19.1. None
2.7.1.20. Harry Worstell states that his sponsoring company will support his
    activities for the next two years.
2.7.1.21. Harry Worstell is affirmed as Vice Chair by acclamation
2.7.1.22. Brian Matthews is appointed by acclamation as Publicity Chairman.
2.7.1.23. Any other volunteers for chair of WNG SC? None.
2.7.1.24. TK Tan is appointed as WNG chair by acclamation.
2.7.1.25. Any other volunteers for WG secretary? None
2.7.1.26. Tim Godfrey is appointed as WG Secretary by acclamation.

2.7.2. Items on the agenda that don’t fit into this session will roll into
    Friday

2.7.3. TGm Motions
    2.7.3.1. Report in document 11-04-355r1
    2.7.3.2. Publication of a revision precludes publishing of any new
        amendments until the revision is completed.
    2.7.3.3. There are no changes to the PAR and 5C
    2.7.3.4. Motion:
        Moved: to adopt this response to Bob Grow’s comment on the
        TGm PAR change:
        The change in the TGm PAR to a full Revision includes the
        requirement that the Revision must include all Amendments
        ratified within 6 months of the approval of the new TGm PAR.
        The new TGm PAR is expected to be approved by RevCom by
        June 2004. Therefore all amendments ratified by December 2004
        must be included the Revision.
        Based on the current schedules of the other 802.11 Task Groups it
        is expected that by December 2004 the following Amendments
        may have been ratified:
        802.11i
        802.11e
The roll-up of the 2003 "WLAN Edition" together with all those amendments, and 802.11g, and 802.11h represents significant work and balloting. The plan would be to complete the rolled-up Revision by September 2005, in time for ratification by RevCom in December 2005.

If that schedule holds true, then it follows that these amendments must be published after the Revision:

- 802.11n
- 802.11p ( provisionally WAVE)
- 802.11r ( provisionally Fast Roaming)
- 802.11s ( provisionally ESS Mesh)

2.7.3.5. Moved Darwin Engwer on behalf of TGm

2.7.3.6. Discussion

What if one of the listed amendments are delayed beyond the end of 2004? Terry Cole responds that this has been dealt with, but the rules say that a revision has to include everything that has been passed. If the amendment slips, it cannot be included in the revision, or revise the PAR of TGm. Revcom members say to no get too uptight – it is a common problem, and can be worked out.

2.7.3.7. Vote: Motion passes 141 : 0 : 4

2.7.4. Affirmation of the WG Technical Editor

Terry Cole is appointed WG Technical Editor by acclamation.

2.7.5. Fast Roaming SG Motions

2.7.5.1. Motion: replace the first word “Enhance” in section 12 of 11-03-0771-05-frfh-possible-par.doc with “Enhancements to the”.

2.7.5.1.1. Moved Clint Chaplin on behalf of FR SG

2.7.5.1.2. Vote: motion passes 132 : 0 : 2.

2.7.5.2. Motion: replace the term "roam" in section 12 of 11-03-0771-05-frfh-possible-par.doc with “BSS transition”, and delete the word "roaming" from the same section.

2.7.5.2.1. Moved Clint Chaplin on behalf of FR SG

2.7.5.2.2. Vote: motion passes 135 : 0 : 3

2.7.5.3. Motion: replace “Fast Roaming” in the title in Section 4 of 11-03-0771-05-frfh-possible-par.doc with “Fast BSS-Transition”

2.7.5.3.1. Moved Clint Chaplin on behalf of FR SG

2.7.5.3.2. Discussion

2.7.5.3.2.1. Isn’t this just fast re-association? BSS Transition is in the standard already.

2.7.5.3.3. Vote: motion passes 120 : 0 : 5

2.7.5.4. Motion:

Motion: In 11-03-0771-05-frfh-possible-par.doc move the text that currently exists in section 13 to section 18, change “roam” and “roaming” to “BSS transition” and add headers to read:

Section 13:
A new set of WLAN applications are more sensitive to even momentary loss of connectivity during BSS transition (e.g. VoIP). With increasing amounts of state being needed before connectivity
is allowed as amendments are made to the 802.11 standard, the
time taken to complete a BSS transition is increasing while next
generation applications demand decreased BSS transition time.

Section 12:
The scope of modifications is during the STA transfer from one
AP to another (BSS transition). Determination of the need for a
BSS transition, selection of which AP to BSS transition to (with
the exception of the advertisement of the availability of fast BSS
transition services to the STA), and determination of when to BSS
transition are all outside the scope of this project.
As a design criteria, the proposed mechanism must accomplish this
goal without compromising security or existing Station services

And add the following text to section 13 to replace the moved text:

“To improve BSS transitions within 802.11 ESSs and to support
real time constraints imposed by applications such as VoIP.”

2.7.6. Mesh SG Motions
2.7.6.1. There were no comments, and thus no motions.

2.7.7. WAVE SG Motions
2.7.7.1. There are two comments on the PAR. One was a request that it is a
stand-alone document rather than amendment. The SG voted to keep it
an amendment.
2.7.7.2. The WG chair asks if the member was satisfied.
2.7.7.3. The member was not satisfied, and will bring a motion on Friday.
2.7.7.4. The motion that was passed in 802.20 was requesting a name
change. The SG voted to not change the name.
2.7.7.5. Is a motion needed in this group?
2.7.7.6. The WG chair says that the WG needs to vote also.
2.7.7.7. The SG chair states that the SG rejected the 802.20 request. They
requested changing the name to Wireless Access for ITS Environment.
The SG feels that ITS is only a subset of the applications that this work
would support. The PAR does have a distinct identity as 802.11 WAVE.
Thus no change to the PAR was requested.
2.7.7.8. The WG chair notes that the 802.20 vote on this matter had three
tied votes, that had to be broken by the chair as 41 to 40.
2.7.7.9. Motion: that the 802.11 WG maintain the PAR title as 802.11 WAVE,
and not implement the requested change proposed by 802.20.
2.7.7.9.1. Moved Lee Armstrong on behalf of WAVE SG
2.7.7.9.2. Second Colin Lanzl
2.7.7.9.3. Discussion
2.7.7.9.3.1. Does this motion answer the comment?
2.7.7.9.3.2. The motion is amended as follows, with the
consent of the mover.
2.7.7.10. Move that 802.11 appreciates the comment from 802.20 on the WAVE PAR, but rejects the suggestion on the grounds that distinct identity has already been established.

2.7.7.10.1. Moved Lee Armstrong on behalf of WAVE SG
2.7.7.10.1.2. Second Colin Lanzl
2.7.7.10.1.3. Vote: 97 : 0 : 9

2.8. **TG Chair Elections**

2.8.1. TGp - WAVE

2.8.1.1. Lee Armstrong nominated by Broady Cash
2.8.1.2. No further nominations, nominations closed
2.8.1.3. Lee Armstrong is elected chair of TGp by acclamation

2.8.2. TGr Fast Roaming

2.8.2.1. Clint Chaplin nominated by Keith Amman
2.8.2.2. No further nominations, nominations closed
2.8.2.3. Clint Chaplin is elected chair of TGr by acclamation

2.8.3. TGs – WPP

2.8.3.1. Donald Eastlake nominated by Steve Connor
2.8.3.2. No further nominations, nominations closed
2.8.3.3. Donald Eastlake is elected chair of TGs by acclamation

2.8.4. WIEN – Wireless InterWorking External Networks

2.8.4.1. Stephen McCann nominated by TK Tan
2.8.4.2. No further nominations, nominations closed
2.8.4.3. Stephen McCann is elected chair of WIEN SG by acclamation

2.8.5. WNM – Wireless Network Management

2.8.5.1. Harry Worstell is appointed chair of WNM by acclamation

2.9. **Agenda**

2.9.1. The agenda items form 4.8 onward are moved to Friday’s old business
2.9.2. FRSG has been moved to 3:30 today.

2.10. **The meeting is recessed at 12:45PM**

3. **Closing Plenary, Friday, March 19, 2004**

3.1. **Opening**

3.1.1. The meeting is called to order by Stuart J. Kerry at 8:10AM.
3.1.2. Following the agenda in 04/149r6. No changes from r5. Unfinished items from Wednesday are moved to today’s old business.
3.1.3. There are 188 people in the room.

3.2. **Agenda Review**

3.2.1. The chair reviews today’s agenda.
3.2.2. Any changes to the agenda? None
3.2.3. The agenda is approved with Unanimous consent.

3.3. **Announcements**

3.3.1. Members having trouble with Hyatt Passkey should see Dawn in the meeting office.
3.3.2. The chair announces that two members have not paid their registration.
3.3.3. The Chairs CAC has invited Dorothy Stanley to participate on behalf of the new Ad-Hoc

3.4. **IP Statements (LOA)**
3.4.1. The WG chair ask if there any new statements or LOA? None

3.5. **Documentation Update**
3.5.1. Reminder that confidential documents and company logos are not allowed. IEEE does not assume responsibility for the posting of copyrighted or confidential documents.
3.5.2. The WG chair reminds members that companies confidentiality statements may not be appended to emails on the reflector.

3.6. **TGe Report – John Fakatselis**
3.6.1. Document 409r2
3.6.2. Two paths to sponsor ballot. First asking for direct sponsor balloting. If that does not work, we will invoke procedure 10.
3.6.3. Review of the past balloting and results.
3.6.4. At this point we have no new No votes on LB67. Thus we are asking for Sponsor Ballot.
3.6.5. If procedure 10 is used, we will hold a meeting to confirm the draft. That meeting will be held on April 19th in Camas, Washington.
3.6.6. Discussion
   3.6.6.1. Did the draft change at this meeting? No
   3.6.6.2. Is everything in the document that has been voted on? Yes, we have a motion later. The Document package is 04/410r2 (straight to sponsor ballot) or 410r3 (in the case of procedure 10).
   3.6.6.3. There are no editing notes in the draft? We have reviewed and believe everything has been taken care of.

3.7. **TGi Report – Dave Halasz**
3.7.1. Report in document 419r0
3.7.2. First Sponsor Ballot Re-circulation
3.7.3. 122 affirmative votes, 11 negative votes 91% affirmative
3.7.4. Received 150 comments. 131 addressed, 19 rejected. 04/273r6 is comment spreadsheet
3.7.5. Motion to authorize SB recirc & request to be placed on the RevCom agenda in ExCom using Procedure 10.
3.7.6. Based on work done this week, 4 changed their “no” vote to “yes”. 126 aff, 7 neg: 94% affirmative
3.7.7. There will be an interim meeting April 20 & 21 in Chicago.
3.7.8. Jim Carlo, IEEE-SA President met to discuss WAPI. A contingent will go to China in May coincident with the IEEE 802.16 Interim.
3.7.9. The WG chair notes that we received a letter from CCSA (China Communications Standards Association) that was postmarked in January, but received in February. CCSA is producing a PWLAN
standard different in scope and purpose from WAPI. They wish to investigate how to share information and liaison.

3.7.9.1. The letter document 04-384-00-0000. It is the PDF version.

3.7.10. Discussion from the floor

3.7.10.1. What is the purpose of the meeting in May in Shenza?

3.7.10.2. Paul Nicolich states that the objective of the meeting is to exchange information between SAC and the IEEE, and to introduce the organization. We will explain what IEEE standards are about. The issue is that there are misunderstandings about the involvement and scope of SA. We want them to participate in the IEEE process.

3.7.10.3. China authorized several different groups for WLAN standards.

3.7.10.4. Thought that the IEEE was an international body? How could a Chinese body be equivalent?

3.7.10.5. Do we have the support of the US government? We have not had a dialog with the government on the topic. Some IEEE SA staff will be meeting with Dept of Commerce though.

3.7.10.6. There are many standards organizations in China, like we have here.

3.8. **TGj Report – Sheung Li**

3.8.1. Report in document 423r0

3.8.2. Actions by TGj this week. Reviewed comments from LB66..

Resolutions in 04-411r2. Will present to ExCom and request Procedure 10. Details in document 80r1.

3.8.3. Will conduct ad-hoc meeting the week of April 21st in Sunnyvale CA.

3.8.4. Next meeting will resolve comments from SB.

3.8.5. The WG chair notes that different groups are having interim meetings at various locations. The CAC is considering co-locating these meetings.

3.8.6. The WG chair explains why LB66 was kept open for so long. There was a change in rules regarding return ratio. It is now 75%. Our LB64 had a return ratio of 58% which was then allowed. We then recirculated as LB66. It had a return ratio of 66%. Technically LB64 and LB66 were both under the 75% rule. The WG chairs extended the ballot to be sure we had sufficient return ratio. The 802 chair ruled that the return ratio for LB64 could be allowed at a return ratio of 50%. All future ballots will require 75% return ratio. Both LB64 and LB66 are valid ballots.

3.8.7. Discussion

3.8.7.1. The Sponsor Ballot rules say a 30% abstain will invalidate a ballot. Does that apply to LBs? We will ask for clarification at ExCom today. The resolution will be provided on the reflector.

3.9. **TGk Report – Richard Paine**

3.9.1. Report in document 276r4

3.9.2. Integrated .9 draft review and create draft .13 including new information.

3.9.3. Remaining issue is security of measurement frames.
3.9.4. Objectives for July are Letter Ballot
3.9.5. Will hold weekly teleconferences starting April 7th.
3.9.6. Members are invited to join the review of TGk draft 0.14. Will finish April 13th. This is an open process, and not a letter ballot.

3.9.7. Discussion
3.9.7.1. Commends TGk for the process of internal review before balloting.

3.10. **TGm Report – Darwin Engwer**
3.10.1. The WG chair thanks Darwin for filling in for Bob O’Hara this week as chair.
3.10.2. Report in document 427r0
3.10.3. Processed two interpretation requests –
3.10.3.1. Adopting beacon parameters in an IBSS – what does “all parameters” mean, and what about elements that are not understood. Response in document 04/425. (Darwin reviews this document for the group). The group approved the response.
3.10.3.2. Scrambler in 802.11b resetting between PLCP and PSDU. Response (document 04/426) is that this is clearly stated in 15.2.3 and 15.2.4
3.10.4. Draft 0.1 of the ongoing TGm was published. It is just a template and header. There is only one maintenance update. It was not affirmed this week.

3.11. **TGn Report – Bruce Kraemer**
3.11.1. Report in document 04/357r0
3.11.2. Objectives were to complete documents for channel models, functional requirements, comparison criteria, and usage models. Still have two to close on in May.
3.11.3. CFP to be released in May.
3.11.4. Technical presentations were submitted but not presented.
3.11.5. Will continue FRCC discussions in teleconferences. Will cover remaining usage model comments in teleconferences. Teleconferences will be announced.
3.11.6. In May will complete Comparison Criteria, and Usage Models. Will present information for presentations of proposals.

3.12. **Publicity Report – Brian Matthews**
3.12.1. Report in document 04/308
3.12.2. Received reports from industry groups.
3.12.3. Wi-Fi Alliance, BT SIG, WiMedia
3.12.5. Discussion
3.12.5.1. Why are the letters Q and X not being used for 802.11? The reason is because Q and X are used by 802.1, and it may cause confusion. There was also confusion with the 802.web site and the 2003 revision.

3.13. **WNG Report – TK Tan**
3.13.1. Report in document 04/282r1
3.13.2. Had presentation on millimeter wave LANs
3.13.3. Presentations on 802.11 AP functional architecture – related to IETF CAPWAP work. Will recommend starting SG to investigate.
3.13.4. Discussed spectrum policy, procedures, Wake on Wireless LANs, and back-end InterWorking security.
3.13.5. Presentations on 3G InterWorking.

3.14. **Fast Roaming SG – Clint Chaplin**
3.14.2. Addressed comments on PAR and 5C, reaffirmed vote and accepted PAR and 5C. Voted to extend SG until Jan 2005.
3.14.3. Presentations on requirements, measurements, and roaming techniques.
3.14.4. Group name – Fast BSS Transition isn't ideal for an acronym. Fast Inter-AP transition (FIAT) will be used as the group tag.
3.14.5. In May will work on requirements, architecture, process, and consider liaison groups
3.14.6. The WG chair notes the group should verify that FIAT is not rude in any country.
3.14.7. Discussion

3.15. **Mesh SG – Donald Eastlake**
3.15.1. Report in document 04/398
3.15.2. Re-affirmed PAR and 5C. Voted to extend SG just in case.
3.15.3. Teleconferences have been scheduled starting April 21st.

3.16. **WAVE SG – Lee Armstrong**
3.16.1. Report in document 04/430
3.16.2. Reviewed text for draft amendment.
3.16.3. Discussed the request from 802.20 to change the name. Rejected because the current name has distinct identity.
3.16.4. Discussed the suggestion to make WAVE an stand-alone document. Took a vote and decided to continue as an amendment. The SG felt that there are good concerns, but they apply to the WG as a whole, and not just to WAVE SG.
3.16.5. Discussion
3.16.5.1. Why does the group think this standard should not be stand-alone? The group wants to maintain interoperability and compatibility with ongoing developments and amendments to 802.11. If it is standalone, it makes it difficult to maintain consistency.
3.16.5.2. What is the document number for the WAVE Minutes? They are not posted yet. (later provided as document 04/434)
When is the appropriate time in the agenda for motions? In New Business.

### 3.17. WPP – Charles Wright

3.17.1. Report in document 04/270r2
3.17.2. Goal was to create PAR and 5C to form Task Group.
3.17.3. Had presentations on vision and scope, and intentions for final output document.

#### Discussion

3.17.4.1. Please position this group with respect to Fast Roaming and RRM. WPP is about off-line measurement to characterize equipment and predict performance when the system is on line. There are no protocol changes in WPP. Fast Roaming is moving state information between APs.
3.17.4.2. Will this be an amendment to the standard or a recommend practice? Right now we are focusing on a recommended practice. But it hasn’t been voted on.
3.17.4.3. Why does the group think this will be a success? 802.11 is complex with many use cases – benchmarking is difficult and might not produce usable results.

### 3.18. ANA Lead – Duncan Kitchin

3.18.1. Duncan is not present.
3.18.2. Are there any unfulfilled requests? None


3.19.1. Report in document 04-421r0
3.19.2. Summary of proposed changes to P&P. There are eight changes explained.

3.19.2.1. Update the TG and SG chairs positions to re-affirm every 2 years
3.19.2.2. Define SC chair.
3.19.2.3. Specify that nearly voters must request voting privileges, not automatic.
3.19.2.4. IEEE and 802.11 are registered trademarks.
3.19.2.5. Removed flash cards for documentation submission.
3.19.2.6. Changes in sponsor balloting rules according to changes in LMSC rules.
3.19.3. Red-line document 00/331r8 is on the server.
3.19.4. We will review and vote on these in May. Will take effect in July.
3.19.5. The WG chair reviews the process for P&P changes for the members out of our current P&P document.
3.19.6. These are collected changes from members, and have been reviewed by the CAC.

#### Discussion

3.19.7.1. What is the status of moving the 2000 document to a current year? The membership request making that change. Will make a note in the document revision history.

### 3.20. WG Technical Editors report
3.20.1. Terry Cole has left the meeting.
3.20.2. Jon Rosdahl has a copy of Terry Cole’s presentation.
3.20.3. Document 04/005r3.
3.20.4. Internationalization – sending 802.11 2003 edition to ISO.
   3.20.4.1. Will bring a motion on behalf of the editors.
3.20.5. Updating P&P regarding editors duties.
3.20.6. Proposing an editors guide document.
3.20.7. Discussion
   3.20.7.1. Note that these motions were not voted on by the editors.
   3.20.7.2. The WG chair agrees that these motions have not had adequate
   review by the membership. Believes it is appropriate to add this material
   to the pending rules change, which will be discussed at the May Meeting.
   That will give 2 months for review.
   3.20.7.3. The WG chair officially announces that these proposals are under
   official review by the WG.
   3.20.7.4. Jon Rosdahl states that this would not be voted on until July.
   3.20.7.5. A member from the floor would like to see definitions of what
   constitutes editorial and technical changes. Would it be appropriate to
   add such statements to this document?
   3.20.7.6. The WG chair requests that Terry Cole includes definitions into this
   document.
   3.20.7.7. Al Petrick will review any changes to the rules regarding editors
   according to his normal process of updating the Policies and Procedures.

3.21. Old Business
3.21.1. Agenda change to appoint vice chairs – no objections.
3.21.2. Vice Chair Positions and Treasurer.
   3.21.2.1. Stuart Kerry Appoints Al Petrick First Vice Chair by acclamation.
   3.21.2.2. Stuart Kerry Appoints Harry Worstell Second Vice Chair by
   acclamation.
   3.21.2.3. First Vice-Chair duties are Policies and Procedures and acting
   Treasurer. Second Vice Chair duties are balloting, voting, attendance,
   and documentation.
   3.21.2.4. The WG chair asks if anyone wishes to take on Treasurer? None
   3.21.2.5. The First Vice Chair Al Petrick is appointed treasurer by acclamation.
3.21.3. Report from CAC Bonneville Tiger Team – Brian Matthews
   3.21.3.1. Report in document 04/360r1
   3.21.3.2. Team formed to streamline the process of developing standards
   while maintaining quality.
   3.21.3.3. Presentation is deferred due to the precedence of Standing Orders.

3.22. Standing Orders
3.22.1. TGe Motions
   3.22.1.1. To forward the IEEE LMSC the TGe draft 8.0 of IEEE 802.11e, and
   the supporting TGe letter ballots history data in document 04/409r2 and
   04/410 r2 to request initiating the “Sponsor Letter Ballot” for IEEE
   802.11e.
   3.22.1.1.1. Moved John Fakatselis on behalf of TGe
   3.22.1.1.2. Vote on the motion: passes 133 : 1 : 2
   3.22.1.2. Instruct the WG chair to invoke procedure 10 of the LMSC policies
   and procedures in initiating the Sponsor Letter Ballot for IEEE 802.11e in
the event that ExCom votes against the immediate submittal to sponsor letter ballot of TGe draft 802. During the Friday March 19, 2004 meeting in invoking procedure 10 the chair is authorize to submit document 04/409r3 and 04/410r3 as the supporting documentation for the request.

3.22.1.2.1. Moved John Fakatselis on behalf of TGe
3.22.1.2.2. Vote passes 133 : 0 : 3

3.22.1.3. Motion: if ExCom invokes procedure 10 for the 092.11e sponsor ballot process a meeting will be held in Camas Washington the week of April 19th 2004 This interim meeting is authorized to confirm the results of the WG TGe letter ballot per procedure 10 of the LMSC policies and procedures or proceed with comment resolutions.

3.22.1.3.1. Moved John Fakatselis on behalf of TGe
3.22.1.3.2. Discussion

3.22.1.3.2.1. When we authorized interim ad-hoc, how did it go? Understood that the group adjourned early and caused controversy. The TG chair states there was no formal protest, and that the meeting was successful. This meeting would be in the best interest. The LB was successful.

3.22.1.3.2.2. If we are going to respond to sponsor ballots, those are done by the SB pool. The motion is to address procedure 10. Will send out to WG the same document which comes back with no comments. A meeting to confirm that document is required by procedure 10.

3.22.1.3.2.3. Wants to clarify that the meeting is to confirm the vote to go to sponsor ballot and not to resolve SB comments.

3.22.1.3.2.4. There is a procedure to confirm by email. Do you want to cancel? No, the WG took this vote and wishes to cover every contingency.

3.22.1.3.2.5. Call the question

3.22.1.3.2.5.1. Dorothy S / Carl S
3.22.1.3.2.5.2. No objection / Q called.

3.22.1.3.3. Vote: Motion passes 113 : 2 : 17

3.22.2. TGj Motions

3.22.2.1. Believing that sponsor ballot comment responses in 11-04/273r6 and motions duly adopted in TGj will enable the editor to produce the document mentioned below that satisfies IEEE-SA rules for sponsor ballot recirculation and that the recirculation will likely result in approval of the draft, Authorize a SB recirculation of 802.11i draft 9.0 to conclude no later than 4/15/2004 and request to be placed on the RevCom agenda in ExCom using Procedure 10.

3.22.2.1.1. Moved Dave Halasz on behalf of TGj
3.22.2.1.2. Discussion

3.22.2.1.2.1. This is a motion to comment on the comments? This does 2 things. We want to recirc draft 9.0 and to get put on ReVCom agenda. The task group is working on the comments.

3.22.2.1.2.2. The Sponsor Pool does the voting and makes comments. The TG resolves them. We are asking for a ballot to go out to the Sponsor Pool.

3.22.2.1.3. Vote: Passes 133 : 1 : 3

3.22.3. Recess until 10:30

3.22.4. TGj Motions

3.22.4.1. Motion: Believing that comment responses in the document mentioned below and the draft mentioned below 802.11j draft 1.3
March 2004

demonstrate that the WG 802.11 LB rules have reached an orderly endpoint, Approve comment responses in 11-04/411R2

3.22.4.1.1. Moved Sheung Li on behalf of TGj
3.22.4.1.2. Vote: Motion passes 96 : 0 : 3

3.22.4.2. Motion: Believing that comment responses in 11-04/411R2 satisfy WG 802.11 rules for letter ballot recirculation and that a recirculation will likely result in approval of the draft, Authorize a 15-day LB recirculation of 802.11j draft 1.4 to conclude no later than April 20, 2004 and request approval of a SB for draft 1.4 by ExCom using Procedure 10 conditional upon an approval of draft 1.3 in letter ballot 66.

3.22.4.2.1. Moved Sheung Li on behalf of TGj
3.22.4.2.2. Vote: Motion passes 100 : 0 : 5

3.22.5. TGk Motions – none

3.22.6. TGm Motions

3.22.6.1. Document 425r1 is posted on the server. Darwin Engwer points out that there is a correction in the first item of the list. This value is not the local MAC – it is the unique value of the IBSS assigned per clause 11.1.3.

3.22.6.2. This was a technical error in the interpretation response. It is a value that must be adopted.

3.22.6.3. The WG chair that this change does not fall within the 4 hour rule. Are there any objections to waiving the rule in this case?

3.22.6.3.1. None

3.22.6.4. Motion: to accept and forward the interpretation response contained in document 04-425r1 to Linda Gargiulo at the IEEE office as the official response of the 802.11 working group.

3.22.6.4.1. Moved Darwin Engwer
3.22.6.4.2. Second John K.
3.22.6.4.3. Discussion

3.22.6.4.3.1. Believes the clarification is reasonable, however another interpretation is possible. This interpretation could have an impact on TGj. Considering tabling the motion.

3.22.6.4.3.2. The WG chair suggests referring it back to committee.

3.22.6.4.3.3. Darwin notes that the very last sentence indicates that this interpretation is included for future inclusion in maintenance. This request is officially against 802.11-1999. We have to respond. The TGm group is aware that this may need to be re-address in light of currently unapproved amendments such as TGi.

3.22.6.4.3.4. Still thinks that this interpretation could cause problems in the future and recommends protecting ourselves.

3.22.6.4.3.5. Interpretations are not supposed to consider future standards. It is strictly based on the current version of the standard.

3.22.6.4.3.6. The WG Chair confirms the rules.
3.22.6.4.3.7. Still feels that the current standard contradicts itself.

3.22.6.4.3.8. We could vote to refer this back to TGm, or empower them to work off-line and bring something to the next meeting.

3.22.6.4.3.9. The issue is the deadline for response. We have to classify the request by April 8th. We did classify it as ambiguous.
3.22.6.4.3.10. The WG chairs asks Yvette from the IEEE if it is acceptable to wait until the next meeting. She states that further work can be done.

3.22.6.4.3.11. The TGm chair requests that the requester attend the TGm sessions and participate.

3.22.6.4.3.12. In light of the list of known errata in the current document that was brought to the group via TGm rather than the interpretation request process – recommends that this be handled in the same manner. Proposes that we just classify it as ambiguous.

3.22.6.4.3.13. If a document is deemed ambiguous, what does that mean? It means you have to sort it out later.

3.22.6.4.3.14. Would the chair let the interpretation request go forward, and assign the issue to TGm? Yes, the WG chair agrees.

3.22.6.4.3.15. The TG chair agrees that it is assigned to TGm.

3.22.6.4.4. Vote on the motion. Passes 88 : 1 : 13

3.22.6.5. Motion: to accept and forward the interpretation response contained in document 04-426r0 to Linda Gargiulo at the IEEE office as the official response of the 802.11 working group.

3.22.6.5.1. Moved Darwin Engwer on behalf of TGm

3.22.6.5.2. Vote on the motion: Motion passes 99 : 0 : 3

3.22.7. T Gn Motions

3.22.7.1. None

3.22.8. Publicity Motions

3.22.8.1. Believing that the anticipated approval by ExCom of new 802.11 Task Groups p, r, and s is newsworthy and that information in 11-04-310 is accurate and appropriate for a press release, approve transmission of aforementioned document to IEEE-SA marketing staff

3.22.8.1.1. Moved by Brian Matthews on behalf of Publicity

3.22.8.1.2. Vote on the motion: Passes 106 : 0 : 0

3.22.9. WNG Motions

3.22.9.1. Move that the WNG SC recommends that the IEEE 802.11 WG asks ExecCom to form a study group in 802.11 to create a PAR and five criteria to form a new task group that will describe the AP functions and behaviors.

3.22.9.1.1. Moved TK Tan on behalf of WNG

3.22.9.1.2. Discussion

3.22.9.1.2.1. What specific functions and behavior in an AP do they wish to standardize that are not already standardized?

3.22.9.1.2.2. Speaks against the motion – more presentations and time in WNG are needed to understand this question.

3.22.9.1.2.3. TK presents slides showing the problems to be addressed – network administration, configuration. Standardization of Access Point and Access Controller. There is no standard way of splitting the functions today. That is the gist of the need for standardization.

3.22.9.1.2.4. The WG chair limits debate to 2 minutes per speaker.

3.22.9.1.2.5. This information really needs to be in the standard.

3.22.9.1.2.6. The IETF has requested us to form a group to look at this.
3.22.9.1.2.7. Favor having the WNG to crisply define the problem before starting another SG.

3.22.9.1.2.8. The WNM SG already has this activity in its scope.

3.22.9.1.2.9. Suggests that the SG be started, but they don’t have to go straight to PAR and 5C. There are issues within 802.1 regarding AP architecture. Need to document the AP architecture.

3.22.9.1.2.10. The WG chair notes that an SG can last up to 1.5 years.

3.22.9.1.2.11. Call the Question

3.22.9.1.3. Vote on the motion: Motion Fails: 43 : 46 : 32

3.22.9.1.4. The chair request WNG to re-assess the situation and come back at the next meeting.

3.22.10. Fast Roaming SG Motions

3.22.10.1. Request the IEEE 802.11 Working Group to extend the Fast Roaming Study Group through the January 2005 meeting and forward to the Executive Committee for approval.

3.22.10.1.1. Moved Clint Chaplin on behalf of FRSG

3.22.10.1.2. Discussion

3.22.10.1.2.1. Extensions are granted on a 6 month basis? How does this go to January? It officially expires in July.

3.22.10.1.2.2. Don’t see any reason for this group. Against this group. The groups won’t quantify what fast is and won’t discuss when or how to roam. We already have the technology to do this. This is the 3rd time the group has met, and it isn’t going anywhere.

3.22.10.1.2.3. The chair notes that the PAR and 5C were approved by the WG.

3.22.10.1.2.4. In favor – believes there is significant problems that need to be addressed. Existing mechanisms are not feasible for applications such as VoIP.

3.22.10.1.2.5. It is not the chairs prerogative to limit debate.

3.22.10.1.2.6. Question called by the chair / no objection

3.22.10.1.3. Vote on the motion: Passes 89 : 4 : 16

3.22.10.2. Motion: Reaffirm the decision made at the January 2004 IEEE 802.11 Interim session by the Fast Roaming Study Group and the IEEE 802.11 Working Group, which was: “Believing the PAR & 5 Criteria contained in the documents below meet IEEE-SA guidelines, Request that this PAR & 5 Criteria contained in 11-03/771R5 (subsequently revised at the March 2004 IEEE 802 Plenary session by the SG and the WG as a result of WG comments and contained in 11-03/771R6 & 11-03/772R4 be posted to the ExCom agenda for WG 802 preview and ExCom approval (and subsequent submission to NesCom).”

3.22.10.2.1. Moved Clint Chaplin on behalf of FRSG

3.22.10.2.2. Discussion

3.22.10.2.2.1. The WG chair points out that this was previously approved at an interim. The quorum was not counted, so this re-affirmation is done at a plenary where we have a quorum by definition.

3.22.10.2.2.2. Shouldn’t the timeline for the SG start at this point? The SG has been meeting, and the work of the SG was delayed until November 2003 at the vote of the WG.
The PAR and 5C are on the ExCom Agenda? Yes. If the ExCom approves, it goes to NesCom.

Question called / no objection

Vote on the motion: Passes 88 : 2 : 4

**Mesh SG Motions**

Moved, That the approval of the ESS Mesh PAR and 5 Criteria (11-04/54r2, 11-04/56r1) are hereby reaffirmed and forwarded to the 802 Executive Committee for approval.

Moved Donald Eastlake
Second Colin L

Discussion

None

Vote on the motion: Passes 98 : 1 : 2

Moved, That the 802.11 Working Group continue the charter of the ESS Mesh Study Group through the November 2004 Plenary session.

Moved Donald Eastlake on behalf of Mesh SG

No discussion / question called / no objection

Vote on the motion: Passes 100 : 0 : 5

**WAVE SG motions**

Believing the PAR & 5 Criteria contained in the document below meet IEEE-SA guidelines, request that this PAR and 5 Criteria contained in IEEE 802.11-03/0943r5 and IEEE 802.11-03/0967r3 and already posted to the ExCom agenda for WG 802 preview and ExCom approval (and subsequent submissions to NesCom) be reaffirmed.

Moved Lee Armstrong on behalf of WAVE

Discussion

Against – wishes to change from an amendment. Reasons are in document 348. Believes we should avoid making changes to the standard whenever possible. Believes it is an unproved and niche application. Thinks WAVE might want to freeze the standard. Proposes a counter motion to form a new standard.

The SG chair affirms that the wish of the group is to create an amendment.

The objective of WAVE is to create devices that can be cross-functional between the WAVE environment and normal 802.11 uses.

Against the motion. Feels that an amendment is not the proper standard.

In favor – it is unfair to use WAVE as an example of what may or may not be wrong with the WG. There are millions of devices in existence in the vehicle. This is not an unproven market space. It is well proven, and it is good for 802.11 to address it.

The WG chair notes that the motion on the floor is to reaffirm, not regarding the status of the amendment.

Would like to consider the amendment status. Moves to lay on the table until brought back by a specific motion to bring it back.

Moved John Kowalski
Second Colin

Vote: motion passes 57 : 27 : 33

The WG wishes to take a motion from the floor despite the fact that we are in standing orders.

Any Objection?
3.22.12.4.1.1. None

3.22.12.5. Motion: The 802.11 WG believes that the type of the project specified by the proposed WAVE PAR should be a "New standard" rather than an "Amendment to an existing standard" (see Clause 5.b of the proposed WAVE PAR).

3.22.12.5.1. Moved Andrew Myles
3.22.12.5.2. Second Carl Stephenson
3.22.12.5.3. Discussion
3.22.12.5.3.1. During the week, have discussed this with the WAVE committee, and reviewed the document. The document is less than 40 pages. I don’t see that it is a large effort. Probably the smallest effort we have done over the past few years. The amendment is primarily a new PHY in the document. It would be no different than other clauses such as IR or FH. The WAVE SG would have the responsibility to ensure future changes. Speaks against the motion.

3.22.12.5.3.2. Doesn’t understand what would happen if it becomes a new standard? Would someone explain?

3.22.12.5.3.3. Suggest that WAVE would write a document that references the 802.11 document – a specific version.

3.22.12.5.3.4. The WG chair notes that this is on the agenda as an amendment, and the ExCom might not allow the change and defer the task group until July.

3.22.12.5.3.5. Against the motion – Been involved since before 802.11 was adopted. The group was based on leveraging 802.11. The 802.11 standard provides lower costs. The WAVE group has come to us, and we should foster their development.

3.22.12.5.3.6. We have a group focusing on security. If we accept this into our document, we are taking on the responsibility for maintaining this. Personally not interested in the area.

3.22.12.5.3.7. To clarify, if a new document is created that would stand alone, it would be numbered 802.11.1. It would be maintained separately and not part of amendment, compilation, and revision.

3.22.12.5.3.8. The WAVE document is 98% common with the rest of the 802.11 standard. There is 2% or less that is in addition. It is new spectrum, and a 100% addition to the market. Against the motion.

3.22.12.5.3.9. There might be other reasons to consider Andrew’s motions. Propose to delay consideration of this until we have more information. Suggest we take this up in May.

3.22.12.5.3.10. The WG chair notes that that would mean removing WAVE from the ExCom agenda.

3.22.12.5.3.11. The SG chair asks if we go ahead with the plan to create an amendment, could we later change to a standalone document? Then we could move ahead now, and then have the debate later?

3.22.12.5.3.12. You can change PARs but it is not often done.

3.22.12.5.3.13. For the motion – we don’t want to become cornered into an area we can’t handle in our documentation. Does the 802.11 Editor have an opinion? He is not here.
3.22.12.5.3.14. Don’t want to stop the work, but it is a question of placement. Thinks the WAVE group would benefit from freezing at a particular version of the standard. Concerned that the WAVE group will go away.

3.22.12.5.3.15. Against the motion. The 802.11 WG should correct its document problems as a whole, rather than reject the WAVE PAR. This is an area that needs standardization and interoperability with WAVE and standard 802.11 network applications. It is a positive thing to be an amendment.

3.22.12.5.3.16. Regarding the amendment that has been drafted so far. It doesn’t address 802.11j which is running in parallel.

3.22.12.5.3.17. Call the question (Donald / Mike)

3.22.12.5.3.17.1. Vote on calling the question: Passes 81:11:13

3.22.12.5.4. Vote on the main motion: Motion fails 40:54:37

3.22.12.6. Move to bring back from the table the motion concerning wave reaffirmation

3.22.12.6.1. Move Jon Rosdahl

3.22.12.6.2. Second John K

3.22.12.6.3. The chair moves to Harry Worstell

3.22.12.6.4. Vote on the motion: Passes 52:15:42

3.22.12.7. Motion on the floor: Believing the PAR & 5 Criteria contained in the document below meet IEEE-SA guidelines, request that this PAR and 5 Criteria contained in IEEE 802.11-03/0943r5 and IEEE 802.11-03/0967r3 and already posted to the ExCom agenda for WG 802 preview and ExCom approval (and subsequent submissions to NesCom) be reaffirmed.

3.22.12.7.1. Moved Lee Armstrong on behalf of WAVE SG

3.22.12.7.2. Discussion

3.22.12.7.2.1. Motion to put back on the table

3.22.12.7.2.2. The chair rules that the motion can be put back on the table after due consideration. It is out of order.

3.22.12.7.2.3. Call the question (Dave B / John K) no objections

3.22.12.7.3. Vote on the main motion: passes 44:19:41

3.22.12.8. The chair returns to Stuart Kerry

3.22.12.8.1. The chair is requested to present this debate to the ExCom today.

3.22.13. Agenda Discussion from the floor

3.22.13.1.1. The WG chair acknowledges that the minutes of the discussion will be summarized.

3.22.13.1.2. Review of remaining items on the agenda

3.22.13.1.2.1. 802.19 presentation will be sent to the 802.11 reflector.

3.22.13.1.2.2. Voting Tokens,

3.22.13.1.2.3. Bonneville presentation - will be sent to reflectors

3.22.13.1.2.4. Secretary’s report – to reflector

3.22.13.1.2.5. Editors Report – moving 802.11g and h to ISO is a motion.

3.22.13.2. Motion that we extend the time of this meeting until the agenda is complete, up to 30 minutes from now.

3.22.13.2.1. Moved Harry Worstell

3.22.13.2.2. Second Carl Stephenson
3.22.13.2.3. Discussion
3.22.13.2.3.1. Do we need a fixed time? The WG chair states that 30 minutes is the maximum.
3.22.13.2.4. Motion approved with Unanimous consent

3.23. New Business

3.23.1. Motions
3.23.1.1. Move to announce teleconferences to be held by {TGm/n/Mesh-SG /WAVE-SG / IETF Ad Hoc} no more than once every two weeks and prior to May 2004 IEEE 802.11 interim session.
3.23.1.1.1. Moved Al Petrick
3.23.1.1.2. Second Harry Worstell
3.23.1.1.3. Motion approved by Unanimous consent
3.23.1.2. At the May 2004 IEEE 802.11 interim meeting: empower (TGe/i/jk/m/n/Mesh-SG/WPP-SG/WAVE-SG/Chair's Ad-Hoc (capwap document review), Fast Roaming SG, WNM-SG, WNG-SC, WIEN-SG, publicity committee) to make motions, and conduct the necessary business under in accordance to the Task Group PARs and Study Group directives.
3.23.1.2.1. Moved Al Petrick
3.23.1.2.2. Second Carl Stephenson
3.23.1.2.3. Motion approved by Unanimous consent
3.23.1.3. Move to authorize teleconferences to be held by TGk no more than once every week and prior to May 2004 IEEE 802.11 interim session.
3.23.1.3.1. Moved Al Petrick
3.23.1.3.2. Second Richard P
3.23.1.3.3. Approved Unanimous consent
3.23.1.4. Motion to modify the previous empowerment motions to stipulate the end of the empowerment is a week after the July 2004 Plenary.
3.23.1.4.1. Moved Carl Stephenson
3.23.1.4.2. Clint
3.23.1.4.3. Approved with Unanimous consent
3.23.1.5. Move to submit 802.11g-2003 and 802.11h-2003 to ISO/IEC for Fast Track approval through the UK national body. Robin Tasker has volunteered to make the submission, and Terry Cole will be the project editor.
3.23.1.5.1. Moved Jon R
3.23.1.5.2. Second Colin
3.23.1.5.3. Approved by Unanimous consent
3.23.1.6. Moved: To approve document 18-04-0011-00-0000_interference-temp-cmts.doc authorizing the Chair of 802.18 to do necessary editorial and formatting changes, seek EC approval as an 802 document, and file the document in a timely fashion with the FCC.
3.23.1.6.1. Moved Carl S
3.23.1.6.2. Second Denis K
3.23.1.6.3. Approved by Unanimous consent
3.23.1.7. Moved: To approve document 18-04-0012-00-0000_cognitive-radio-cmts.doc authorizing the Chair of 802.18 to do necessary editorial and formatting changes, seek EC approval as an 802 document, and file the document in a timely fashion with the FCC.
3.23.1.7.1. Moved Carl S
3.23.1.7.2. Second Denis K
3.23.1.7.3. Approved by Unanimous consent

3.23.2. Ballot Results
Would the body like to see the ballot results in a spreadsheet with names of all voting members with their votes (Yes / No / Abstain)? There would be no contact information.

Straw poll? Almost Unanimous consent – one opposed.

Move that the 802.11 WG instruct the chair to authorize the posting of results per voting member for all letter ballots going forward.

Moved Harry Worstell
Second Bruce Kraemer.

Discussion

You can’t stop having secret ballots.
Believes that this is acceptable with the process
The current process is not secret, since comments on all No votes are by name.
Is there any objection to removing this motion?
None

The WG chair directs vice chair Harry Worstell to implement this directive in the Policies and Procedures.

The WG chair reads the following email from 802 chair Paul Nikolich regarding names in minutes:

From: Paul Nikolich [mailto:paul.nikolich@att.net]
Sent: Thursday, March 04, 2004 15:08
To: IEEE802
Subject: [802SEC] Chair's guideline on recording attendee information in meeting minutes

Dear EC members,

It has been called to my attention that guidelines are needed with respect to the amount of information that is recorded in the minutes of attendees. The below Chair's guideline defines those requirements. I will update the Chair's guideline document to include this new guideline.

Regards,

--Paul Nikolich

Chair's guidelines on Recording Attendee Information in meeting minutes

LMSC meeting minutes are public documents; therefore a minimal amount of attendee information should be contained in minutes in order to provide privacy for attendees. At a minimum the minutes should record an attendee's name. If meeting participants are asked to provide their affiliation as per the ANSI Essential Requirements, then the affiliation information shall be included in the minutes next to the attendee's name. Any other personal information, such as email, telephone, address, etc. should not be included in the minutes.

Do we need to change our procedures and templates to remove company names? The email is specific to meeting minutes.

In disagreement with this. We have no way to contact other members to continue the work of this group.
3.23.4.4. Dave Bagby volunteers to compile a list of members to form a contact list for those who wish to participate.

3.23.4.5. The WG chair notes that the ListServe now allows members to include their telephone number into their name used on the reflector. It is a simple opt-in fix.

3.24. **New Business**

3.24.1. No additional motions

3.25. **WG Motions**

3.25.1. Voter token incorporation in badges

3.25.1.1. Does anyone not like the token printed on the badges? None

3.25.1.2. Move to request ExCom to incorporate the voting tokens on the badges for all future 802.11 interim and plenary session run by IEEE 802

3.25.1.2.1. Moved Harry Worstell

3.25.1.2.2. Second Colin

3.25.1.2.3. Vote: Motion passes 60 : 0 : 0

3.26. **The chair allows statements from the floor.**

3.26.1. Statement – it is a bad precedent to extend meetings. People have flights. We need to have an accurate end time.

3.26.2. The WG chair asks that the TG and SG chairs are more diligent in providing motions before the plenary.

3.26.3. Taking a contrary position – we need to complete our work for the week. 802.16 worked until after 1:00AM last night, but they completed all their work.

3.27. **Next Meeting**

3.27.1. Garden Grove / Irvine California.

3.28. **The meeting adjourns at 12:56PM**
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1. 4:00 pm Monday, March 15, 2004

1.1. Opening

1.1.1. Call to order

1.1.1.1. John Fakatselis (JohnF) called the meeting to order at 4:11pm.

1.2. Agenda

1.2.1. Review of the agenda

1.2.1.1. JohnF showed the tentative meeting agenda, 11-04-0149r0-W-802.11-WG-Tentative-Agenda-March-2004.xls, on the screen and reviewed the proposed agenda:

1.2.1.1.1. Potentially we will be working on comments and attempting to go for Sponsor Ballot. We will likely be occupied discussing comments until the last session.

1.2.1.1.2. Srini Kandala (SriniK): We have only 71 comments, so would it be better to have a floating time rather than a fixed time for the vote at the end?

1.2.1.1.3. JohnF: Srini has the suggestion that we might be done early and that would give us the opportunity to recess earlier. I have no objection on that. There might be a problem to some who have to go to other places, and this gives them a given time for them to participate, so that would take that benefit from those who wait. I’m not biased one way or another. Any other comments on that issue?

1.2.1.1.4. SriniK: Given what you have said, probably we should leave it as a fixed item.

1.2.1.1.5. JohnF: So that’s what we’ll do.

1.2.2. Approval of the agenda

1.2.2.1. JohnF: Are there any other comments on the agenda?

1.2.2.2. JohnF: I ask the voting members, are there any objections to approving this new version of the agenda?

1.2.2.3. JohnF: I see no objections, so the agenda is approved.
1.3. Comment Resolution Discussion

1.3.1. Recirculation vs. Sending this to Sponsor Ballot

1.3.1.1. JohnF: We have had two letter ballots since the last meeting in the full meeting. The last one was LB67. We might go for another letter ballot. So we're going to focus on the comments for the current meeting.

1.4. Reviews of voting rules and process

1.4.1. Process

1.4.1.1. JohnF: Are there any new members present?

1.4.1.2. {Secretary saw five hands.}

1.4.1.3. JohnF reviewed the structure of Robert's Rules and how it pertains to our meetings.

1.4.1.4. JohnF reviewed the general task group voting procedures and willingness for open participation, but noted that motions must be made and voted by voting members.

1.4.1.5. JohnF: Technically only voting members can participate in discussion, but I will make an exception to allow all present to discuss. If you are not a voting member and want to make a motion, make sure you ask a member to make the motion. At times we will allow non-voting members to vote on some of the issues. Any other questions on voting and policies and rules? I hear none, so I am moving to a summary of the last meeting.

1.5. Discussion of Recirculation Ballots

1.5.1. Last Meeting Summary

1.5.1.1. JohnF: Chart 802.11 TGe LB51-59-63-65-67Results 031504.xls shows the progress of votes. Today we have 16 or fewer No votes. And this might change by the end of the week. 23 abstains, and 262 Yes votes, so we currently have 94 percent approval rating.

1.5.1.2. JohnF: What is significant now is how many new No votes there are. This is important because we need to have no new No voters. It happens that there is one new No voter, but we haven't approached that person yet. But there are no new No voters who have technical comments. I also have been told that we have two more individuals who are willing to change their No votes to Yes votes with comments.

1.5.1.3. JohnF: If we do not go to Sponsor ballot now, then we won't have another chance until July. I would like to help this process, so I ask the No voters to work with us. Do we need four months of delay, or can we work out those objections now? Remember that if we go to Sponsor ballot, we still have a common collection of people who will be working to resolve comments. So everyone needs to evaluate whether it is worth waiting another four months. We also have a lot of pressure from WiFi, which will have to move to their own version in the meantime. If you don't know how to get your comments to sponsor ballot, please approach me and I'll help you with that.

1.5.1.4. JohnF: Srini, is there anything in LB67 that I might have overlooked?

1.5.1.5. SriniK: After the end of LB67 we had 15 No votes, and not 16. There were 4 new No commenters with 9 new comments. 6 are repeated comments, and there are 9 new technical comments. Only 4 No commenters had new technical comments.

1.5.1.6. Andrew Estrada (AndrewE): Is this on Draft 7.0?

1.5.1.7. SriniK: 8.0
1.5.2. Minutes of the January 2004 Interim Meeting

1.5.2.1. JohnF: Are there any questions or issues with the minutes of the January 2004 meeting in Vancouver?
1.5.2.2. JohnF: I hear none. So the minutes of January 2004 are approved with unanimous consent.

1.5.3. Minutes of the February 2004 Interim Meeting

1.5.3.1. JohnF: This is document 04/0192. Please review those and see if you have any comments on those minutes. I’ll soon ask whether you have any objection to them. In the meantime is there any objection to moving to the next item? Seeing none, the next item is the Call for Papers. We need to work with the people who are objecting. If we convince these people to change their votes, then we can attempt to go to Sponsor Ballot out of this week’s proceedings.
1.5.3.2. JohnF: Any more questions? Seeing none, I would like to pass this to Srini to summarize the overall comments, the progress from Letter Ballot to Letter Ballot, and technical aspects of the responses. We could attempt Procedure 10 by April 25, but I haven’t seen much success coming out of that yet. Another alternative is to schedule two more Letter Ballots and an Interim meeting. Potentially we could then reject the remaining comments and move forward.
1.5.3.3. SriniK: If we were to invoke Procedure 10 then we would need to have an Interim meeting, a Confirmation Meeting. This is how I got the April 25 date as the earliest possible.

1.5.4. New “No” Voter Contacts

1.5.4.1. JohnF: Srin, could you tell us the folks who we need to approach? We would appreciate any information you have on their concerns.
1.5.4.2. SriniK: The four voters who voted No with Mahalingam Mani, Raji-san, Mathilde Benveniste and Tim Moore. Before the meeting I met with Raji and Tim Moore, and they have agreed to change their votes. Mani and Mathilde work for the same company. I believe Mani is not here.
1.5.4.3. JohnF: I ask for a group of people who are willing to talk to Mathilde and Mani about their concerns. I see Srin and Floyd Simpson. So we have a small committee.
1.5.4.4. Mathilde Benveniste (MathildeB): Mani has asked me to represent him.
1.5.4.5. JohnF: I can’t accept that. That’d give you two votes.
1.5.4.6. MathildeB: I can give you his cell phone number.
1.5.4.7. JohnF: It would also help if you could give us a brief background of his concerns.
1.5.4.8. JohnF: Are there any questions or concerns about how we’re proposing to proceed. So at first we’ll talk here with Mathilde and then Mathilde will help us with the other No voter.
1.5.4.9. JohnF: Are there any papers that someone would like to present.
1.5.4.10. SriniK: In case we don’t go to sponsor ballot, I have 04/255.
1.5.4.11. FloydS: If we don’t go to sponsor, I have a paper.
1.5.4.12. MathildeB: Likewise I have a paper if we don’t go to sponsor ballot.
1.5.4.13. JohnF: I hope it’s good news to all of you that we don’t have anything else to discuss until the 7:30 session. We expect to have a short meeting then, but I hope to give you a status then.
1.6. Closing

1.6.1. Recess for Ad-Hoc Group Work
1.6.1.1. JohnF: Does any one have any other comments on this process? Hearing none, does anyone have an objection to recessing until the 7:30 session? Hearing none, that’s what we’ll do.
1.6.1.2. JohnF recessed the TG at 4:53pm.

2. 7:30 pm Monday, March 15, 2004

2.1. Opening

2.1.1. Call to order
2.1.1.1. JohnF called the meeting to order at 7:35pm.

2.2. ‘No’ Vote Discussion
2.2.1.1. JohnF: I would like a report on the status of the discussions with the No voters.
2.2.1.2. FloydS: I worked with Srinidhi on drafting an email to send to Mathilde and the other No voter who was commenting on Draft 8.0.
2.2.1.3. JohnF: Any phone conversations with other No voter?
2.2.1.4. FloydS: I did speak to him by phone and discussed the possible delays. He said he was open, but needed some more time to think it over.
2.2.1.5. MathildeB: The email that was sent to me was the same as the previous discussion. I had an opportunity to rebut on this. Did you ask him to send me that email?
2.2.1.6. JohnF: Yes. We are always asked before we go to sponsor ballot about what is the final view of the editor on his changes. So I asked Srinidhi to explain the reasoning for his decision on his rationale. I would appreciate it if you could send a brief response back and then I can have some material on your position about this No vote. I asked Srinidhi and Floyd to do the same thing with the other No voter. This is all standard practice to do this, to give everybody the chance to express their opinions.

2.3. Closing

2.3.1. Recess for Ad-Hoc Group Work
2.3.1.1. JohnF: So does everyone else want to know more about what we’re doing now? Ok, is there any objection to recess until 8 am tomorrow to get these emails in? Hearing none, I’ll ask the secretary to note that’s what we’re doing.
2.3.1.2. JohnF recessed the TG at 7:44pm.

3. 8:00 am Tuesday, March 16, 2004

3.1. Opening

3.1.1. Call to order
3.1.1.1. JohnF called the session to order at 8:10 am.
3.2. Procedure Discussion

3.2.1. Contacting ‘No’ Voters

3.2.1.1. JohnF: First a few comments to sync up the people who were not here yesterday. Out of the ballot responses we had 1 new No voter and 4 voters who had new comments with their No votes.

3.2.1.2. JohnF: I just received two more vote change requests – so we now have about 96-97 percent Yes votes. But we need a clean Letter Ballot: no new No voters and no new negative comments on No votes. Yesterday we got 50% of the way there, but we have two more folks to go.

3.2.1.3. JohnF: We have a small team, Srini, Floyd and myself, to contact the two No voters. So far we have not heard back. We have sent them emails asking for replies. We will then document that we have made a best effort to work with the situation. I will wait to see how our discussions go with Mathilde and the remote person, so we will give this up until the lunch session. I will also coordinate with the WG staff to see what we can and should do.

3.2.1.4. JohnF: Every time we have an opening session, please show up. We might need some guidance in a voting activity, to see the direction of the group. We might, for instance, vote to reject all of the comments we received and attempt to go to sponsor ballot. So I can’t overemphasize the importance of being here and representing your interests. Are there any comments or suggestions from the floor? Srini, Floyd do you have anything to add?

3.2.1.5. SriniK: You’ve summarized the situation well.

3.2.1.6. JohnF: About yesterday’s attendance problem: I subsequently talked to the attendance folks and we will be credited with the time for Tutorial 1 for the meeting last night.

3.3. Closing

3.3.1. Recess

3.3.1.1. JohnF: Are there any other comments or concerns? Hearing none, I recess the meeting until the next timeslot.

3.3.1.2. JohnF recessed the meeting at 10:30am.

4. 10:30 am Tuesday, March 16, 2004

4.1. Opening

4.1.1. Call to order

4.1.1.1. JohnF called the meeting to order at 10:35 am.

4.2. Procedure Discussion

4.2.1.1. JohnF: Stuart Kerry is joining us. I have some actions that depend on him and would like him to hear the comments. Mathilde is also in the room. Between the last session and this we have been working with the two members who have new No comments because it would be unwise to proceed with other business until we figure out whether there is a way to settle this. The good news is that we did send an email asking for a conference between the remote (No vote) commenter and myself, and we received a reply that he would be happy to work with me. So, with good conscience we have made a best effort to work with the two No voters. With Stuart’s help I am trying to create an informal meeting about how to move forward.
4.2.1.2. Stuart Kerry (StuartK): Is this just about those two people? And a teleconference with that one remote person?

4.2.1.3. JohnF: Yes, just that one person. Mathilde did offer to represent that person, but I could not accept that, as I did not feel it was the right thing. With Stuart’s guidance I am planning to try to work with that one remote person. I also would like to extend the discussion of our options with other experienced people on the staff level.

4.2.1.4. JohnF: Does anyone have other comments? Also, I don’t see many people here. Please tell your colleagues to show up at the beginning of each session. I am not going to delay the session with the people who are here to avoid others from saying that they didn’t know about it. As long as I have two people, one to make a motion and one to second it, we will be able to move forward. So do tell the interested parties to come to these meetings.

4.3. Closing

4.3.1. Recess

4.3.1.1. JohnF: Is there any objection to recessing until after lunch? Hearing no objection, we are recessed until after lunch.

4.3.1.2. The task group session recessed at 10:44am.

5. 1:30 pm Tuesday, March 16, 2004

5.1. Opening

5.1.1. Call to order

5.1.1.1. JohnF called the session to order at 1:48pm (delayed due to coordination with 802.11 Staff).

5.2. Procedure Review

5.2.1.1. JohnF: We are still attempting to determine whether we can attempt a clean Letter Ballot. So far 3 of the 4 ‘No’ voters have reversed their votes, and we are working now with the 4th. I try to give advice rather than suggestions or guidance to people for them to make up their own ideas. Several of you have approached me and requested ways of moving forward. I am considering those as well. I hope we can move forward in the next session without delay. In my opinion one change in the informative annex was left up to the editor; nevertheless even in an informative annex there is some technical connotations and solutions, if you may. I am advising you to focus on those changes and come up with your own opinion on the nature of those changes. As a minimum straw poll I will request your opinion on that issue so that your opinions can be passed to the Executive Committee. We need to make sure we don’t overlook something, and so I need this time to consult with as many people as I can. So far I have not been able to get to every one I need to talk to. I believe that by the 4:00pm session I will have all the information I need to move to closure. Does anyone have thoughts on these? I would rather that you share those with me in private, because there are a lot of different dimensions with this, and I will include them in the decisions. At 4pm you will be able to communicate your opinions to the group at large. So the 4-6pm session will be critical.

5.2.1.2. Thomas Kuehnel (ThomasK): What are the options?

5.2.1.3. JohnF: I would like to go into details later. But in general, if Mathilde were able to withdraw her new No comment, we would be able to move forward. That’s the fastest way to progress. The second option is to reject all comments and
just reissue the draft in Letter Ballot 67. When that comes back clean, then we could invoke Procedure 10 and could then do something at the next Plenary in 4 months. The third option is to issue Draft 9.0 and send it out for a new Letter Ballot, then have another meeting after that, reject the comments, and then send out the same Draft again for another Letter Ballot, to which the comments are necessarily limited. This option will definitely take the 4 months.

5.2.1.4. MathildeB: Since I have taken so much of your time, I think I need to explain my position to all of you. To get to sponsor ballot as quickly as possible, I have agreed to remove my comments, provided that the current ballot is valid. We just need to determine that the current ballot is valid. This is just as John said.

5.2.1.5. JohnF: That's why I'm trying to find out from the ExecCom whether that is the case. But that's also why we might need to review in a discussion at 4pm. As Mathilde just discussed, it will weigh a lot on her opinion of whether a valid change has been made.

5.3. Closing

5.3.1. Recess for Discussions

5.3.1.1. JohnF: Are there any other issues or comments? Hearing none, we will recess for the time being until our discussion at 4pm.

5.3.1.2. The meeting recessed at 2:04 pm until the 4pm session.

6. 4:00pm Tuesday Afternoon, March 16, 2004

6.1. Opening

6.1.1. Call to order

6.1.1.1. There was a slight delay for coordination (with staff and phone calls), so JohnF announced that the session would be called to order at 4:20 pm.

6.1.1.2. The meeting actually started at 4:15pm. The Secretary thanks Marty Staszack for taking the minutes before 4:20pm.

6.2. Procedure 10 Reports


6.2.1.2. JohnK: There are 4 conditions that we have to meet in order to consider us to move to sponsor ballot:

6.2.1.2.1. Cover letter, procedural

6.2.1.2.2. Confirmation ballot completion. Ballot we have now might be the confirmation ballot.

6.2.1.2.3. After comment resolution, approval percentage is at least 75% and no new disapprove vote. At this point the one new no vote has capitulated and we meet this criterion.

6.2.1.2.4. {JohnK didn’t get to the fourth condition…}

6.2.1.3. Stuart Kerry: We would like two minutes for coordination.

6.2.1.4. JohnF: Is that all right with the group? Hearing no objections, that’s what we will do.

6.2.1.5. {A two minute recess occurred.}

6.2.1.6. JohnF: The question is whether there is any new technical change. If there are no new technical changes, we can move to the Sponsor Ballot. The group
has to determine whether this is a technical or editorial change. So the second possibility is that, then, if the change is editorial, we an decide whether to go to request a Procedure 10 process. If we follow this process, we need to have a 30 day announcement and then can go to Sponsor Ballot – sometime before the end of April. Another possibility is to work on a new draft and then we would go to another recirculation (or two) and could not go to a sponsor ballot until, at the earliest, in the next Plenary in four months.

6.2.1.7. JohnF: So then I would like Mathilde and Srini to take the floor to explain their positions why the comment is a valid technical comment or not. Mathilde, could you explain why the comment is technical or not?

6.2.1.8. StuartK: May I take some time to explain something?
6.2.1.10. StuartK: An editor does spelling, etc. If the content of a sentence is changed, then there is a question whether the change is editorial. Part of the issue here is with something that happened within an interim meeting, so that needs to be taken into account, also.

6.2.1.11. Harry Worstell: Agreed, also please look at what is in the minutes of that meeting.
6.2.1.12. David Hunter (DavidH): Question: Is informative text editorial, or can it be technical?
6.2.1.13. StuartK: IEEE rules are such as all comments are treated equally, are exactly the same whether in informative or technical requirements sections.
6.2.1.14. SriniK: I am glad to hear these points: I ask that that be put in the policies and procedures.
6.2.1.15. StuartK: Agreed. Will direct (this change) to the vice chair.
6.2.1.16. JohnF: This section does not say informative or non-informative sections. In fact it says that as determined by the "Working Group" chair. I will be advising the Working Group chair, but not of my personal opinion, but of the opinion of this group. So we will vote on this.

6.2.1.17. MathildeB: I'd prefer Srini to go first.
6.2.1.18. JohnF: Srini, please show the content of the text that’s being discussed here.
6.2.1.19. SriniK: This is Letter Ballot 67, comment 63, about H.4.1 text being deleted. {Srini read the comment. Then showed this section of Draft 8.0, the marked version showing the deleted text, and read that text.}

6.2.1.20. SriniK: This {text} is not complete: this is a repetition of what is already in clause 11.2. So I did not see any reason to keep this, and that is why I deleted it.
6.2.1.21. StuartK: Is this text repeated in the shall area? There are three issues here: (1) The text that has been removed in the back, is the same as in the shall area; (2) Is it in response to an comment; and (3) Does the editor have the right to remove that text?
6.2.1.22. StuartK: Did you believe that you have the right to remove it?
6.2.1.23. SriniK: Until today I have been told that unless the behavior of the resulting system does not change, then the change is editorial.
6.2.1.24. JohnF: Put in a different way: you responded to somebody’s comment on LB65, was that comment technical or editorial?
6.2.1.25. SriniK: Comment 77 of Letter Ballot 65 is labeled as "editorial". Srini showed the comment on the screen.
6.2.1.26. SriniK: Regarding the third issue, there are several points. There was a specific comment. That comment was called editorial. No one challenged the claim that it was editorial. I could have accepted, declined or modified the commenter’s proposed resolution. I identified errors. I went ahead because I thought adding more text would have not been as good a deleting this text. I believed that I was empowered, as editor, to make this change.
6.2.1.27. MathildeB: The comment that Srini is spending all this time on is not one of the comments that is in dispute. I agree that this comment is editorial.
SriniK: I believe that is the comment number I was given as one of the comments that is in dispute.

Mathilde: The ones that are in dispute are some of the comments after Comment 79.

SriniK: Is it your statement that this [the change on the board] is not a technical change?

MathildeB: I would rather go over the comments that are disputed.

JohnF: I'm trying to figure out whether you were making this change because of an editorial comment.

SriniK: I was responding to this editorial comment (comment 77 shown on the screen).

JohnF: So someone is asking to make an editorial comment here?

SriniK: Those (Interim Meeting) minutes are with respect to document 192.

StuartK: I would like the opinions of the others who were present in the New York Interim meeting. I know that my Working Group vice chair, Harry Worstell, was chairing that meeting. Jennifer, what do you feel about these comment resolutions?

Jennifer Bray (JenniferB): We discussed much in detail. I put in several comments that were listed as technical and they were judged in this meeting as editorial. We adjourned early because we were under the understanding that the remaining changes were editorial. My expectation was that the changes for those comments were going to be more minor than the change we have just now been discussing. What I see in the draft was more than copy-level changes; I see these as technical level changes. They are changing information that is in the document.

StuartK: Are you in favor of leaving that text in there?

JenniferB: By and large I am, but I wouldn't claim to be an expert in this field. I believe that the text has technical content and should be there.

StuartK: And Stephen?

Stephen Chen (StephenC): I didn't look at the minutes, but I do recall one comment being changed from technical to editorial. So I believe that anyone in the meeting should have gone through the changes and disagreed at the time about reclassifying them as editorial (or not).

StuartK: Were you in favor of these changes?

StephenC: I am in favor of the changes that Srini made.

StuartK: Mathilde?

JohnF: With your respect, I would like to control this meeting.

StuartK: I stand corrected. But I do ask that you review the two sides.

JohnF: I would like to review what I think I've heard before I pass the floor to Mathilde. There are 3 questions: (1) technical or editorial? And opinions went both ways; second… {JohnF didn't finish the sentence …}

JenniferB: Clarification question (to Srini). I believe you made one change because you said the text was wrong. Does that change the meaning to make that change?

SriniK: I believe it is editorial to make the text consistent. And I was told that by a senior editor of this Task Group that such changes are editorial.

JohnF: Could you show us the related text?

{Srini showed on the screen Draft 8.09, 11.2.1.5 (g); then section 11.2.1.9, a.}

SriniK: So that section is the topic of a (claimed) editorial comment.

JohnF: So the second question is whether you were authorized to make such a change.

StuartK: Point of clarification: is this the issue that is in dispute?

JohnF: I believe so. Mathilde, can you start your presentation?
6.2.1.56. MathildeB: I don’t want to mistake my attitude toward Srini as not being that he is a very excellent and hard working editor. (But) I want to give you some examples of what I believe are some violations of the editorial prerogative. Stuart, so the answer to your question is “No”, this example is not one that I am disputing.

6.2.1.57. StuartK: Can you show one example that you are disputing?

6.2.1.58. MathildeB: See the changes in section H.4.3. At the beginning of this section two paragraphs were deleted. This is an important technical change. It is a description of how you can integrate several power saving methods. There are several other editorial changes here also; I don’t dispute that those are editorial. This information is specifically to address many requests from other members of TGh on how you can put all of these suggestions together. From reading this informative text you can see how to combine these methods. This is why I wrote this informative text. This is the removal of technical information, so that is why I don’t consider these to be editorial changes. In the New York meeting we (the 8 people there) were purposely trying not to change anything that could possibly raise new No votes.

6.2.1.59. SriniK: My memory is different from that.

6.2.1.60. MathildeB: We adjourned early so the editor could do the changes he had in hand. When Srini finished with his changes he sent to some of the members pre-draft copies. When I received this information I sent him an email that I objected to these changes because I believe they were not editorial. He replied that he believed those were editorial changes. Also that I had implied that these were the only ways these things could be done. I would be happy, with Srini’s permission, to send you these emails. Have I left anything out?

6.2.1.61. GregC: I want to get on the queue for comments.

6.2.1.62. JohnF: I would like to ask for clarifications or comments right now.

6.2.1.63. MathildeB: May I have a straw poll?

6.2.1.64. JohnF: You may certainly ask the group.

6.2.1.65. GregC: What comments are we talking about here?


6.2.1.67. Marty S: Is this straw poll limited to voting members?

6.2.1.68. JohnF: That is up to Mathilde.

6.2.1.69. MathildeB: This straw poll is open to everyone.

6.2.1.70. GregC: I have two questions: Number 1, why is this technical if it changes no “shall”s; Number 2, why is this description fair when it doesn’t include other mechanisms; do you think that this statement belongs in a technical standard or a press release for a product?

6.2.1.71. JohnF: This should be on the technical or editorial content of the changes.

6.2.1.72. MathildeB: This is not editorial content.

6.2.1.73. GregC: I never got a chance to vote on this.

6.2.1.74. MathildeB: Greg has raised technical issues that are well worth debating. I would have liked to discuss these in that extra day (in which we didn’t meet) in New York. I’d like to debate these with Greg. I would like to have a straw poll on one of the sections that are deleted form the text. Stuart would you repeat the definition of what is an editorial change?

6.2.1.75. JohnF: I have done a lot of research on this topic: but have found no direct statement on what is the difference between a technical and an editorial change. You have heard Stuart’s, Srinir’s and Mathilde’s opinions. At the end of the day it is your own opinion.

6.2.1.76. StuartK: Point of information, I believe we have in this group meeting a person who is a voter here and who also has been an editor in this group and in another 802 group.

6.2.1.77. JohnF: Is this with respect to a rule that I missed, or is it just an understanding of what is editorial and what isn’t?
6.2.1.78. Tom Siep (TomS): It is a precedent. The understanding is that, if there is a change that may cause a difference in an implementation, then that is technical. If it stylistic, then that text can be deleted without changing the implementation.

6.2.1.79. JohnK: How can you make a decision about an implementation when this is supposed to a standard that is independent of specific implementations?

6.2.1.80. DavidH: Point of information, can it be technical if it is in an informative section, with no “shall”s?

6.2.1.81. TomS: Yes.

6.2.1.82. GregC: Do you see the term “excellent” in this text?

6.2.1.83. TomS: I would have deleted this word.

6.2.1.84. GregC: What else is in there that tells you how to do that?

6.2.1.85. JohnK: This [the statement shown on the screen as the text that was deleted] is a meaningless statement.

6.2.1.86. TomS: I could be total nonsense, but it is technical. I don’t make a judgment about whether it is meaningful or not.

6.2.1.87. JohnF: Mathilde, is this meaningful?

6.2.1.88. MathildeB: Yes, it is very meaningful and useful.

6.2.1.89. Bob Miller (BobM): This was a pretty detailed mechanism; is this protected by IP or has a related IP statement?

6.2.1.90. MathildeB: Yes, there is an IP statement related to this.

6.2.1.91. StuartK: I confirm that I have received an IP statement form Avaya.

6.2.1.92. MathildeB: Having heard Tom’s statement what technical statements are, would Stuart oblige me and restate.

6.2.1.93. StuartK: An editor can make any changes; no shalls, no musts. It is not necessary for shalls (to be present) to be technical.

6.2.1.94. MathildeB: This is useful technical information that implementers can use to help them. I don’t dispute whether the editor can change syntax. So straw poll: how many here think this deletion of text is an editorial change?

6.2.1.95. GregC: So we vote Yes to say that we believe this is an editorial change?

6.2.1.96. JohnF: Using Mathilde’s definition of editorial?

6.2.1.97. MathildeB: Yes, let’s start that way. Then I’ll ask another straw poll about the other definition. I’ll ask someone who is voting that this is editorial why they are voting that way.

6.2.1.98. SriniK: Point of Order. Who is running the meeting?

6.2.1.99. JohnF: Mathilde has the floor, but cannot yield it on her own. Should I count the hands that are up?

6.2.1.100. MathildeB: Yes. I would like to hear from people who believe this is an editorial change.

6.2.1.101. SriniK: Point of order: I believe I should be allowed to reply to this comment.

6.2.1.102. MathildeB: I agree.

6.2.1.103. JohnF: Ok, Srini you have the floor.

6.2.1.104. SriniK: Tom has given me a new definition than (the one that) Michael Fisher gave me before. Even going with Tom’s definition, I still don’t see this as a technical change. In reading this I did not see anything different that I would do (as an implementer) after reading this text. In looking at the comment I could accept, decline or modify it. The commenter claimed the comment was editorial. I decided that it was editorial and that I couldn’t decline it. Answering the 3 questions: I believe it is editorial; there was a cause for it; and I believe it is editorial (text, so I have the right to remove it).

6.2.1.105. MathildeB: To the secretary: did Srini say “the commenter had a technically valid point”?

6.2.1.106. DavidH: I’m sorry, but I didn’t hear word “technical”.

Minutes of 802.11 Task Group E, March 2004  page 11  David Hunter, Vetronix/Bosch
6.2.1.107. MathildeB: I could write documents on the subject of this paragraph. In fact Srini stated that I was giving one solution a bias over others. So I believe it belongs in an informative section, and that it is technical material in this section. So I believe his change was technical.

6.2.1.108. JohnF: Mathilde, are you yielding?

6.2.1.109. MathildeB: Yes.

6.2.1.110. JohnK: First, with respect to the definition of an editor. I believe Stuart was wrong. Our operating rules define the Task Group's ability to do the job. In addition, using Robert's rules of order we have specifically empowered those actions in this Task Group, and, lastly, the editor was following those rules.

6.2.1.111. StuartK: I ask for a retort, since my name as mentioned. Maybe I disagree with John, I was quoting IEEE rules, but John makes a very valid point. There has been a precedence by this Task Group that these are the actions of the editor. So it is the problem of this Task Group, not the Working Group. So I put it back to the chair of this Task Group of what the responsibility of the editor is.

6.2.1.112. JohnF: I disagree that we make our own rules. It was a Working Group motion to let the editor make some of these changes. Second, it is an editorial comment. Third, we have various opinions here. The only “ruling” by me is to let the commenter classify his comment. We are letting the commenter decide what it is, since we don't have clear guidelines on what an editorial change {really} is. Srini has responded to a comment that the commenter was calling editorial. And there was no objection disputing the nature of this comment in formal meetings. So then the editor has the right to respond to the comment as an editorial comment.

6.2.1.113. StuartK: I appeal the chair's decision. By your own minutes in your own group, TGe has set the precedent to have the editor make such changes.

6.2.1.114. JohnF: I did not make a decision. But I will go by the rules of appeal. The extent of my ruling is that, if the commenter calls the comment "editorial", then the precedent is that the comment is editorial and so can be answered by the editor.

6.2.1.115. StuartK: I don't want a pissing match in this area. You made a ruling about the way the rules are. I will ask as a member to ask the “minuter” {secretary} what the rules show.

6.2.1.116. JohnF: I'll ask for a comment from the other editor, from the other group. Tom, does the other group accept the claims of the commenter about what is editorial?

6.2.1.117. TomS: The first duty of the editorial *team* [emphasis by TomS] is to determine whether each comment is editorial or technical. That is the first part of the comment resolution process.

6.2.1.118. JohnF: Do you have the power to make a decision on your own of what is editorial?

6.2.1.119. TomS: Since you asked “you”, I will answer that about myself: I have never ever made an independent decision. We go point by point; do we do this or not? There has to be unanimity of the team, because that is a subset of the working group.

6.2.1.120. JohnF: It has been {the practice} in this group for the editor to respond on his own to editorial comments, and we don't go over every editorial comment. And we did the same in this case.

6.2.1.121. TomS: We have that in the rules.

6.2.1.122. StuartK: If you find in your TG minutes where this power of the editor is to do this, then you have a solution. Your group can authorize the editor to make such changes, and I believe it has done so.

6.2.1.123. JohnF: You mean the Working Group?

6.2.1.124. StuartK: The editor works for your Task Group.

6.2.1.125. {Someone in the back}: I object strenuously to having people approach the table and also to multiple people standing.
6.2.1.126. JohnF: Agreed. TomS has the floor.

6.2.1.127. TomS: If the Working Group minutes don't state that, I would disagree that the Working Group owns this problem. It is in the Task Group.

6.2.1.128. JohnF: How did we get here? Stuart, what's your point?

6.2.1.129. StuartK: The point is that, if your minutes show that TGe has set this precedent, then it is right for this Task Group to do this. And that is your solution.

6.2.1.130. JohnF: Jennifer has the floor next.

6.2.1.131. JenniferB: Point of information. In that particular meeting [the Interim Task Group meeting in New York] we were reclassifying comments as to whether {they are actually} editorial or technical. We did not go through all the comments. I was given the belief that the others were minor editorial comments. Also a comment on IP rights: if is true that IP is involved, then this has to be technical.

6.2.1.132. GregC: It certainly has been standard practice in this group to reclassify comments, and typically many more comments were called “editorial” than have simple editorial changes in them. If I had taken a close look at this, I would have asked it to be rewritten. If this [material] goes back into the text, then I will change my Yes vote to a No vote. I believe that the technical content of the standard is not changed whether this [the text in dispute] is in there or not.

6.3. Closing

6.3.1. Recess

6.3.1.1. Keith Amann (KeithA): Call for orders of the day.

6.3.1.2. JohnF: We are out of time and will continue after dinner.

6.3.1.3. The session recessed at 6:08 pm until the next session.

7. 7:30pm Tuesday Evening, March 16, 2004

7.1. Opening

7.1.1. Call to order

7.1.1.1. JohnF called the session to order at 7:30 pm.

7.1.1.2. JohnF: Let’s recoup here and review what we need to accomplish tonight. I would like your collective opinion on two questions: most important, is this particular change technical or editorial? We have heard lots of opinions. And there is no definitive answer. And the other question is whether on this particular comment the editor overstepped his authority. I’m taking a queue on this {issue}.

7.1.1.3. DavidH: Is this material found elsewhere in the text?

7.1.1.4. SriniK: The first paragraph is in section 11.2; the second paragraph is not.

7.1.1.5. MathildeB: There are more than two paragraphs. No one said that Srini made no editorial changes. I don’t dispute those. The point is that he made other changes that are not editorial.

7.1.1.6. TomS: I would make two comments. First I would frame the questions differently. It is inappropriate to frame the question without reference to a person. It should be about the office of the editor, not the person who is in question. It would be a very serious mistake (to link this issue to a person and not the office of the editor).

7.1.1.7. JohnF: If you have some ideas, please approach me with a note.
7.1.1.8. TomS: I believe it should be the ballot team who would clarify these issues. If I may ask, where do you stand in these issues? Is the document that was on the screen a comment resolution?

7.1.1.9. JohnF: Yes.

7.1.1.10. TomS: And there is no technical difference? That is the question: are these two documents technically equivalent?

7.1.1.11. JohnF: About this comment, yes. We had a recirculation ballot. In order to consider going to sponsor ballot we should have no new No voters and no new technical No comments.

7.1.1.12. MathildeB: It was in Draft 7.

7.1.1.13. TomS: What I am hearing is that not everyone is happy with the striking of that text.

7.1.1.14. JohnF: Yes, that is what we are voting on. Either these people reject this comment or people might request some changes on Draft 8.0, and, if that’s the case, then we will go through the recirculation as usual, and so will not go through Procedure 10. So it is important to see what we do with this and other comments there are on this draft.

7.1.1.15. TomS: I’ve looked at these sections.

7.1.1.16. StuartK: You stated earlier that you received a statement from a No voter who changed his vote.

7.1.1.17. TomS: Do you have a statement from a comment resolution team that all the comments were considered by the team?

7.1.1.18. JohnF: I don’t know what a comment resolution team is.

7.1.1.19. TomS: That was the team working on those comments.

7.1.1.20. StuartK: That was an authorized and "minuted" Ad Hoc meeting of the TGe.

7.1.1.21. JohnF: Unfortunately I wasn’t there at the time; that was chaired by Harry Worstell.

7.1.1.22. TomS: It is incredibly important that we follow process and procedure. Am I delaying things here?

7.1.1.23. StuartK: I have asked the secretary who was there at the time [Tim Godfrey] to review the minutes.

7.1.1.24. GregC: Before the break I was asking about comment reclassification.

7.1.1.25. JohnF: The question on the floor is whether this is technical or editorial?

7.1.1.26. GregC: Why do we debate this? There should be a record of this and we can see if the comment was accepted by the comment resolution team as editorial or technical. And the spreadsheet will show that. I doubt very much if Srini decided on his own whether it was technical or editorial. Say the group decided that it is editorial, then the revision of the text is the prerogative of the editor. Then we can decide whether there is precedent for that. There are many, many examples of the editor making such changes in the past, long before these Drafts. I believe that the editorial purview is very, very large, from the past practices of this group.

7.1.1.27. JohnF: I want to keep the question on the floor whether this text is editorial or technical. I think Harry has the answer about the minutes.

7.1.1.28. HarryW: In the minutes we resolved the last comment which was comment 23, had a discussion, and the next statement is that the remaining technical comments are resolved, and 18 editorial comments remain.

7.1.1.29. TomS: Did you not finish?

7.1.1.30. HarryW: We did not take them [the comments] in order.

7.1.1.31. Jennifer: I have the spreadsheet {that was used} at the time.

7.1.1.32. JohnF: Go through this Harry, please. He’s answering the question.

7.1.1.33. TomS: I think we need to be careful here.

7.1.1.34. StuartK: Would it be appropriate for the speaker to yield to Harry?

7.1.1.35. John: I don’t want speakers yielding to other members. I’ll be happy to do that.
HarryW: As far as I know, the answer is yes.

TomS: Is this the spreadsheet that was used?

HarryW: Yes. There were a block of 18 comments that were called editorial. The group did not specifically review each one of these.

TomS: Sounds like the group made an error, but there is no process problem.

BobM: First, naively what is an Annex for? Number two, a question about the process that we have been asking for the last four years. I believe that TG e is so complicated that we have always relied on the editor to be the DNA of the group. And that we have depended on Srini to follow in the steps of Michael Fischer. My personal view of an annex is that it is a helpful text and that if they include more detailed instructions, then these belong in the body of the text and not in an annex.

JohnF: With this text in there, would anything on the air interface be different? The answer is No, and so this is informative text. This text does not have shall’s, must’s, must not’s, and therefore it is in Srini’s purview to remove it.

JenniferB: {Showing the text of H.4.2.1 and H.4.2.2 on the screen.} This text does say “it is recommended” and so it may affect an implementation. This is not just grammar. So it may affect an implementation, and so I believe it is technical. You also see some editorial changes here that show better grammar. This is a technical edit, whether right or wrong.

MathildeB: I want to review a bit of the facts of what happened. The question was: did the group agree that those comments were editorial? The group did not go through all the comments. We also were working under the assumption that any changes might cause another No vote. The editor was being very cautious about not making any technical changes that were not specifically approved. I agree with Bob about how good a job the editor has done. This informative text has technical content, even though there were no shalls. It is in an informative section, so there were no shalls. The editor honestly believed, he said so, that the changes he made were editorial, but the moment a member of the reviewing group disagreed, that is the end of story, it should have been brought up again [in the TG e meetings].

FloydS: I speak in favor of the job the editor has done. I have learned over the last two years of participation in this group what this group defines as the job of the editor. I believe you need to make your statement in the meetings and now some want to go back and change what editorial means.

JohnF: I would like to put on the screen the sort of motion that I would entertain. Showing on the screen: "Move that the resolution given in comment # in LB 67 is a valid Technical ‘no comment’; and it shall not be reclassified as an editorial comment.” I am only offering this to focus this discussion.

Ed Reuss (EdR): I would like to make the argument that just because it is in the informative text, it does not make changes in that area editorial. It would be silly to allow all of the text in an appendix to be removed just as an editorial change.

JohnF: I see no one else who wants to talk on this matter, so I’d like to entertain a motion like what we have on the screen. Tom, are you a voting member?

TomS: Yes, and I make the following motion: "Move that the resolution given in comments 63, 64, 65 in Letter Ballot 67 are valid Technical ‘no’ comments and they shall not be reclassified as editorial comments."

JohnF: I ask Mathilde and Srini, are these the correct numbers?

TomS: Actually this {motion} should refer to the redlined document, and that will tie it back.

JohnF: I need to see Mathilde’s comment and have the group reaffirm that this is or is not a technical motion.

StuartK: Before you move this: I heard from Mathilde that this was about one comment, not three.

TomS: I believe we need to know exactly what changes are here before we can bring anything to a vote. Mr. Chairman, where are we in the proceeding?
7.1.1.54. JohnF: I have comments by one commenter who does not want to remove her comments and we just need to take up those comments in this meeting.

7.1.1.55. MathildeB: This has nothing to do with Letter Ballot 67 comments. This is about Letter Ballot 65 comments that were taken to be editorial.

7.1.1.56. TomS: Therefore I withdraw that motion.

7.1.1.57. JohnF: I recognize that.

7.1.1.58. JohnF: What Letter Ballot are we talking about here?


7.1.1.60. TomS: We are trying to determine closure.

7.1.1.61. JohnF: Right now I would just like to ask about Letter Ballot 67, comments 63, 64, 65.

7.1.1.62. TomS: I don’t believe we were talking about those at all.

7.1.1.63. JohnF: What is your motion?

7.1.1.64. TomS: I would suggest a different motion.

7.1.1.65. GregC: Point of order. Does the speaker have voting rights in .11?

7.1.1.66. JohnF: Yes.

7.1.1.67. TomS: I would suggest a motion: Move that we reconsider the comment resolution done in the NY meeting and form a team to consider…

7.1.1.68. GregC: Point of order. The speaker can’t move to reconsider when he wasn’t on the winning side of a vote on this topic.

7.1.1.69. TomS: It is amazing that you people know the Roberts rules so well. I withdraw the term “reconsider”. I don’t think this process is right. I am only up here to try to make it right.

7.1.1.70. JohnF: Point of order. I have Roberts rules here and it has a definition of “reconsider”.

7.1.1.71. TomS: I have withdrawn that term.

7.1.1.72. JohnF: I have new wording here: Move that the March 2004 plenary does not affirm draft 8.0 that was created as a result of the February 2004 meeting in N,Y.

7.1.1.73. TomS: May I have a few minutes?

7.1.1.74. JohnF: Sure.

7.1.1.75. StuartK: Question to the Chair: Would you inform the group what are the consequences of this motion?

7.1.1.76. JohnF: This is about this one comment.

7.1.1.77. StuartK: But that motion [that is on the screen] null and voids the NY meeting.

7.1.1.78. JohnF: This is why Tom is rewriting the motion. To the group, a few minutes of recess then.

7.1.1.79. {Recessed from 8:44pm – 9:16 pm.}

7.1.1.80. JohnF: Tom has crafted two motions, with some advice from several others.

7.1.1.81. TomS: This is just step one of two steps to validate the process.

7.1.1.82. JohnF: I will consider both of these motions as being in order, because this is a plenary meeting and here we can reconsider anything we did. This is important to Letter Ballot 67 because, based on this outcome, Mathilde has stated that she will change her vote on Letter Ballot 67. So I would like a formal motion.

7.1.1.83. StuartK: The first motion says that everything was correct except H.4. This validates everything else in Draft 7. Secondly it says that the editor externally created Draft 8. If that fails, then you can go to Procedure 10 for sponsor ballot. If technical, you still will only be delayed four weeks at most. If editorial, then you’ve given the editor more power than in sponsor ballots, but then you could go directly to Procedure 10. But my advice is to do the four week delay. On these two motions I will not vote.
7.1.1.84. TomS: I move the following: Move that TGe affirms that the resolutions made in the NY meeting are valid with the exception of clause H.4 which was resolved following the meeting.

7.1.1.85. JenniferB: Is this just saying that H.4 is not part of this motion?

7.1.1.86. TomS: Yes.

7.1.1.87. JenniferB: In that case I second the motion.

7.1.1.88. JohnK: I call the question.

7.1.1.89. JohnF: Is there any objection to calling the question? Hearing none, the question is called and we will vote. The motion passes 34:0:7.

7.1.1.90. TomS: I made the second motion: Move that the changes made in Draft 7.0 to create Draft 8.0 on section H.4 are not all of editorial nature but there are some technical changes made that may affect an implementation.

7.1.1.91. JenniferB: I second the motion.

7.1.1.92. JohnF: Is there any discussion? Hearing none, we will vote. This is a technical motion.

7.1.1.93. JohnF: This motion fails with 7:32:6. This means we reaffirmed the NY meeting about Letter Ballot 67. So at this time I would like to ask Mathilde for her comments on this process.

7.1.1.94. MathildeB: As promised before, we had our debate, I got my answer, and so I withdraw these comments.

7.2. Closing

7.2.1. Recess

7.2.1.1. JohnF: Is there any objection to recessing? Hearing none, we are recessed until the next session Thursday morning.

7.2.1.2. The session recessed at 9:31 pm.

8. 8:00 am Wednesday, March 17, 2004

8.1. Opening

8.1.1. Call to Order

8.1.1.1. JohnF called the session to order at 8:08 am.

8.2. Discussion of Procedures

8.2.1.1. JohnF reviewed the activities of last night.

8.2.1.2. JohnF: After the votes last night we are currently at 96-97 percent Yes voters, with only about a dozen No voters. We began this session with one new No voter and four current No voters with new technical comments. As of late last night all five of these were reversed. So there is nothing to stop us from going to Sponsor Ballot without invoking any special procedures, just going directly to Sponsor Ballot. Having said that, I would still like to cover every possible way that we have of getting a sponsor ballot going. The fastest way is to directly ask the ExCom to initiate a sponsor ballot. If there is some problem, then I would like to go with Option 2, which is to invoke Procedure 10, then reject all comments and send the same draft out one more time, so then there can be no new negative comments. Then after that we would not have enough time to go to sponsor ballot until the next Plenary. So, to cover our bases, we need to review the new comments, and then ask the group.
whether we wish to reject all the comments and then attempt to go to Procedure 10 as a backup.

8.2.1.3. JohnK: Can we craft motions in such a way that if we can go to sponsor ballot, we will, but otherwise go to Procedure 10?

8.2.1.4. JohnF: That is how we need to structure our motions. But then the group has to do something very hard: to authorize the chair to take these actions.

8.2.1.5. JohnK: I certainly have no problem with that.

8.2.1.6. JohnF: So that’s why I want to do everything we can to prepare. So I will ask Srini to review the new No comments, and then we can decide whether to reject those comments.

8.2.1.7. SriniK: I have been reading the rules and believe that we do not have to reject all of the comments in order to invoke Procedure 10. Second, we can have another meeting in a month that will review the ballot after the reissue. Third, even if we can’t go to Sponsor Ballot by the May meeting, we can still have ad-hoc meetings after that. I believe right now it might be best to send for recirculation to clean up all of the current comments.

8.2.1.8. JohnF: The Sponsor Ballot will still allow comments and changes. That’s why I want to cover all of the options. So let’s look at the comments, then decide whether to accept or reject them. Overall, I don’t believe we should have to go to invoke Procedure 10. Any more questions? Hearing none, then I would like Srini to go over the new comments that we have received.

8.2.1.9. SriniK: The document is 04/246r0. I have just found three comments in which I am not comfortable with the current resolutions, but believe they can be declined. There are 56 technical and 15 editorial comments. All are listed in 04/255r0.

8.2.2. **Interim Recess**

8.2.2.1. JohnF: I am going to give everyone about 15 minutes to review these comments. Then we will cover the comments by exception – we need you to bring up any that you believe should not be rejected. Is there any objection to recessing for 15 minutes? Hearing none, that’s what we will do.

8.2.2.2. The TG returned at 8:38am.

8.2.3. **Re-opening**

8.2.3.1. The TG returned after recess at 9:04am.

8.2.4. **Procedures**

8.2.4.1. JohnF: It was informally brought up to my attention that we might have overlooked some changes in previous drafts. If people can find some way to mitigate their worries, then we can go on. I am not going to take any action formally until there is a formal request. In the meantime please talk to me about your concerns and we will see if we can work it out.

8.2.4.2. MathildeB: Suppose we overlook something and this goes to Sponsor Ballot and then the details surface. Would that invalidate our work?

8.2.4.3. JohnF: It might. Say that there were minutes that we would do something that it turns out that we didn’t do, then someone can always protest an earlier ballot result for that.

8.2.4.4. MathildeB: Then we could be leaving ourselves open to anyone who wanted to protest.

8.2.4.5. JohnF: I don’t want to speculate. You can always have protests, and it very unpredictable what will happen. But I can tell you that a protest is never overlooked. With that said, does anyone want to ask Srini about the documents that he has submitted? Hearing none, does anyone want to discuss any of the 71 comments that have been submitted?

8.2.4.6. SriniK: Comment 22 about 9.9.3.1.2. We are allowing association response to come back. But in one place we did not update the text. One valid comment
in Letter Ballot 65 was not fulfilled. We have updated most of the text, but not all of the text. Strictly we could decline this comment because that part of the text was not changed.

8.2.4.7. JohnF: Was that text not changed?
8.2.4.8. SriniK: Strictly yes.
8.2.4.9. JohnF: Why not just Yes?
8.2.4.10. SriniK: OK, just yes. So, yes, it can be declined for that reason.
8.2.4.11. JohnF: How many people here are in Sponsor Ballot for 11e? I see 3-4 here. Everyone else, if you have a concern, please contact someone who is in the Sponsor Ballot and ask them to bring up the concern. Nothing is done until the Sponsor Ballot is done. Note that in the initial run all of the comments, such as this one, can be brought up.
8.2.4.12. JohnK: If anyone does have such comments, I am on the Sponsor Ballot committee, and I am more than happy to take them and present them in the meetings.
8.2.4.13. SriniK: On the same subject, you can send your comments to the Working Group chair, and he should submit those comments to the Sponsor Ballot group.
8.2.4.14. JohnF: Again, my thanks to the people who, for the benefit of schedule progress, decided to hold their reservations. Srini, do you have the document done in response to all of the comments?
8.2.4.15. SriniK: I would like to change the resolution to two of the comments, but otherwise it is done.
8.2.4.16. JohnF: Basically this document rejects all of the comments. Srini just wants to change two of the responses from what you have seen. Srini, would you show those comments and responses?
8.2.4.17. SriniK: Comment 22 on 9.9.3.1.2: the commenter wants to add a reassociation response. But, since there was no change in this text, I want to decline the comment.
8.2.4.18. SriniK: Comment 58 on 9.12: if you actually read the text on EDCA, then the draft actually covers this issue. So I'd like to point this out in the response.
8.2.4.19. SriniK: Comment 57 is almost the same: Here I'd like to just refer to the response to Comment 58. What we have in 9.12 covers many situations, not just one. Any questions? Comments on any of these? Hearing none, I will put an update of r1 on the server.
8.2.4.20. JohnF: Is there any objection by any voting members about those changes? Hearing none, just for the purpose of the minutes, I will make an attempt to accept this document. What this means is that we will be rejecting all comments on Letter Ballot 67. Then if this motion passes, we could invoke Procedure 10 and we could go to Sponsor Ballot in a month or so. Otherwise, it means that you are ready to make some of the requested changes.
8.2.4.21. MathildeB: Would you explain again what the options are and the consequences?
8.2.4.22. JohnF: Pending Mathilde’s confirmation of her statement yesterday, then we have no new No comments, and I believe we are clean to go to Sponsor Ballot. But let’s say something happens between now and Friday and someone asks us not to go to Sponsor Ballot, then we have the option of rejecting all of the comments and invoking Procedure 10 in the ExCom meeting. That means sending the same Draft for recirculation. Then we can go to Sponsor Ballot after that recirculation without waiting for the next plenary. That means that we can initiate going to Sponsor Ballot. The vote on that probably won’t close (it takes 45 days) before the next Interim, so we still not actually go to Sponsor Ballot until the next Plenary. But at least it will be set up for that.
8.2.4.23. John Terry (JohnT): How sure are you of going to Sponsor Ballot if you reject all the comments? That came up in TGg. You can forward it to Sponsor Ballot with all of the comments.
8.2.4.24. JohnF: That’s required. It must be forwarded with all of the outstanding comments. For all of you who are worried, please be assured that this group takes the time to cover all of the comments. We achieved 83% Yes votes over a year ago, and still we are covering comments. And Sponsor Ballot gives you another chance again. This time I would like to entertain a motion about the comment resolution.

8.2.4.25. JohnK: I move the following: Move to accept the entries in the “Recommended Disposition” cells in 04/255r1 as the resolutions for the comments received in Letter Ballot 67.

8.2.4.26. JohnF: Is there any clarification needed for this motion? Hearing none, do I hear a second?

8.2.4.27. Bob Miller: Second.

8.2.4.28. JohnF: Is there any discussion? Hearing none, I would like to take a vote. The vote is technical and passes with: 28:0:2. So that’s unanimous, and thank you all very much. Given this outcome, we either will have a Sponsor Ballot immediately, or I will be asking for invoking Procedure 10 the ExCom meeting.

8.2.4.29. Amjad Soomro (AmjadS): Do we need to have a meeting tomorrow morning?

8.2.4.30. JohnF: We have rejected all of the technical comments. I would like to do the same for the editorial comments, and Srini needs some time to set up for that. Also I would like to confer with the 802.11 leadership to see if we have overlooked anything. If we have, I would like to make sure tomorrow that we can cover that. That said, are there any more questions or comments about the procedures?

8.3. Closing

8.3.1. Recess

8.3.1.1. JohnF: Hearing none, is there any objection to recess for the day? Hearing none, we are in recess until tomorrow morning at 8:00am.

8.3.1.2. The meeting recessed at 9:47am.

9. 8:00 am Thursday, March 18, 2004

9.1. Opening

9.1.1. Call to order

9.1.1.1. JohnF called the session to order at 8:12am.

9.2. Procedures

9.2.1.1. JohnF reviewed the activities of the past few days.

9.2.1.2. JohnF: As of today we have Letter Ballot 67 that is ready to go to Sponsor Ballot. We also are trying to cover the case that the Sponsor Ballot process is not approved by being ready to invoke Procedure 10. This involves sending out Draft 8.0 again and going to Sponsor Ballot after the comment return in 30 days. Otherwise we will have a 4 month delay until the next Plenary meeting. If we make even editorial changes, then we would have to have a new Draft, so this would delay going to Sponsor Ballot until at least the next Plenary.

9.2.1.3. JenniferB: Talking to members of the ExCom, some seemed to believe that editorial changes would be allowed.

9.2.1.4. JohnF: I’ve been advised that even editorial changes cause a new draft. I do know that it has been done in the past, so that may be where the people you talked to got the idea. However, I’ve also been advised that it is safest to
make no changes at all and to submit the current version as the draft that is to
go into Sponsor Ballot. Srini, do you have all of the current editorial
comments in a document for our review?

9.2.1.5. Srinik: All of the 15 editorial comments are in document 04/246r2.
9.2.1.6. JohnF: Basically Srinik has rejected all of these comments. I am going to ask the
group to accept these decisions. If any of his rejections are not accepted,
then we will be in the comment resolution process and we won't be able to
request Procedure 10.

9.2.2. Interim Recess
9.2.2.1. JohnF: Now I'd like to ask the group to recess for about 15 minutes to review
these comments. Then we can get back together to vote on them. Is there
any objection to this? Hearing none, that's what we'll do.
9.2.2.2. The session recessed at 8:23am.

9.2.3. Re-opening
9.2.3.1. JohnF reopened the session at 8:48am.

9.2.4. Comment Resolutions
9.2.4.1. JohnF: Srinik, do you have the document ready?
9.2.4.2. Srinik: Yes. The editorial comments are shown in the document on the screen
now. Are there any comments or changes? Any better reasons (to be stated
in the comment resolutions)? Hearing none, I'll make the motion.
9.2.4.3. Srinik: I move to “Accept the entries in the ‘Recommended Disposition’ cells for
comments that are not technical (i.e., the E/T does not have a value of T) in
document 04/0246r2 as the resolutions for the non-technical comments
received in Letter Ballot 67.
9.2.4.4. JohnF: Before there is a second, are there any friendly amendments? Hearing
none, is there a second?
9.2.4.5. BobM: Second.
9.2.4.6. JohnF: Is there any discussion? Hearing none, the question is called and we will
vote. The motion is technical and passes unanimously, 14:0:2.
9.2.4.7. JohnF: It was just pointed out to me that we have not yet approved the minutes
of the New York review. At least one member has reviewed those minutes
and has noted one omission. She is trying to resolve that problem now. Are
there any other concerns or questions? I'm going to give some time to
Jennifer to see if she can resolve that problem, but won't ask for a recess yet.
9.2.4.8. JenniferB: The minutes on the server are correct now. The minutes turned out
to be correct. See document 04/192r0.
9.2.4.9. JohnF: Is there any discussion of those minutes? Hearing none, is there any
objection to accepting those minutes of the New York session? Hearing
none, these minutes are approved by the Task Group unanimously.
9.2.4.10. JohnF: Are there any other issues or comments?
9.2.4.11. JenniferB: There was a document 04/133 discussed in the Vancouver meeting.
Was that document approved in that meeting?
9.2.4.12. JohnF: Do you have the minutes from that meeting? I'd appreciate it if you could
bring them up.
9.2.4.14. DavidH: The minutes for Vancouver show that Slide 7 of 04/0133r2 was
approved.
9.2.4.15. JenniferB: But were those changes made in the draft?
9.2.4.16. DavidH: The minutes can't show that.
9.2.4.17. Srinik: Those changes were put in the draft. The referrer is talking about
comment 149. This comment refers to slide 8. The minutes are in document
04/245. The minutes say slide 7. Consequently these changes [the ones described in slide 7], were not incorporated into the draft.

9.2.4.18. JenniferB: We seem to be in the situation in which we’re damned if we do make even an editorial change or damned if we don’t make this change.

9.2.4.19. SriniK: We have had two recirculations since then and even the commenter has not complained. Yes it was an honest error, but we can follow up with the commenter. Keith is the commenter. Keith, can you comment on this?

9.2.4.20. KeithA: I have had numerous discussions with everybody, including many ExCom chairs, the TG Chair and the WG Chair about this comment. I am willing to wait to approach this in Sponsor Ballot. I have talked to Srini and he believes that the issue is covered elsewhere in the Draft, and I need to review that again. So I would prefer to let this issue stay as it is, and not have it brought up again until Sponsor Ballot.

9.2.4.21. JohnF: There are a number of personal opinions. We’ve heard about the personal opinions of the people who several of us have contacted. Keith made a very reasonable suggestion, but, having said that, this comment, once approved, becomes the property of the group. I hope that the group agrees with Keith’s opinion. If we have protests, I will have to act on this. But, if everybody is comfortable with Keith’s commitment, then we can put this to bed for the time being, unless somebody would like to protest. Are there any other comments or questions about this comment and the current situation with it?

9.2.4.22. JohnF: Hearing none, thank you very much for your cooperation on this one. Anything else?

9.2.4.23. SriniK: We can discuss the packet [to be presented to ExCom].

9.2.4.24. JohnF: That’s good. Let’s discuss that, especially for educational purposes of the group, at the 10:30 meeting.

9.3. Closing

9.3.1. Recess

9.3.1.1. JohnF: Anything else? Hearing nothing else, let’s recess until the 10:30am session.

9.3.1.2. The session recessed at 9:22am.

10. 10:30 am Thursday, March 18, 2004

10.1. Opening

10.1.1. Call to order

10.1.1.1. JohnF called the session to order at 10:32am.

10.2. Procedures

10.2.1.1. JohnF: In this session I would like to vote on the recommendation to move forward the processes both of going out directly to Sponsor Ballot and also the packet to request Procedure 10. Srini, can you describe this packet?

10.2.1.2. SriniK: Document 04/0409r1 is on the server, it will be become r2 due to the comments in this meeting.

10.2.1.3. SriniK described the document. Two typos will be corrected in r2. Two additions will be made for the Procedure 10 packet: when we will do the recirculation for Procedure 10. Document 04/410r0 describes each of the remaining 20 comments, and the recommended changes. This will be part of the sponsor ballot package.
10.2.1.4. MathildeB: What should be reviewed here?

10.2.1.5. SriniK: That you agree with the description of the comment, but not necessarily the recommended disposition.

10.2.1.6. MathildeB: So, if we don’t complain here, are we saying that we accept the recommended dispositions?

10.2.1.7. SriniK: No. You do not have agree with the disposition.

10.2.1.8. JohnF: We just need to submit the final comments themselves.

10.2.1.9. SriniK: They also want to know the group's approach to these comments.

10.2.1.10. JohnF: For Sponsor Ballot, we do not have to resolve these comments.

10.2.1.11. SriniK: "Declined" is also a resolution; that's all I mean by disposition here. Again, I will try before the 1:30 meeting to get it finalized.

10.2.1.12. JohnF: How about putting this version on the server for people to read?

10.2.1.13. SriniK: This document will be on the server right away.

10.2.1.14. JenniferB: This comments are associated with what?

10.2.1.15. SriniK: The outstanding No votes.

10.2.1.16. JenniferB: My comments are not included because I was not a voter at the time the recirculation process started.

10.2.1.17. JohnF: You were at the New York meeting; were your comments taken up there?

10.2.1.18. JenniferB: Yes, but the outstanding ones aren’t mentioned here.

10.2.1.19. SriniK: This is just a list of comments associated with outstanding No votes.

10.2.1.20. JohnF: We are only obligated to cover the comments that are part of the Letter Ballot. The best way for you to take up your outstanding comments is to approach someone who is on the Sponsor Ballot committee to bring them up for you in the Sponsor Ballot process.


10.2.1.22. {Delay while the editor and others worked on the document.}

10.2.1.23. JohnF: Srini, have you submitted the new versions of the documents again on the server?

10.2.1.24. SriniK: Do we need two sets of documents, one for Sponsor Ballot and one for Procedure 10?

10.2.1.25. JohnF: Yes.

10.2.1.26. ???: Do these documents need to be on the server for four hours?

10.2.1.27. JohnF: No, there’s no technical content in them.

10.2.1.28. SriniK: I have now uploaded 04/409r2 and 04/410r2. John, do you want to discuss these separately?

10.2.1.29. JohnF: Just submit all of the copies, and we will give the group some time to review them. Based on your approval, I will present 04/0409 to the ExecCom. Jennifer is on the queue to discuss this document. This should be specifically about editorial comments. Please take 10 minutes to review these most recent versions of the documents.

10.2.1.30. {Delay while the members read the documents.}

10.2.1.31. JohnF: Is there any discussion of the documents? Are there any comments on the packet I will be forwarding to ExCom on Friday afternoon?

10.2.1.32. JenniferB: The LMSC policies and procedures state that members have the right to vote. I have been told that I don’t have the right to vote.

10.2.1.33. JohnF: I have to rule you out of order. You correctly stated the Letter Ballot requirements, but this is a recirculation Letter Ballot. Please look up the recirculation requirements, and also the instructions with each recirculation LB. I best suggestion now is for you to pass your comments to the Sponsor Ballot committee.

10.2.1.34. JohnF: Are you in the Sponsor Ballot committee?
JenniferB: I am not personally in the Sponsor Ballot group, but I can get my comments in there.

JohnF: That is good. The recirculation instructions might be found in another document that you haven't been looking at.

JenniferB: I couldn’t find them in the LMSC rules, and I was under the impression that the LMSC rules take precedence.

JohnF: You can look at the instructions that come with the packet.

JenniferB: But if those conflict with the LMSC rules, then they will be incorrect?

JohnF: So you are challenging the information given in the Letter Ballot instructions?

JenniferB: I do not believe that 802.11 has the right to take away voting rights.

JohnF: I fully agree with that. I will elevate the question of whether recirculation should be open to all Working Group voters to the Working Group leadership. Meanwhile I will suggest we approve everything, but, if there is a violation in that area, we can figure that out this afternoon.

SriniK: For Procedure 10 we need to discuss this at a confirmation meeting.

JohnF: We can do that in the 2:30 meeting. Srin, can you bring up your motions?

SriniK: I move to approve documents 03/409r2 and 03/410r2 along with the Draft 8.0 as the package to be forwarded to ExCom for the purpose of sending the TGe draft to the Sponsor Ballot.

AndrewE: Second.

FloydS: r3 or r2?

SriniK: r2. r3 will be used for Procedure 10.

DavidH: The year is “04”, not “03”.

SriniK: I move to amend to change 03 to 04 in both cases.

AndrewE: Second.

JohnF: Is there any discussion on the motion to amend? Hearing none, is there any objection to accepting this motion to amend unanimously? Hearing none, the motion is now amended.

SriniK: So now the motion is: I move to approve documents 04/409r2 and 04/410r2 along with the Draft 8.0 as the package to be forwarded to ExCom for the purpose of sending the TGe draft to the Sponsor Ballot.

JohnF: Is there any further discussion of this motion? Hearing none, the question is called and we will vote. All voting members who are in favor of this motion, raise your voting tokens. Against? Abstain? This motion passes 9:2:0.

MathildeB: Was this document presented earlier?

SriniK: This is the document I presented earlier today.

MathildeB: I didn’t vote on this.

JohnF: So I’ll take that as a protest of the vote and I will recount the vote. All voters in favor of this motion raise your voting tokens. Against? Abstain? This motion now passes 9:2:2.

SriniK: Can we bring up the next motion after lunch?

JohnF: So you’re not ready with a motion now?

SriniK: I don’t have the motion ready now.

10.3. Closing

10.3.1. Recess

JohnF: So we’ll continue at 1:30pm. Any objection to recessing this session? Hearing none, we are now in recess until 1:30pm.

The session recessed at 12:31pm.
11. 1:30 pm Thursday, March 18, 2004

11.1. Opening

11.1.1. Call to order

JohnF called the session to order at 1:38pm.

11.2. Motions

11.2.1. JohnF: Srini has the floor. Did you have an opportunity to review your document before you forward it for a vote?

SriniK: Yes.

JohnF: Before we continue with the document, I would like to reply to Jennifer’s request. I reviewed the rules and requirements. I haven’t found any violations on this issue in this Task Group. But I have asked Stuart to reply to this request on the Working Group level.

{JohnF summarized the request to Stuart.}

StuartK: The general principles of the Working Group are involved because all of these ballots are actually Working Group ballots. These ballots are all issued under the Sponsor Ballot rules. As well, 802.3, 802.1, etc. have confirmed these rules. As soon as a draft goes out, a SB pool is formed with voting members who vote on that draft document. Any subsequent recirculations use this frozen ballot pool, period. The Chair of the 802.11 Working Group has decided this for the last 15 years in 802 processes. As soon as the TG says the ballot is ready to go, the membership of the WG is deemed to have formed a balloting group. Any recirculations on that ballot use that frozen balloting pool. The previous WG Chair did the same as I am doing today. Does that answer the question?

JenniferB: If Sponsor Ballot rules apply to Letter Ballots I can understand that. I just thought previously that Letter Ballots were not Sponsor Ballots.

StuartK: We operate the same for both ballots.

JenniferB: What does “brief” mean in these rules?

StuartK: The IEEE SA specifies the periods during which a ballot can happen, plus the number of days we have for a Letter Ballot. Basically is this is 40 continuous 24 hour days. Recirculation specifies 15 days times 24 hours each. If you go up to the SA rules you’ll see we are only required to support 30 day Letter Ballots, but we surpass that requirement.

JohnF: I believe that she’s referring to the length of time over which we do the ballots. That is 1-1/2 years after the voter approval passes the 75% threshold.

StuartK: Yes, after it passes 75%, it is a closed pool. We add to at and allow the expansion of the pool if you issue another draft.

HarryW: If it does not receive 75%, then that draft can be dropped altogether, though you can reuse any parts of it that you want. Consequently, you start new again with each of those ballots, so you restart your ballot pool.

StuartK: At the point you obtain 75%, you could shut the ballot pool. The moment a ballot reaches 75% I close the pool immediately. In 11j we have had a similar situation. The problem is that, if you don’t close the pool, you...
never ever get consensus. I hope this answers Jennifer's questions. That said, I am on the Sponsor Ballot group, and I have declared that I will forward your comments to the Sponsor Ballot group.

11.2.1.14. JohnF: I believe that further discussion in this TG isn't needed.

11.2.1.15. StuartK: Point of information, can we ask Jennifer if that satisfies her question?


11.2.1.18. JohnF: So, to everyone else, please submit your comments through one of the members of the Sponsor Ballot pool. If you can't find one, please contact me and I will help you participate. That said, I want to move quickly before special orders happen. Srin, are you ready?

11.2.1.19. SrinK: This version of the motion is not on the server yet. {Srin read Slide 8 of document 04/409r3.} I request the chair to provide me the information so that I can fill in the blanks.

11.2.1.20. JohnF: Before we do that, we need to approve the documents, right?

11.2.1.21. SrinK: I would like to get this approved, then save it as 409r3 and put it on the server. This information has to be included when it is given to the ExCom. My suggestion for the Confirmation Meeting is April 19.

11.2.1.22. JohnF: Then put that in the motion. Could you show Procedure 10?

11.2.1.23. SrinK: Ok. I see we only need the date. I am saving r4 plus this slide as r3.

11.2.1.24. SrinK: I move to approve documents 04/409r3 and 04/410r3 along with the draft 8.0 as the package to be forwarded to ExCom for the purpose of sending the TGe draft to the Sponsor Ballot using Procedure 10 in LMSC, Policies and Procedures.

11.2.1.25. JohnK: Is this a procedural motion?

11.2.1.26. JohnF: Yes. Are there any other changes needed before we have a second?

11.2.1.27. JohnK: Second.

11.2.1.28. JohnF: Is there any more discussion of this motion? Hearing none the question is called, we will vote. The vote is procedural and passes 14:1:0.

11.2.1.29. JohnF: We need to decide on a place for the April 19 meeting.

11.2.1.30. SrinK: I can offer the services of Sharp in Camus, Washington, only about 10 miles from the airports.

11.2.1.31. JohnK: Any you won't get snowed in or tornadoed in.

11.2.1.32. JohnF: Any other offers?

11.2.1.33. Andrew Myles: What is the quorum for this meeting?

11.2.1.34. JohnF: If anyone challenges the results of the meeting, then the business can be reaffirmed at the next Working Group meeting. You really only need one person to make a motion and another to second it. That's my interpretation of the rules.

11.2.1.35. DavidH: Mathilde asked about having another vote to fall back on Draft 7.0 if there is a problem with invoking Procedure 10 with Draft 8.0.

11.2.1.36. JohnF: I do not have the right to invalidate a Letter Ballot. Draft 8.0 is the recirculation vehicle we have voted on. If we go to recirculation, that is what we will recirculate.

11.2.1.37. JohnF: Are there any other questions? Hearing none we will wait for the 2:30pm fixed orders items.

11.2.1.38. {10 minute delay}

11.2.1.39. JohnF: It is now 2:30pm, the time for our fixed orders. We have no new draft presentation to make, because we have already discussed Draft 8.0 So now we need to discuss what we do now. Here is the first official motion that we need. "Motion to forward TGe Draft 8.0 of IEEE802.11e and the supporting TGe letter Ballots history data in documents 04/0409r2 and 04/0410r10 to request initiating the "802 Sponsor Letter Ballot" for IEEE802.11e."

11.2.1.40. JohnK: To whom are we submitting this?
11.2.1.41. JohnF: To the Working Group.

11.2.1.42. AmjadS: Point of information: should it (the wording) be to authorize the chair to make this motion on behalf of the Task Group?

11.2.1.43. JohnF: I will present this motion tomorrow to the Working Group as a Working Group motion.

11.2.1.44. AmjadS: In the past we said “Authorize the TG Chair”.

11.2.1.45. JohnF: I can add that.

11.2.1.46. SriniK: I move to authorize the TGe chair to bring the following motion to the WG plenary meeting: Motion: To forward to the IEEE LMSC the TGe Draft 8.0 of IEEE802.11e and the supporting TGe letter Ballots history data in documents 04/0409r2 and 04/0410r10 to request initiating the “802 Sponsor Letter Ballot” for IEEE802.11e.”

11.2.1.47. Tim Godfrey (TimG): I just review what TGi used in November (in the TGi minutes): they didn’t not include the “Authorize the TGe chair to” part.

11.2.1.48. JohnF: I will just take the actual motion to the Working Group.

11.2.1.49. TimG: It should work either way.


11.2.1.51. JohnF: Any further questions or comments? Hearing none, the question is called and we will vote. All voting members who are in favor of this motion, hold up your voting tokens? Against? Abstain? The motion passes unanimously with 18:0:1.

11.2.1.52. JohnF: Now the second motion.

11.2.1.53. JohnK: I move to authorize the TGe chair to bring the following motion to the WG plenary meeting: Motion: To instruct the WG chair to invoke Procedure 10 of the LMSC Policies and Procedures in initiating the “802 Sponsor Letter Ballot” for IEEE802.11e in the event that EXCOM votes against immediate submittal to sponsor Letter Ballot of TGe Draft 8.0 during their Friday March 19, 2004 meeting. In this case the chair is authorized to submit document 04/409r3 and 04/410r3 as the supporting documentation for the request.

11.2.1.54. AndrewE: Second

11.2.1.55. JohnF: Any further discussion? Hearing none, the question is called and we will vote. This motion also passes unanimously with 20:0:3.

11.2.1.56. JohnF: I believe that these are the only things we have to pass. So I will make the announcement: If EXCOM invokes Procedure 10 for the 802.11e Sponsor Ballot process, a meeting will be held in the Camas, Washington the week of April 19, 2004. This interim meeting is authorized to confirm the results of WG TGe Letter Ballot per Procedure 10 of the LMSC Policies and Procedures.

11.2.1.57. JohnK: I move that, If EXCOM invokes Procedure 10 for the 802.11e Sponsor Ballot process, a meeting will be held in the Camas, Washington the week of April 19, 2004. This interim meeting is authorized to confirm the results of WG TGe Letter Ballot per Procedure 10 of the LMSC Policies and Procedures.

11.2.1.58. JohnK: If we are really unlucky, should we add a clause about earlier drafts?

11.2.1.59. JohnF: I believe that we shouldn’t confuse them with too many options.

11.2.1.60. MathildeB: If we are unlucky, then shouldn’t we be authorized to do other things?

11.2.1.61. JohnF: Any further discussion on this? Hearing none, is there a second?


11.2.1.63. JohnF: Any discussion on this motion? Hearing none, the question is called and we will vote. The motion passes unanimously with 16:0:1.

11.2.1.64. MathildeB: Can we do the same as the last motion and authorize ourselves to do work?

11.2.1.65. JohnK: But we would be re-circulating Draft 8.0 twice, so no one can make more comments.
11.2.1.66. MathildeB: If we were forced back to Draft 7.0, then we could do comment resolutions.

11.2.1.67. JohnF: I believe that, if I have two motions on this {topic}, I believe that will confuse the issue.

11.2.1.68. MathildeB: Then I move to reconsider.

11.2.1.69. SriniK: Second.

11.2.1.70. JohnF: Is there any further discussion? Hearing none, is there any objection to reconsider? Hearing none, then the motion to reconsider is passed unanimously and we will reconsider.

11.2.1.71. JohnK: I move that, if EXCOM invokes Procedure 10 for the 802.11e Sponsor Ballot process, a meeting will be held in the Camas, Washington the week of April 19, 2004. This interim meeting is authorized to confirm the results of WG TGe Letter Ballot per Procedure 10 of the LMSC Policies and Procedures or proceed with comment resolutions.

11.2.1.72. AndrewE: Second.

11.2.1.73. JohnF: Any discussion? Hearing none, is there any objection to taking a vote? Hearing none, the question is called and we will vote. The motion passes unanimously with 15:0:1.

11.2.1.74. JohnK: I think the group should recognize Srini Kandala for all of the excellent work he did as editor and thank him for his effort.

11.2.1.75. {Much applause.}

11.2.1.76. JohnF: Thank you very much John.

11.2.2. Close

11.2.2.1. JohnF: Is there any objection to adjourn, not recess, but adjourn for this session? Hearing none, then we are adjourned.

11.2.2.2. The TGe March 2004 meeting adjourned at 3:06pm.
Abstract

Minutes of the 802.11 Task Group I meetings held during the 802.11 WLAN Working Group Plenary Session in Orlando, Florida from January 15th – 19th, 2004.
Monday, March 15, 2004

4:00pm

Call to Order & Agreement on Agenda
Meeting called to order on Monday, March 15, 2004 at 4:07 pm by Chair Dave Halasz.
Chair: Dave Halasz
Secretary: Frank Ciotti

Agenda discussion - Proposed Agenda:

- Approve Agenda
- Approve Meeting minutes from Vancouver and Austin
- Review IP policy & Letters received
- Chairs status
- Sponsor Ballot results
- Submissions & Motions for SB resolution
  - 04/291 Dave Halasz
  - Jesse Walker – Editing instructions are wrong
  - Tim Moore – Secure Bit - obsolete text (Tuesday)
  - Dave Nelson – Use of 802.1X to provision WEP keys (later in week)
- Ad-hoc to resolve comments, return for motions
- Prepare for next meeting

Chair: Any Objection to approving the agenda?
None
Agenda Approved

Meeting minutes approval
Chair: Any objection to approving the Meeting Minutes from Vancouver doc 04/0081 and Austin doc 04/208?
None

Minutes Approved

Review IP Policy
Two slides requested by WG chair “IEEE-SA Standards Board Bylaws on Patents in Standards” and “Inappropriate Topics for IEEE WG Meetings” were shown and read by Chair.
Any objections regarding IP Policy are to be made to either the WG or TG chairs.

Chair: Does anybody have a patent they wish to disclose?
No.

Chair’s Status
Chair: In November we went to SB. We had a follow-up meeting in Austin to get a SB re-circulation. We went to SB re-circulation which closed on March 12, 2004. There were 163 voters in the pool with 122 affirmative votes and 11 negative votes - 91% affirmative. There were 133 comments. Doc 04/0273 contains the comments on the re-circulation.

Comment: were there any new NO votes?
Chair: no

It would be great if we could get a re-circ at the end of this mtg. If we want to make June, we have to get on the agenda at the end of this meeting via rule 10. FYI, both TGe and TGj tried procedure 10 and failed – taken off the agenda – because they did not have the proper package together and were ruled out of order. This is not a rubber-stamp process. It would be good to show-up to the ExComm mtg on Friday afternoon to show your support.

Comment: what was the last TG to successfully use Procedure 10?
Comment: I believe it was TGg.

Comment: Do we have what we need for Procedure 10?
Chair: Since we don’t have the actual draft to hand to RevComm, Procedure 10 allows a package to be prepared to state what is required for the draft.

Chair: for addressing comments, our biggest time slot is tomorrow. We should be prepared to make a large effort on Tuesday to address as many of the comments as possible in sub-groups.

Comment: what about the dependency on 802.1X Rev?
Chair: I spoke with Tony Jeffries about this. He pointed out that the rules do allow a reference to a draft, but there are rules that apply.

Comment: Do we have any dependency on 802.1af?
Comment: no

Chair: the goal of this mtg is to get a re-circ out. We have an April mtg, and decide if a compelling reason exists for new version of the draft. If we decide to make no changes, we reject the comments and re-circulate the comments and the draft without changes. With no changes to the draft, there can be no new comments. If we decide in the April meeting that a new draft is required, we would re-circ in May without changes. We want to be done ahead of time for the June RevComm meeting.

Submission: Dave Halasz – OUI and Ethernet Type - doc 04/291r0
This replaces the place holder for the OUI and Ethertype with the values assigned.

Motion by Tim Moore:

Instruct the editor to incorporate the changes specified in document in 04/291r0 into the TGi draft

Second: Clint Chaplin

Discussion:
None

Vote: 28-0-1 Passes
Submission: Jesse Walker – doc 04/

The editing instruction for Clause 7.2.2, 7.3.1.4 and Table 20 need to be made clearer. Also change Informative Note style.

The editing instructions for 7.2.2 are in error. We only want to alter the paragraph after the lettered list, not replace all the text in 7.2.2.

Motion by Jesse Walker

Change the editing instructions for clause 7.2.2 to read "delete the first paragraph after the lettered list in Clause 7.2.2 and insert the following in its place:"

Change the editing instructions for 7.3.1.4 to read to change the first two paragraphs after "Table 17" as indicated

Change the editing instructions for Table 20 to delete last row and replace it with 3 rows:

| Reserved   | 32-47 |
| RSN Information Element 48 |
| Reserved   | 49-255 |

Change "Informative Note" to "NOTE (informative)" throughout.

Second: Dorothy Stanley

Discussion:

None

Any objection?

None

Motion Passes

Chair: Review of the SB comments by clause number.

SB Comment Sub-groups:

<table>
<thead>
<tr>
<th>Sub-group lead(s)</th>
<th>Clause(s)</th>
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</thead>
<tbody>
<tr>
<td>Dave Halasz, Frank Ciotti</td>
<td>2, 3, 4, 7</td>
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<td>Jesse Walker</td>
<td>5, 6</td>
</tr>
<tr>
<td>Dave Nelson</td>
<td>8.1, 8.2, 8.3</td>
</tr>
<tr>
<td>Dorothy Stanley</td>
<td>8.4, 8.5</td>
</tr>
</tbody>
</table>
Chair: I suggest we break into sub-groups and then meet after dinner to see if there are any motions.
Chair: Any objection to breaking into sub-groups and working in an ad-hoc until 8:00pm tonight?
None

<In ad-hoc sub-groups>

8:00pm
Chair: Seeing that there are no motions at this time, we shall continue to work in the ad-hoc sub-groups until 8:00am tomorrow.

**Tuesday March 16, 2004**

8:00am

Chair: are there motions ready this morning?
Tim Moore has a motion ready on the comments he was working on.

**Submission: Tim Moore – doc 04/0325r0 – Clause 8.7, 11 and Annex D**

Addresses Comments: 89, 15, 96, 73, 74, 91, 92, 93, 94, 95

**Motion by Tim Moore**

Instruct the editor to incorporate the changes specified in document in 04/325r0 into the TGi draft deleting the MIB variables dot11RSNAStatsCCMPEformatErrors and dot11RSNAStatsTKIPFormatErrors.

Second: Mike Moreton

Discussion:
None

Any Objection?
None

**Motion Passes**

**Submission: Jesse Walker – doc 04/323r0 - Clauses 5 and 6 Comment Resolution for 802.11i Recirculation 1**
Motion by Jesse Walker

Instruct the editor to incorporate the changes specified in document in 04/323r0 into the TGi draft with the following changes:

- Change the instruction for Comment 28 to remove the redundant “Note that”
- Remove the instruction for Comment 110
- Remove the instruction for Comment 111

Second: Doroth Stanley

Discussion:
None

Any objection?
None

Motion Passes

Chair: Any objection to breaking into sub-groups and working in ad-hoc until after the lunch break?
None

<in ad-hoc>

<resume: 1:30pm>

Motion by Dan Harkins

Reject Sponsor Ballot Recirculation Comment 5 from Spreadsheet.

Second: Tim Moore

Discussion:
Dan: For - In Clause 8.1.4 TGi indicates the EAP types that are suitable. Even without PMKIDs, dictionary attacks are possible. We suggest methods for providing cryptographic quality entropy for PSKs. We already voted this down.

Comment: For – I don’t like the PMKID we have, but this argument does not have merit as one could use the same attack against the 4-way handshake.

Vote: 19-0-2 Passes

Presentation of 04/329 by Frank Ciotti
Motion by Frank Ciotti

Instruct the editor to incorporate the changes in document 04/329 r1 excluding the following comments:

- Comment 24

Second: Dorothy Stanley

Discussion: none
Objection: none, motion passes

<chair handed to Dorothy Stanley>

Submission: Tim Moore – doc 04/326r1 -

Motion by Tim Moore

Instruct the editor to incorporate the changes specified in document in 04/326r1 into the TGi draft.

Second: Clint Chaplin

Discussion:
None

Any objection?
None

Motion Passes

< chair handed back to Dave Halasz>

Submission: Tim Moore – doc 04/340r2 -

Comment: A definition for Key Data Encapsulation is needed in Clause 3.

Motion by Tim Moore

Instruct the editor to incorporate the changes specified in document in 04/340r2 into the TGi draft with the following change:

- Change the text of the instruction to comment 88 to “(including any padding or expansion by the AES key wrap)”

Second: Jesse Walker

Discussion:
None

Any objection?
None

Motion Passes

Chair: Any objection to a 5 minute recess?
None

Submission: Dorothy Stanley – doc 04/332r4

Motion by Dorothy Stanley

_Instruct the editor to incorporate the changes specified in document in 04/332r4 into the TGi draft with the following changes:_

- Do not include the instruction for Comment 118
- Do not include the instruction for Comment 102 parts 1, 2
- In Comment 67 instruction, change “IEEE 802.1X” to “IEEE 802.11 SME”

Second: Fred Haisch

Discussion:
None

Any objection?
None

Motion passes

Submission: Jesse Walker – doc 04/323r1 -

Jesse: this is to address comments 110 & 111 which were deferred in the earlier motion.

Motion by Jesse Walker

_Instruct the editor to adopt the resolutions for Comments 110 and 111 specified in document 04/323r1._

Second: Thomas Maufer

Discussion:
Any objection?
None

Motion passes

Chair: Any objection to working in sub-groups ad-hoc until 7:30pm?
None

<ad hoc>
<resume: 7:30pm>

Submission: Dave Nelson – doc 04/321r0 – TGi SB Recirc 1 Comment res Claused 8 thru 8.3

Straw Poll by Dave Nelson

The first informative note in Clause 8.3.2.2 should be removed.

Result: 10-1-0

Motion by Dave Nelson

Instruct the editor to incorporate the changes specified in document in 04/321r0 into the TGi draft with the following changes:

- For Comments 101, 76, remove the PDF line numbers from the end of the lines.
- For Comments 42, 53 and 116, change the editing instruction to remove the first informative note in Clause 8.3.2.2

Second: Andrew Khieu

Discussion:
None

Any objection?
None

Motion Passes

Submission: Dave Halasz – doc 04/339r1 – STA Wording

Motion by Frank Ciotti
Instruct the editor to incorporate the changes specified in document in 04/339r1 into the TGi draft.

Second: Clint Chaplin

Discussion:
None

No objection – motion passes

Chair: are there any further motions?
None

SB Comment Sub-groups revisions

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</tr>
<tr>
<td>Tim Moore</td>
<td>8.5, 8.7, 11, Annex D</td>
</tr>
</tbody>
</table>

Comment: We should process the General comments now as a group.

Motion by Frank Ciotti

On page ii, instruct the editor to change the following line from draft 8.0:

At the time the draft of this amendment was sent to sponsor ballot, the Task Group I officers where:

To:

At the time the draft of this amendment was sent to sponsor ballot, the Task Group I officers were:

Second: Clint Chaplin

Discussion:
None

No objections – motion passes

Discussion on Comment 124

Comment: The comment should be rejected. Statements of this type are outside our PAR and are better handled by regulatory task groups or bodies.
Discussion on Comment 128

Comment: This group chose to use 802.1X, thus the use of control or management frames is not an option. Class 1 data frames are only valid in an IBSS, and it is beyond our PAR to change this.

A new sub-group will be formed to address this comment.

Comment 132

Comment 4

Work in ad-hoc for 10 minutes while the Chair updates the SB Comment spreadsheet.

Resume

Spreadsheet summary: 33 comments remaining as of this time.

Chair: we need a plan to address the comments from the previous Sponsor Ballot that did not vote on the re-circ.

Comment: Email them with the recommended action.

Chair: If we plan to freeze the draft by the end of the week, we to get these resolved.

Chair: Documents 04/340r4 has changes to the state machine. Document 04/336 has the clause 7 changes.

Recessed at 9:39pm

Wednesday, March 17, 2004

1:30pm

Submissions:

04/336 – Frank Ciotti - Clause 7 changes

04/340r6 – Tim Moore

Submission: Frank Ciotti – doc 04/336r0 – TGi SB Clause 7 Motions

Motion by Frank Ciotti

Instruct the editor to incorporate the changes specified in document in 04/336r0 into the TGi draft with the following exceptions,

- Disregard missing suggestion for Comment 10
- For comment 115 resolution, change GTK, IBSS to GTK, ESS.
- For comment 68 change the highlighted “may” to a “will”

Second: Jon Edney

Discussion:

None
No objection – motion passes

Submission: Tim Moore – doc 04/340r6 – Clause 8.5 Edits

Motion by Tim Moore

_Instruct the editor to incorporate the changes for Comments 7, 86, 66, and 58 specified in document 04/340r6 into the TGi draft with the following exceptions._

- Change the instruction for Comment 58 from “the Group and the Pairwise cipher are not” to “neither the Group nor the Pairwise cipher are”
- Change the instruction for Comment 7 from “Kay” to “Key”

Second: Dorothy Stanley

Discussion:
Comment: is the editing instruction for the figure clear for Comment 66?
Comment: Editor: yes
Comment: Editor: When submitting figures, please submit them in their original Visio file as they render better from Visio.

No objection – motion passes

Submission: Tim Moore – doc 04/350r0 – Annex H Edits

Motion by Tim Moore

_Instruct the editor to incorporate the changes specified in document 04/350r0 into the TGi draft._

Second: Henry Ptasinski

Discussion:
None

No objection – motion passes

SB Comments summary
15 comments remaining

Are there more motions for Comment resolution?
No
Comment: We should review Terry Cole’s comments at this time.
Chair: any objection to reviewing Terry Cole’s comments?
Comment: are they in addition to these?
Chair: yes, but they would be helpful.
Comment: Do we have enough time to get a new draft out?
Editor: I may be able to finish by Friday. I am struggling with the diagrams.

Presentation: Jesse Walker - Terry Cole’s comments
J: These are primarily editorial.

Chair: We need to discuss the addressing of Dave Bagby’s comments.

Any objection to working in ad-hoc until 4:00pm?
None

<ad hoc>
resume at 4:00pm

Discussion on resolution of Comment 128
Chair: Any objection to rejecting Comment 128 with the reason given in doc 04/273?
none

Discussion on resolution of Comment 129 for Annex C SDL.
Comment: None of the other Task Groups have updated the SDL. We have no volunteers to update the SDL.
Comment: Formal language description is considered intellectual property and vendors are unwilling to contribute it to the standard.

Chair: Any objection to rejecting Comment 129 with the reason given in doc 04/273?
none

Discussion on resolution of Comment 130
Chair: Any objection to rejecting Comment 130 with the reason given in doc 04/273?
none

Discussion on resolution of Comment 131
Comment: There are still embargo countries to where cryptographic modules cannot be exported.
Comment: We should not view the exportability from a US perspective only.

Chair: Any objection to rejecting Comment 131 with the reason given in doc 04/273?
none

Discussion on resolution of Comment 5
Added text for reason for rejection previously voted on.

Discussion on resolution of Comment 6
Chair: Any objection to rejecting Comment 6 with the same reason given in the previous SB resolution?
none

Motion by Frank Ciotti
Change the following text in 8.5.6:
“When a second STA associates, the Group Key state machine is already initialized, and a GTK is already available and in use. The PTK Group Key state machine is immediately triggered from the PTKINITDONE state and sends the current GTK to the new STA.”
To:
“When a second STA associates, the Group Key state machine is already initialized, and a GTK is already available and in use.”

Change text in 7.3.2.9.3:
“The meaning of the Number of PTKSA Replay Counters is defined in Table 4.”
To:
“The meaning of the Number of PTKSA Replay Counters is defined in Table 4. The number of Replay Counters per STAKeySA is the same as the number of Replay Counters per PTKSA.”

Change Table 4 to:

<table>
<thead>
<tr>
<th>Replay Counter value</th>
<th>Meaning</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>1 replay counter per PTKSA/STAKeySA/GTKSA</td>
</tr>
<tr>
<td>1</td>
<td>2 replay counter per PTKSA/STAKeySA/GTKSA</td>
</tr>
<tr>
<td>2</td>
<td>4 replay counter per PTKSA/STAKeySA/GTKSA</td>
</tr>
<tr>
<td>3</td>
<td>16 replay counter per PTKSA/STAKeySA/GTKSA</td>
</tr>
</tbody>
</table>

Second: Clint Chaplin
Discussion:
None

No objection – motion passes

Submission: Dorothy Stanley – doc 04/0332r1 –
Comment: Are the AAA key and MSK the same when used within this document?
Comment: This is currently under discussion in the EAP WG.

Motion by Dorothy Stanley

Instruct the editor to incorporate the changes for Comments 118, 102, 82, and 83 specified in document 04/332r1 into the TGi draft with the following changes:

- In Comment 102, add the word “to:” to the editor’s instructions above the new paragraph
- In Comment 83, change:

  When the GTK is used to encrypt unicast traffic, when the selected ciphersuite is Use Group Key, the GTKSA is bi-directional.

  To:

  When the GTK is used to encrypt unicast traffic (the selected ciphersuite is Use Group Key), the GTKSA is bi-directional.

Second: Fred Haisch

Discussion:
None

No objection – motion passes

Motion by Frank Ciotti

Instruct the editor to incorporate the changes specified in document 04/391r0 into the TGi draft.

Second: Dorothy Stanley

Discussion:
None

No objection – motion passes

SB Comment Spreadsheet summary
There are 3 outstanding Comments from the previous SB (no voters)
Chair: Work in ad-hoc for 20 minutes while we review these 3 comments.

Chair: There were 14 comments from the first Sponsor Ballot from Michael Fischer that were missing from the original Comment spreadsheet (04/1004). These comments need to be carried over to the new spreadsheet and addressed.

Recessed until 8:00am tomorrow (Thursday)

**Thursday, March 18, 2004**

8:00am

**Motion by Frank Ciotti**

**Comment 140 – Accept**

*In Clause 5.9.3.2, replace:*

Since in an IBSS there are two 4-Way Handshakes between any two STA Supplicants and Authenticators, the Pairwise key used between any two STAs is from the 4-Way Handshake initiated by the STA Authenticator with the higher MAC address.

*With:*

Since in an IBSS there are two 4-Way Handshakes between any two STA Supplicants and Authenticators, the Pairwise key used between any two STAs is from the 4-Way Handshake initiated by the STA Authenticator with the higher MAC address (see Clause 8.5.1 for MAC address comparison).

Second: Nancy Cam-Winget

Discussion:
None

No objection – motion passes

**Motion by Frank Ciotti**

**Comment 141 - Accept**

*In Clause 7.2.2, replace:*

The frame body consists of the MSDU or a fragment thereof, and a security header and trailer (if and only if the Protected Frame subfield in the frame control field is set to 1). The frame body is null (0 octets in length) in data frames of Subtype Null function (no data), CF-Ack (no data), CF-Poll (no data), and CF-Ack+CF-Poll (no...
data). These frame types shall be checked to verify that the frame body is null, and, if not discard the frame without indication to LLC.

**With:**

The frame body consists of the MSDU or a fragment thereof, and a security header and trailer (if and only if the Protected Frame subfield in the frame control field is set to 1). The frame body is null (0 octets in length) in data frames of Subtype Null function (no data), CF-Ack (no data), CF-Poll (no data), and CF-Ack+CF-Poll (no data).

Second: Thomas Maufer

Discussion:
None

No objection – motion passes

**Motion by Frank Ciotti**

**Comment 142 - Accept**

In Clause 10.3.11.1.4, replace:

Receipt of this primitive causes the MAC to set the appropriate keys and to begin using them as indicated.

**With:**

Receipt of this primitive causes the MAC to set the appropriate keys and to begin using them for future MA-UNITDATA.request and MA-UNITDATA.indication primitives provided the MLME-SETPROTECTION.request has been issued.

Second: Thomas Maufer

Discussion:
None

No objection – motion passes

**Motion by Frank Ciotti**

**Comment 143 - Accept**

In Clause 10.3.11.1.2, replace:

<table>
<thead>
<tr>
<th>Name</th>
<th>Type</th>
<th>Valid range</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Keylist</td>
<td>A set of KeyDescriptors</td>
<td>N/A</td>
<td>The list of keys to be used by the MAC.</td>
</tr>
</tbody>
</table>
Each KeyDescriptor consists of the following elements:

**With:**

<table>
<thead>
<tr>
<th>Name</th>
<th>Type</th>
<th>Valid range</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Keylist</td>
<td>A set of</td>
<td>N/A</td>
<td>The list of keys to be used by the MAC.</td>
</tr>
<tr>
<td></td>
<td>SetKeyDescriptors</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Each SetKeyDescriptor consists of the following elements:

*In Clause 10.3.12.1.2, replace:*

<table>
<thead>
<tr>
<th>Name</th>
<th>Type</th>
<th>Valid range</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Keylist</td>
<td>A set of</td>
<td>N/A</td>
<td>The list of keys to be deleted from the MAC</td>
</tr>
<tr>
<td></td>
<td>KeyDescriptors</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Each KeyDescriptor consists of the following elements:

**With:**

<table>
<thead>
<tr>
<th>Name</th>
<th>Type</th>
<th>Valid range</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Keylist</td>
<td>A set of</td>
<td>N/A</td>
<td>The list of keys to be deleted from the MAC</td>
</tr>
<tr>
<td></td>
<td>DeleteKeyDescriptors</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Each DeleteKeyDescriptor consists of the following elements:

Second: Tim Moore

Discussion:
None

No objection – motion passes

**Motion by Frank Ciotti**

**Comment 144, 145 - Accept**

*In Clause 10.3.12.1.2, replace the following table:*

<table>
<thead>
<tr>
<th>Name</th>
<th>Type</th>
<th>Valid range</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Address</td>
<td>MAC Address</td>
<td>Any valid individual MAC address</td>
<td>This parameter is valid only when the key type is Pairwise, or when the key</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>type is Group and is from an IBSS STA, or when the key is type STAKey</td>
</tr>
</tbody>
</table>
With:

<table>
<thead>
<tr>
<th>Name</th>
<th>Type</th>
<th>Valid range</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Key ID</td>
<td>Integer</td>
<td>N/A</td>
<td>Key ID</td>
</tr>
<tr>
<td>Key Type</td>
<td>Integer</td>
<td>Group, Pairwise, STAKey</td>
<td>Defines whether this key is a Group or Pairwise key, or STAKey key.</td>
</tr>
<tr>
<td>Address</td>
<td>MAC Address</td>
<td>Any valid individual MAC address</td>
<td>This parameter is valid only when the key type is Pairwise, or when the key type is Group and is from an IBSS STA, or when the key is type STAKey</td>
</tr>
</tbody>
</table>

Second: Tim Moore

Discussion:
None

No objection – motion passes

Comment 146 – Accept (addressed in draft 8)

Comment 147 -
Discuss off-line

Comment 148 – (dual Association)
Discuss off-line

Motion by Frank Ciotti

Comment 149 - Accept

In Clause 11.4.5, replace list item b:
  
  b) The state variable for the AP shall be set to 2.

With:
  
  b) The state variable for the AP shall be set to 2 if and only if it was not 1.

Second: Thomas Maufer

Discussion:
None
No objection – motion passes

Comment 150 - Reject

Submission: Dorothy Stanley – doc 04/332r3

Motion by Dorothy Stanley

Instruct the editor to incorporate the changes for Comment 81 and the change described for Clause 8.5.2 specified in document 04/332r3 into the TGi draft with the following changes:

- Change all occurrences of “AAA key” to “AAA Key”

Second: Dave Nelson

Discussion:
None

No objection – motion passes

Motion by Tim Moore

Comment 148 - Accept

In Clause 11.4.3, replace:

a) If the state variable for the indicated new AP is in state 1, the STA shall inform the SME of the failure of the reassociation by issuing an MLME-REASSOCIATE.confirm primitive.

b) If the STA is already associated, the state variable for the old AP shall be set to 2.

c) The STA shall transmit a Reassociation Request frame to the new AP. If the MLME-REASSOCIATE.request primitive contained an RSN IE with only one pairwise cipher suite and only one authenticated key suite, this RSN IE shall be included in the Reassociation Request frame.

d) If a Reassociation Response frame is received with a status value of “successful,” the STA is now associated with the new AP. The state variable for the new AP shall be set to state 3, and the MLME shall issue an MLME-REASSOCIATE.confirm primitive indicating the successful completion of the operation.

e) If a Reassociation Response frame is received with a status value other than “successful” or the AssociateFailureTimeout expires, the STA is not associated with the AP and the MLME shall issue an MLME-REASSOCIATE.confirm primitive indicating the failure of the operation.

f) The SME shall establish an RSNA, or it shall enable WEP by calling MLME.SETPROTECTION.request primitive with ProtectType set to “Rx_Tx”, or it shall do nothing if it does not wish to secure communication.

With:

a) If the state variable is in state 1, the STA shall inform the SME of the failure of the reassociation by issuing an MLME-REASSOCIATE.confirm primitive.
b) The STA shall transmit a Reassociation Request frame to the new AP. If the MLME-REASSOCIATE.request primitive contained an RSN IE with only one pairwise cipher suite and only one authenticated key suite, this RSN IE shall be included in the Reassociation Request frame.

c) If a Reassociation Response frame is received with a status value of “successful,” the STA is now associated with the new AP. The state variable shall be set to state 3 and the MLME shall issue an MLME-REASSOCIATE.confirm primitive indicating the successful completion of the operation.

d) If a Reassociation Response frame is received with a status value other than “successful” or the AssociateFailureTimeout expires, the STA is not associated with the AP and the MLME shall issue an MLME-REASSOCIATE.confirm primitive indicating the failure of the operation.

e) The SME shall establish an RSNA, or it shall enable WEP by calling MLME.SETPROTECTION.request primitive with ProtectType set to “Rx_Tx”, or it shall do nothing if it does not wish to secure communication.

Second: Thomas Maufer

Discussion:
None

No objection – motion passes

Spreadsheet summary
4 comments remaining – 3 are remaining from the previous SB, so there is really only 1.

Comment 147 – Accept
This comment was addressed by a previous motion which removed the referenced text.

This leaves no further comments to process.

Chair: Are there any further motions that anybody would like to make?
None

Comment: What are the plans going forward?
Chair: To make a “Motion for Delayed SB recirc & Conditional RevCom Submission” to conclude on April 15th and placed on the next available RevCom agenda (June) if approved.

Chair: The intent would be to send the same draft 9.0 to RevCom. We could send out another re-circ to conclude in May if necessary. It is better to get things to RevCom early.

Chair: We plan to have a TGi meeting in Chicago on April 20th and 21th.

Motion by Clint Chaplin
TGi to have a meeting in Chicago on April 20th and 21th to address Sponsor Ballot Recirculation comments and start a new SB Recirculation ballot.
Second: Kelly McClellan

Discussion:
None

Vote: 20-0-3 Passes

**Straw Poll**

I plan to attend the TGi April meeting

Result: 8

Chair: Any objection to recessing until 10:30am?
None

Recessed at 9:50am
Resume 10:30am

**Motion by Frank Ciotti**

*In Clause 2, replace:*

IEEE Std 802.1X-REV, Standards for Local and Metropolitan Area Networks: Port Based Network Access Control.

*With:*

IEEE P802.1X-REV, Standards for Local and Metropolitan Area Networks: Port Based Network Access Control.

Editor’s note: The P802.1X REV project is expected to complete in the same timeframe as 802.11i. It is therefore expected that this reference shall be replaced by the IEEE editor with the approved standard reference which will be “IEEE Std 802.1X-2004” prior to publication.

Second: Tim Moore

Discussion:
None

Vote: 16-0-1 Passes

Chair: are there any further motions?
None

Chair: Any objection to recessing for 20 mins while I consult with Stewart on the RevCom motion?
Motion by Henry Ptasinski

Request the TGi editor to create a draft 9.0.

Second: Clint Chaplin

Discussion:
None

Vote: 23-0-0 Passes

Motion for Delayed SB Recirc. & Conditional RevCom Submission

Believing that sponsor ballot comment responses in 11-04/273r6 and motions duly adopted in TGi will enable the editor to produce the document mentioned below that satisfies IEEE-SA rules for sponsor ballot recirculation and that the recirculation will likely result in approval of the draft,

Authorize a SB recirculation of 802.11i draft 9.0 to conclude no later than 4/15/2004 and request to be placed on the RevCom agenda in ExCom using Procedure 10.

Movers:
TGi: Thomas Maufer/Clint Chaplin  

Result:

Discussion:
Comment: you are asking that ExCom place you on the RevCom agenda?
Chair: right

Vote: 23-0-1 Passes

Chair: All no-voter comments need to be placed in a package and delivered to ExCom. No-voters who believe that their comments were addressed, should send an email to David Halasz, Stewart Kerry and Andrew Ickowicz so their comments do not have to be included in the package.

Email addresses to send change of vote to:

   David Halasz <dhala@cisco.com>
   Stuart Kerry <stuart.kerry@philips.com>
   Andrew Ickowicz <a.ickowicz@ieee.org>

Chair: I don’t believe that we will be able to contact all no-voters.

Motion to adjourn by Dorothy Stanley

Second: Clint Chaplin
No objection – motion passed

Adjourned at 11:31am
Minutes

The meeting called to order at 8:05 AM by Sheung Li, Chairman. Sheung indicated that a number of people in the group are not attending the meetings and voting. Consequently, an inadequate number of people are voting on issues. A discussion followed amongst the members regarding dropping individuals from the group who have not attended the meeting for a long period of time.

A document was developed by the standard’s editor and loaded into the task group area that comprises all ballot comments to the latest version of the draft. The group addressed up to Comment 34 yesterday. The comments specify the areas affected and contain the information that should be added or replaced. A number of comments address using other 802.11 documents. In many cases, because this document addresses operations in Japan, they are not applicable and new requirements must be specified.

The ballot comment document is entered as 11-04-0042-000j-tgj-comment-resolution-1b64. The editor addressed the comments in order. The chairman recorded the group’s resolution to the comments in the appropriate column of the table.

Specific comments addressed in this meeting are as follows:

- The sensitivity was addressed in Comment # 250. No definite resolution was made in the meeting. It was decided to resume the discussion later.

- Comment #34 was next addressed. It was decided to put off discussion until a later time.

- Comment #38 required that the text be rewritten. Comment #39 was responded by siting the IEEE style guide and ASN.1 requirements. Comments #40 and #41 requested that the compound sentences be split into two sentences to improve readability.

- Comment #43 concerned the way in which a channel starting frequency is addressed. It is a MIB variable of type INTEGER. Comment #45 addressed the same information. Comment #46’s resolution was to remove the figures being addressed.

- Comments #5, 10, 33, 35, 36, 43, 46, 71, and 72 are tied to Issue A.

- Comment #47 addresses slot time. That has been tagged as “Issue B”. This also applies, to comments 12, 14-18, 22-25, and 47-65.

- Comment #66 is an editorial comment. “Issue C” has been assigned to this comment.

- For Comment #67, the recommended action is being taken.
• Comment #68 treated in the same fashion as #4.

• Comment #69 requests to remove the term “BSS” in front of beacon. Since there is only one type of beacon, the comment was accepted.

• Comments #70 and #71 are being rejected as being technical. They are being addressed by “Issue A”.

• Comments #72 and 73 are also addressed by Issue A. They were rejected.

• It was brought up that Comments 13 and 27 have to be addressed together. Comment #27 was written because there is a sentence in the standard that should be removed. It points to TGe as a resolution, but that is felt to be an incorrect one. The impression is that TGe needs to make a correction to their standard. The resolution will be to include text describing how the time has been determined; as a function of round trip timing. It was noted that the base standard does not provide calculations to yield the times being referenced. 17.4.4 and 17.3.9.2 in the document also address these issues. It is felt that the formula in our document is correct, and is dependant on the coverage class.

Issue A’s resolution requires to change the coverage class table to eliminate the shortcut and show the sum of the numbers needed to arrive at the results.

Timing is assumed to be one-way in the base standard, but two-way must be considered in the “j” document. It is felt that the equation is wrong in the base standard, and must be fixed. Either we must get the base fixed, or modify the equation by using a two-way propagation time in “j”. The final decision was to change the aSlotTime for Clause 17 PHY, range <=<300 meters in Table 22 from 13 usc to 16 usec. In that manner the base document equations do not have to be changed. Clause 17 PHY will be moved from the Comments Column to the “aSlotTime” Columns in Table 22. This change responds to Comment #52 from Andrew Myles. Clause J.17.3.8.6 will also be fixed accordingly.

A resolution was made that the editor resolve Issue A by the 1:30 meeting today.

Issue B requested that mechanisms be inserted in the base standard to bind regulations to Japan. Issue B applies to Comments 8, 9, 41 and 42 amongst others. However, to respond to these comments, we will make the starting frequency an integer, by indicating that the MIB value is in units of 500KHz. Additional clarification will be inserted in the document. Corrections need to be made in 802.11d, which has been incorporated into the new base document.

A country element is being included in .11j in Section 9.9. A regulatory annex will be constructed that must be referenced in Section 9.9 to point to tables by countries.

Break taken @ 10:00 AM.

The meeting resumed @ 10:30 AM with the editor, Peter Ecclesine again leading the addressing of ballot comments. Comment #3 was the first to be addressed. As before, all comment resolution was recorded in the appropriate column of the file for presentation at the plenary meeting.

Comments #19 –21 were next addressed. They noted a difference in the way in which countries are handled in 802.11e vs. j.

The comment resolution document as handled by the chairman was entered on the server as document –411 so that everyone could review comment resolution and approve or disapprove everything added so far.

The editor took a deadline to have all comments integrated into the document by the end of the month.

All “Issue A” comments were addressed and resolved.

For Comment # 75, a vote of 5 accept – 1 reject – 4 abstain vote was taken to accept the comment.

All comments were resolved. Sheung uploaded the new comment resolution document as “0411/r1”.
A lunch recess was taken @ 12:20.

The meeting resumed at 1:35 PM in the same fashion with Sheung Li presenting and recording the comments to the standard draft while the editor addressed them with recommendations.

To address comments 19 – 21, which were put off in the morning until further research could be conducted by the editor, it was recommended that modifications be added to section 9.9.1 to describe carrier sensing in relation to fragmentation. As there were no other changes to add to the document, the chairman took a motion and a vote to submit the final version of the comment resolution document as “0411/r2”. A vote was taken with a result of 7 for – 0 against and 0 abstain.

A motion was made to have the editor revise the draft standard to incorporate all approved changes as documented in the 0411/r2 document. The motion was seconded, balloted on, and accepted with a vote of 6 for – 0 against – 0 abstain.

A motion was made to hold a 16 day air ballot with follow-on. The motion was seconded, and balloted with a vote of 6 for – 0 against – 0 abstain.

A motion to request a Procedure 10 issuance of a sponsor ballot subsequent to the acceptance of a recirculation ballot was made. It was seconded. A vote of 7 for –0 against –0 abstain approved it.

A motion was made to hold an adhoc and interim meetings as well as teleconferences as necessary to review the draft before the May IEEE 802 meeting. The motion was seconded. A vote was taken receiving 7 for – 0 against- 0 abstain.

At 1:50PM a motion was made by the chairman to adjourn the TGj meeting for both today and the remainder of the March IEEE meeting. The motion was seconded and unanimously approved by the members.
IEEE P802.11
Wireless LANs

Minutes for the TGk March 2004 Session

Date:

March 15, 2004

Author:

Paul Gray
AirWave Wireless, Inc.
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1. Chairperson calls the conference to order at 4:00 PM
2. Attendance
3. Agenda 04-276r0
   a. Integration of h group inputs
   b. Draft 0.13 Review
   c. Measurement Security Inputs
   d. Letter Ballot Vote
4. Motion to amend agenda passes unanimously
5. Review IEEE 802 & 802.11 Policies and Rules
   a. Patent Policy
   b. Inappropriate Topics
   c. Documentation
   d. Voting
   e. Roberts Rules
6. Technical Presentations
   **Monday**
   a. Black – (2) Comment Resolution
   b. Kwak- (2) Corrections
   c. Olson (1) Comment Resolution
   **Thursday**
   d. Sudheer (1)
   e. Barber – (1)
   f. Kwak – (4 )
   g. Black (1)
   h. Johnson (1)
   i. Qi – (1)
   a. Motion
      “To accept the comment resolutions as found in database document 11-04-067r8”.
      Moved Dave Bagby
      Second Joe Kwak
      For: 13 Against: 0 Abstain: 7
      Motion Passes
8. Technical Presentation –Harmonization with IEEE802.11h document - Simon Black - 11-04/293r0 & 11-04/292r0 (text)
   a. Objective - Provide a submission detailing the changes required to D0.12 to address the
      comments related to overlap with IEEE802.11h
   b. In part based on discussions and initial text drafting by the authors, Tim Olson, Joe Kwak
      and Simon Barber (‘the T Gh gang’) in Vancouver
   c. Additions to clause 5 to define a radio measurement service and action frame
   d. Correction of probe response contents
   e. Changes to measurement request and report elements
f. Editor Question – which draft should these changes be applied to? Simon suggests these changes be applied to D 0.12.
g. Comment – Simon should fix any collisions for example item 21 in Table 12 – Probe Response Frame Body.
h. Question – how does backward compatibility work?
i. Question – was there a president for this?
j. Question – do we still have Disassociation Imminent in the spec?
k. Comment – Channel Switch Announcement? How did it get included? Answer - It does not matter, because section 7.4.1 describes only category fields with values 2 and 3 to be used for Radio Measurement Purposes.
l. Comment – Delete Table 5 from draft and resubmit.
m. Question – Clause 10.3.11 comment is wrong, because this is not new text introduced by TGk. The text was introduced in TGh.
n. Comment – Editor will correct the reference in 802.11h. He will additionally change the title of 10.3.11.
o. Probe Request Response should be included.
p. Simon will change A.4.11 to A.4.13, because TGh is using A.4.12.
q. Comment - Editor requests that this submission get voted on ASAP, so he can proceed quickly with editing. Simon will post r1 as soon as possible.

9. Chair – meeting is in 5 minute recess
10. Chair brings meeting back to order
11. Technical Presentation – Joe Kwak - Comment Resolution for Periodic Measurements - 11-04/296r0
   a. Question – why are we changing STAs back to APs for reporting conditions 5-10. Answer - these are used for hand-off and roaming.
   b. Question – why are these not applicable to IBSS? Answer is that in IBSS the stations don’t have a name, so there is less need for coordinating functionality.
12. Recess for dinner at 6:00 PM
Monday, March 15, 2004
7:30 PM – 9:30 PM

1. Chairperson calls meeting to order at 7:36 PM

2. Resume Technical Presentation – Joe Kwak - Comment Resolution for Periodic Measurements - 11-04/296r0
   a. Comment – could we change “AP” to “relative to a specified station”? This might be useful for ISPs who are using IBSS to build mesh networks.
   b. Question – What do you do if the AP/STA is broadcasting multiple BSSIDs?
   c. Question – How does the source station cancel a periodic measurement? Answer – by sending 3FFF in period subfield for that BSSID.
   d. Question – it is unclear if you must be associated. Answer – Spectrum Management Action Frames are class 1, so you don’t need to be associated. If we decide RRM action frames are class 3, then we need to add security.
   e. Comment - Periodic measurement frames are a new class of frames that need to be addressed.
   f. Question – What happens to periodic measurements when you roam? Answer - A STA shall cancel all in-process Radio Measurements and shall delete all pending, unprocessed Radio Measurement requests upon disassociation or re-association.
   g. Comment – measurements have durations which are depicted in the X-3 Diagram of Periodic Measurements. What happens if the measurement starts, but does not finish in the time period?
   h. Comment – When TGe is approved then our Radio Measurement Frames become invalid.
   i. Comment – Joe will revise the document according to Tim’s comment and correct a couple of spelling errors for vote tomorrow.
   j. Comment – In section 11.7.5 “localized BSS” does not make sense – it might need to be changed to BSA. Can you get a periodic measurement from a station that is not associated? Answer – the comment is not addressing this issue. If the station is capable and has the capacity, you can request periodic measurements. If you are associated you can still receive Class 1 frames.
   k. Comment – reword to take into account a station re-associating with the same access point without a disassociation like going out of range and coming back in range.

3. Technical Presentation – Tim Olson – Beacon Table Clarification – 11-04/281r0
   a. The Beacon Request supports a mode called “Beacon Table” mode where a client STA returns any saved beacon information from any operation that would save such information such as scanning for new APs.
   b. Question – how do you fill in the start time? Answer – the start time is irrelevant for this mode. It is applicable for other modes.
   c. Comment – this is not just for Beacon Reports, but any measurement.
   d. Motion
      To instruct the editor to apply the editing instructions in document 11-04-281r0 when preparing the next version of the IEEE802.11k draft.

Moved Tim Olson
Second Joe Kwak

For: 14 Against: 0 Abstain: 0
4. Technical Presentation - Amjad Soomro - Correcting Medium Sensing Time Histogram Report Text in Clause 7.3.2.20.6 - 11-04/252r0
   a. Motion
      To instruct the editor to apply the editing instructions in document 11-04-252r0 when preparing the next version of the IEEE802.11k draft.

      Moved: Amjad Soomro  
      Second: Simon Black

      For: 13  Against: 0  Abstain: 3

5. Technical Presentation - Amjad Soomro - Revised site report text in Clause 11.8 - 11-04/251r0
   a. Comment - Get rid of the word “AP” on the last paragraph of section 11.8.
   b. Comment – Change it in the previous sentence, because it mentions “compiled by AP”
   c. Comment – if “compiled” in the last line of section 11.8 means generated then we should strike the entire sentence.
   d. Comment – we are saying that the AP should store information in the MIB.
   e. Comment – Site Report can be used with Disassociation Imminent. Should we address it here? Answer - We should not address it here.
   f. Comment – strike the last sentence in section 11.8, because the sentence immediately above it describes it.
   g. Comment – there might be additional changes that require and r2.

      Motion:

      To instruct the editor to apply the editing instructions in document 11-04-251r1 when preparing the next version of the IEEE802.11k draft

      Moved: Amjad Soomro  
      Second: None

      No vote, because there was not second.

6. Meeting in recess until tomorrow at 8:00 AM.
Tuesday, March 16, 2004  
8:00 AM – 10:00 AM

1. Chairperson calls the meeting to order at 8:00 AM.
2. Review Agenda
3. Technical Presentation – Simon Black – Harmonization of IEEE802.11k/D0.12 and IEEE802.11h - 11-04-292/r1
   a. Changes between r0 and r1
      • Several typographical errors corrected
      • Included the re-ordering of the requested information elements field in Table 12 (Probe Response)
      • Clarified the editing instruction prior to 7.4 to delete Table 5 and deal with the two occurrences of 7.4.1.
      • Included corrections to cross references in 802.11h 7.4.1.1 and 7.4.1.2
      • Included editing instruction immediately prior to the section heading in the text to be replaced in 10.3.11
      • Corrected the deleted part of the title of 10.3.11 to be spectrum management and not radio measurement
      • Corrected the editing instruction immediately prior to the A.4.13 PICS table to renumber the clause and then apply changes, rather than replace the clause with a change marked version.
   b. Comment - None
4. Technical Presentation – Simon Black – Comment Resolution – 11-04-0294/r1
   a. Ready for a vote on Thursday after the document has been on the server for 4 hours.
5. Chair – We are switching to comment resolution mode while we wait on presenters.
6. Comment #225 - Clause 10.3.13.1.4
   a. Problem – Explain multiple reports for single request frame.
   b. Remedy – Add sentence “Note that since a Measurement Request frame may contain multiple Measurement request elements, a single MLME-RMEASURE.req may generate multiple MLME-RMEASURE.conf responses, each of which may generate a separate Measure Report Frame.
   c. Comment – should we be waiting for 150 frames until we get results back. The undo delay is ambiguous.
   d. Comment – in the original draft we did not have a start time. Now you can connect the various responses by start time.
   e. Comment – We can leave it ambiguous where you can send all responses back together or one by one.
   f. Comment - we need to redraft 11.7.6.
   g. Comment – we need to add “undo delay”. You can return individual measurement reports or accumulate reports and send all back with “undo delay”
   h. Resolution – pending – assigned to Simon Black
7. Comment #7 – Clause A.4.11-
   a. Problem – Need to fill in the Noise Histogram TBDs in the PICs
   b. Remedy – The Noise Histograms in the PICs should be optional. There could be some innovative ways of detecting and utilizing the hysteresis of noise without a specified mechanism in 11k.
   c. Comment – we had an overwhelming strong straw pole that indicated the group wanted a Noise Histogram to be mandatory in TGk.
   d. Comment – there have been two proposals drafted, but neither was accepted.
e. Chairperson – reaffirms from the group that there needs to  
f. Resolution – accept comment – instruct the editor to make the noise histogram mandatory in the PICs.

8. Comment #131 – Clause 11.7.4 – Black  
a. Problem – We need to clarify the requirement for the STA to return to the “serving channel for a length of time between measurements”  
b. Remedy - Clarify  
c. Question – Does Joe Kwak’s presentation and inclusion of diagram solve the issue?  
d. Answer – 11.7.4 is still not addressed.  
e. Comment – we have not established scheduling priorities of the processes.  
f. Comment – unless author has alternative text, then the comment should be accepted.  
g. Comment – Task Group B had the same problem. We left scheduling up to the implementers and this comment seems to fall into that category.  
h. Comment – This is different because it mandates for all measurements that the STA return back to the serving channel.  
i. Comment – Maybe we can add a non binding text. It seems logical that the STA would always return back to serving channel. There are a few exceptions like fast roam.  
j. Comment – Measurements might be delayed and the STA will always return to the serving channel as mandated  
k. 11.7.x states that higher priorities may override periodic measurements.  
l. Resolution – accept – no action needed – Simon will resubmit with more clarity in next comment resolution.

9. Comment #234 – Clause 11.7.6 - Kwak  
a. Problem – Processing of Measurement Requests needs to be consistent with TGh.  
b. Remedy – Delete TGk wording and replace with TGh.  
c. Comment – pending adoption of the TGh harmonization this comment is resolved.  
d. Comment – we can still work within the TGh for processing of Measurement Requests by including a parameter “best effort”. TGh is explicit and TGk is best effort.  
e. Chair – we had previously declined this comment.  
f. Resolution – decline comment

10. Comment #6 – Clause A, 4.11 - Paine  
a. Problem – Need to fill in the Parallel Measurements TBD in PICs  
b. Remedy – The Parallel Measurements in the PICs should be optional. Another method of providing parallel measurement information is the caching of information about the STAs.  
c. Comment – There are some measurements that need to be run in parallel.  
d. Question – which measurements could not be run in parallel?  
e. Comment – If we make it mandatory our “out” would be that a STA can refuse to make the measurement.  
f. Comment – what does “mandatory” mean when the STA can refuse.  
g. Resolution – accept – make it mandatory – instruct editor to make Parallel Measurements mandatory in PICs.

11. Comment #39 – Clause 7.4.16 - Edney  
a. Problem – Who is the STA allowed to send the message to? In ESS is it only the associated AP? This is not specified.  
b. Remedy – none  
c. Comment – Differed to discussion on 11.7 and 11.8.  
d. Comment – This seems to be wrapped up in Class 1 frames versus Class 3 frames. Is this comment dependent on an upcoming proposal?
e. Question – Are “Class 1 vs. Class 2 Frames” and security two different problems.

f. Comment – What baseline are we working with – the 2003 rollup with TGh and TGe changes.

g. Comment – We might want to state that we are operating on the 2003 rollup with TGh, TGe, and TGi as well. If we think TGi is stable, then we could work off of their base.

h. Comment – The current TGi draft has removed the distinction between Class 1 and Class 2 frames.

i. Comment – Site report request input form Amjad said that you could only send a site report to an AP with which you are associated.

j. Question – Can we reference a draft in our draft?

k. Answer – We can make a motion to change this and build upon TGi.

l. Comment – We should not build on drafts.

m. Comment – Site report is a Class 3 frame.

n. Comment – There is no way to protection Action Frames prior to association.

o. Comment – We should close the specific request for Site Report Request, because it has already been determined that this is a Class 3 frame.

p. Comment – We should make a determination if we care about the distinction between Class 2 and Class 3 frames.

q. Comment – How do we intend to resolve? Maybe we should define per frame/action classification.

r. Comment – we have (1) Site Report and (2) Measurements.

s. Comment – we should allocate specific time on Thursday morning to discuss this issue.

t. Comment – Thursday morning is too late. If only Site Report is a Class 3 frame, then we could address with minor edits.

u. Resolution – accept comment – with no editing required.

12. Motion to modify agenda to include discussion on Class 1 versus Class 2 frames – motion passes unanimously.

13. Motion to recess – motion passes unanimously

14. Meeting in recess until today at 10:00 AM
Tuesday, March 16, 2004
10:00 AM – 12:00 PM

1. Chairperson calls the meeting to order 10:00 AM

2. Class 1 versus Class 2 Frames
   a. Comment – We need to address this with TGi as soon as we have a well defined mandate.
   b. Comment – Do we care about 1 & 3 or 1 & 2?
   c. Comment – What happens to a measurement request in IBSS? Answer – IBSS does not have Class 3.
   d. Comment – TGi does authentication in IBSS. TGi does not really deal with Class of Frame.

3. Technical Presentation – Emily Qi – 04/0264r0
   a. Comment – is this going to affect the PICs?
   b. Comment – should we go down to the information element?
   c. Comment – we should leave everything Class 1 and define later.
   d. Comment – we need to solve the problem, because when we get close to voting nobody will want to take this issue on.
   e. Comment – is there any reason why we can’t define how to encrypt the frame in later discussions.
   f. Comment – after association, frames coming from an associated client are not Class 1 frame.
   g. Comment – 5.5 defines that after association you can only receive Class 3 frames. In the associated state you can receive Class 2 frames, in the authenticated state you can receive Class 2 frames, and in unauthenticated you can receive Class 1 frames.
   h. Comment - there is state and class. Even if you are in associated state there are still Class 1 frames.
   i. Comment - the frame does not have an identifying header that states which class of frame it is.
   j. Comment – We should look at all elements in Measurement Request/Report.
   k. Move to table the discussion
   l. Chair overrules and wants to continue
   m. Straw Poll on securing various Action Frames

<table>
<thead>
<tr>
<th>Description</th>
<th>State (1-3)</th>
<th>Ever Protected</th>
</tr>
</thead>
<tbody>
<tr>
<td>Measurement Request</td>
<td>1-5, 2-0, 3-5</td>
<td>Y-6, N-1</td>
</tr>
<tr>
<td>Measurement Report</td>
<td>1-4, 2-1, 3-5</td>
<td>Y-15, N-0</td>
</tr>
<tr>
<td>TPC Request</td>
<td>1-3, 2-0, 3-6</td>
<td>Y-8, N-0</td>
</tr>
<tr>
<td>TPC Report</td>
<td>1-4, 2-0,3-4</td>
<td>Y-7, N-0</td>
</tr>
<tr>
<td>Site Report Request</td>
<td>1-3, 2-0, 3-9</td>
<td>Y-11, N-3</td>
</tr>
<tr>
<td>Site Report Response</td>
<td>1-1, 2-1, 3-9</td>
<td>Y-12, N-0</td>
</tr>
<tr>
<td>Disassociation Imminent</td>
<td>1-0, 2-0, 3-11</td>
<td>Y-6, N-2</td>
</tr>
<tr>
<td>Reserved</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

4. Motion from previous technical presentation by Simon Black 11-04-292r1
   a. To instruct the editor to apply the editing instructions in document 11-04-292r1 when preparing the next version of the IEEE802.11k draft.
Moved: Simon Black  
Second: Simon Barber

For: 21  Against: 0  Abstain: 0
Motion Passes

5. Motion from previous technical presentation by Simon Black 11-04-294r1  
   a. To instruct the editor to apply the editing instructions in document 11-04-294r1 when preparing the next version of the IEEE802.11k draft.

Moved: Simon Black  
Second: Simon Barber

For: 18  Against: 0  Abstain: 3
Motion passes

   a. Answer - What if you get 2 periodic measurements from 2 BSSs and they conflict with each other. Answer – you would queue the requests and if you could not service it, then you would drop the request.  
   b. Comment – This request needs additional work.  
   c. Comment – We should add something to deal with IBSS  
   d. Motion  
      To instruct the editor to incorporate the changes in document 11-04-296r1 when preparing the next version of the IEEE802.11k draft.

Moved: Joe Kwan  
Second: Roger Durand

For: 6  Against: 2  Abstain: 17
Motion passes @ 75%

7. Comment #294 – Clause 7.4.1.18 - Olson  
   a. Problem – It will be very difficult for an AP to accurately fill in the activation delay portion of the Disassociation Imminent frame.  
   b. Remedy – Remove Disassociate Imminent from the draft  
   c. Editor requests a vote to remove disassociate imminent from draft  
      For: 10  Against: 0  Abstain: 5  
   d. Resolution – accept – instruct the editor to remove disassociate imminent from the draft.

8. Comment #44 – Clause 11.7.6 - Edney  
   a. Problem – It says that only one request can be pending at a time. In IBSS this could result in a great deal of lost measurement requests.  
   b. Remedy – None  
   c. Comment – This points out a big limitation in our current implementation. We are already doing queuing. We need to limit the queue.  
   d. Comment – Amend the text that only allows one request per station in IBSS at a time, if we allow multiple pending action frames.  
   e. Resolution – open – assigned to Joe Kwak to make a presentation on Thursday

9. Comment #109 - Clause 7.3.20.4 - Black  
   a. Problem – The Noise Histogram Report – when CCA indicates no 802.11 signal is present . . .STA are unlikely to be able to receive an 802.11 signal of any PHY.
b. Question – What is the difference between signals? A STA might not be able to support all 802.11 PHY types for CCA.

c. Comment – It will be difficult to distinguish between a valid and invalid frame. You must first validate the CRC of the frame.

d. Comment – How many ways are there to detect CCA – CCA will be tripped weather it is an 802.11 or not.

e. When CCA indicates not busy is there more appropriate response. Delay start to the CCA may cause a “not busy” indication that is incorrect.

f. Remedy – Change to “When PHY-CCA.indicates is set to IDLE”

g. Resolution – open – need to recess

10. Simon Black calls for the orders of the day
Chairperson calls the meeting to order 8:04 AM

Chairperson wants to review open issues

a. Do we support the use of the Access Database
   - Comment from Editor – it is very helpful
   - Comment - not all groups need to conform to the standard for our group
   - Comment – can’t the Editors decide this amongst themselves
   - Comment – Filemaker is difficult to understand, but very useful
   - Comment – Access is not available on all platforms (Linux or MAC) – if we are going to use access we need some method to convert.
   - Comment – don’t focus on the method for record comments, but the output
   - Comment – centralize the database and move towards a web front-end
b. How long should comment review go?
   - Comment - we have not voted on D.013
   - Comment - we could formally vote on this draft and make it D.1.
   - Simon has made all of the changes that we voted on this week, but there are still submissions for today.
   - Comment – what we vote on today should be included in the draft, so we have a complete draft prior to next review.
   - Comment – Simon will make a new draft D 0.14 which could be produced at the end of next week.
   - Comment – Start the review on the March 26th through 13th of April. The 13th is just prior to our weekly teleconference. We would start comment review on the 14th of April. This gives us for 4 weeks to complete comment review.
   - Editor Comment – Please review the .pdf and use it for reference, not the word version.

3. Agenda Review
   a. Agenda Accepted

   a. Highlights
      - Add Offset TSF
      - Add Beacon Interval
      - Define the use of Broadcast BSSID within Site Report element
      - Changing the name of BSSID
      - Correct a few editorial issues
   b. Question – How is TSF calculated with drift? Answer - If we do a beacon request and response in timely manner we may reduce the drift.
   c. Comment – Algorithm to calculate the drift is out of the scope of this group.
   d. Comment – Site Report could be populated by external management system.
   e. Comment – I can’t image the AP transmitting this information over the air. How do you see the AP getting this information via the distribution system?
   f. Comment – the APs would be able to hear each other and calculate this information.
   g. Comment – the diagram should be updated – the offset should not be distributed. If you can measure the drift rate, you should send that.
   h. Comment – Joe brought a presentation to extend the site report to accomplish this at last meeting. Site report was thought to be static. We now have a sufficient amount of
dynamic information that does not fit into the “static” site report. We may want to consider a new mechanism to facilitate a “System Information Frame” as in the Cell. World.
i. Comment – drift is a real issue and there are solutions to mitigate it, but do we want to put this complexity into our draft.
j. Comment – Site report is not intended to be dynamic. I would rather see this to be a separate element that is defined in the PICs.
k. Comment – This should not be mandatory.
l. Comment – This does not need to be a separate element. The particular field can be made optional in the site report.
m. Comment – If the AP can discover BSS over the air and also from the DS how do you reconcile? Answer – if you are going to implement something over the DS, then IAPP could take care of this.
n. Comment – Originally Site Report was in Beacon probe and response.
o. Comment – Timing offsets are very useful – example there are multiple APs with potentially multiple BSSIDs, so windows clients are constantly scanning. Offsets could reduce the amount of active scanning. Not all devices in the site report require timing offsets, especially when you can’t hear them.
p. Motion
  To instruct the editor to incorporate the text in document 11-04-384r0-000k when preparing the next version of the IEEE802.11k draft.

Moved: Walter Johnson
Second: Marty Lefkowitz

For: 3 Against: 10 Abstain: 5
Motion Fails

5. Technical Presentation - Revised Site Report Text in Clause 11.8 – 11-04-251r2 - Amjad Soomro
a. Comment – used BSS transition as opposed to roaming
b. Motion
Moved: Amjad Soomro
Second: Simon Black
To instruct the editor to incorporate the text in document 11-04-251r2-000k when preparing the next version of the IEEE802.11k draft

Motion was made to postpone until 3:30 - see section 5.c

F: 14 A: 0 A: 4
Motion Passes

c. Motion
To postpone the motion until today at 3:30 PM

Moved: Marty Lefkowitz
Second: Sudheer Matta

Question - what is the presentation and how will it impact our decision?
Comment against – we don’t need to wait for another presentation, b/c this resolves comment resolutions.
Comment against – we are only deleting the mandatory algorithm requirement.
Comment for – Aboba’s presentation is today, so will not impact

F:  5
A:  11
A:  3

Motion to postpone fails, proceeding back to the original motion see section 5.b.
1. Chairperson calls meeting to order at 10:30
2. Attendance – 37 People attending the meeting
3. Technical Presentation – RCPI information element in the probe - Sudheer Matta – Text 11-03-961r5 – Presentation 11-03-883
   a. Question – If you are going to measure RCPI from probe request, will it be much value.
      Answer – Yes, there are 2 schools of thought (1) we should be very accurate or (2) measure everything we can. Measuring a single packet, it is only a sample – it may not represent the real environment.
   b. Question – What is the accuracy?  Answer - this is not for an entire link.  It is only accurate to +/- 5dB for that particular packet. Many indoor environments are susceptible to fading, so it is very accurate.  RCPI is a packet by packet measurement of the received power.
   c. Comment in favor – we have to provide a probe response anyway.  This helps the client make an informed decision on which AP to associate with. There could be problems when a client needs to associate with 2 fringe APs (APs it barely hears).  This gives us something better than receive only – it gives us a second metric.
   d. Comment – Power only provides the path loss in the channel. There are other parameters needed like noise.  Power in relation to noise is very valuable.
   e. Question – Why not use link margin parameters defined in TGh.  Answer – this is a start, but may not be the total comprehensive solution.  Answer – this adds on a single parameter to the probe response. The margin idea has positive and negatives.  Link Margin is very limited, because it has to be negotiated between the sender and receiver.
   f. Comment – TGh has a parameter defined called Link Margin in the standard.
   g. Comment – This allows us to piggyback on a system in place today and it allows clients not associated to get information.
   h. Comment – Probe request and response should be limited.
   i. Motion
      To instruct the editor to incorporate the text in document 11-04-961r5-000k when preparing the next version of the IEEE802.11k draft.
      Moved: Sudheer Matta
      Second: Joe Kwak
      F: 11            A: 1            A: 7
      Motion Passes

4. Technical Presentation - Measurement Modes – Simon Black - Text 11-04-403r0
   a. Rename Scan Mode to Measurement Mode
   b. Comment – For passive you can receive a probe response
   c. Comment – We need a last paragraph of the passive mode description like there is in the active mode.  Just delete “When active mode”
   d. Question – If you are unassociated must you send a response to the beacon request.
      Answer – this paper does not address this question and it is not defined in the PICs.
   e. Comment – there will be additional work to clarify frame classes
   f. Comment – suggest an r1 to replace typos.
   g. Comment – make the modifications in-line now as has been observed in other working groups.
h. Simon will fix and present an r1.

5. Technical Presentation - Returning Measurement Reports – Simon Black - Text 11-04-404r0
   a. Comment – I don’t understand the phrase “truncate its results”. In the original proposal the
      reports all came back in a single frame, which is no longer a restriction.
   b. Comment – We need to reword it or delete it from the text.
   c. Straw Poll
      Should the sentence about truncating reports in document 404r0 be removed?

      Yes: 5         No:
      Simon will create an r1.

6. Technical Presentation - Revised Site Report Element & MLME Primitives – Simon Black -
   Text 11-04-400r0
   a. Proposes primitives that get added to Clause 10.
   b. Question - What is RSN? Answer is Robust Secure Network as defined by TGi.
   c. Comment – Should we include TGi reference in our draft?
   d. Comment – There are things we can do with the match status as opposed to the supported
      rate – we might be wasting space.
   e. Comment – You can go scan for this information.
   f. Comment – This information comes in the Beacon and it continues to come.
   g. Comment – rates can’t be a fixed length.
   h. Comment – We have problems with terminology with site report and channel report. The
      Frame definition is not consistent.
   i. Comment – This is a good proposal but there is additional information that needs to be in
      here.
   j. Comment – The match status is still an option from the AP, which can’t be determined in
      the Site report.

7. Technical Presentation – Thinking About the Site Report - Bernard Aboba –11-04-412r0
   a. Question – Do you want the AP to make the decision? This presentation does not address
      who controls roaming. There are 3 reasons for this information Diagnostics, Optimization,
      and Inventory.
   b. Question – Where do you want this protocol to move? This is going to be implemented by
      AP vendors whether it is a standard or not.
   c. Comment - Providing a candidate list is useless, because is not scoped or specific.
   d. Comment – the site report is providing 3 bits of information (1) discovery, (2) RSSI, and
      (3) Information about the backhaul – if PKM is there
   e. Comment – the site report – can reduce probe responses by extending the probe report and
      request. You could structure the request for specific applications like fast roaming.
   f. Comment – Concerned about terminology in the presentation – site report alone does not
      do much, it doesn’t invoke any protocol. It is only environment information. You must
      measure in an RF environment. The site report may reduce your measurements, but does
      not negate it. There is assertion in the presentation that we must have focused queries.
      There is no advantage of providing a subset of the information. Answer – it is
      information, but the information is not defined so I can’t utilize it. Because the list is so
      long, it may require multiple transmissions or may not get the information I need.
   g. Comment – Site Report is a tool for roaming when there is a trust relationship between the
      STA and the AP. Answer – agree there must be trust. Beacons are uncontrolled and can’t
      be trusted.
   h. Comment – Is the Key Point of the paper – The client’s intent and identity are very
      important to what should be returned in the site report.
i. Comment – Just because you can get information in the Beacon, it is not a good retort for negating the site report. Site reports can save you time by not scanning.

j. Comment – Scan and 802.1x auth will be the most important and will save the most time

8. Simon moves to recess second by Areg Alimian

9. Meeting in recess until 1:30
Thursday, March 18, 2004
1:30 PM – 3:30 PM

1. Chairperson calls the meeting to order at 1:31
2. Attendance 32 People
3. Technical Presentation – Measurement Presentation – Emily Qi - 11-04-264r1
   a. Comment – Security is not at the MPU level. Protecting disassociate, how does this
      address TKIP keys.
   b. Comment – It did not make sense to protect the disassociate or dis-authenticate packets
      unless you could also protect the associate or authenticate packets. It might be something
      TGr could look at.
   c. Comment – We are not protecting management frames only action frames. All
      management frames need to be protected – looked at it from a holistic standpoint. I would
      advise encrypting these frames.
   d. Comment – This proposal requires a new sequence counter for the unicast and multicast
      messages.
   e. Comment – John Edney’s approach seems better suited for our needs.
   f. Comment – There was a presentation made in Vancouver. This presentation does not take
      into account that stations in infrastructure. You cannot send a multicast data frame. The
      solution is more complex, but each has its merits. The proposal did protect the source and
      destination of action frames so it was not susceptible to cut & past attacks.
   g. Comment – We should clearly define when it is protected and not the negotiation.
   h. Comment – Protection is orthogonal to Class state (1,2,3). A frame is not state dependent.
   i. Comment – Information that is readily available and observable does not need protecting.
   j. Comment – Multicast sequence counters don’t work, because they are not guaranteed.
   k. Comment – If you only authenticate and not encrypt, you can go off-channel to accomplish
      specific task.
   l. Question – Clarify Columns
      • “Protected” means - Do you want it protected or not.
      • “Can Be” means Do plan to send these message before association or not
   m. Comment – can this information be sent to an unassociated station?
   n. Comment – Your proposal is stating that all action frames are protected. These are not
      action frames; they are elements within action frames.
   o. Comment – Action frames contain multiple information elements. In your proposal, if
      individual elements needed to be protected; you would have to send them in different
      action frames.
   p. Straw Poll

<table>
<thead>
<tr>
<th>Measurement Description</th>
<th>Should be protected?</th>
</tr>
</thead>
<tbody>
<tr>
<td>Channel Load</td>
<td>Y(3) N(8)</td>
</tr>
<tr>
<td>Beacon Request</td>
<td>Y(2) N(8)</td>
</tr>
<tr>
<td>Frame</td>
<td>Y(0) N(1)</td>
</tr>
<tr>
<td>Hidden Node</td>
<td>Y(0) N(3)</td>
</tr>
<tr>
<td>Medium Sensing Time Histogram</td>
<td>Y(3) N(3)</td>
</tr>
<tr>
<td>Noise Histogram</td>
<td>Y(1) N(6)</td>
</tr>
<tr>
<td>STA Statistics</td>
<td>Y(2) N(0)</td>
</tr>
</tbody>
</table>
4. Technical Presentation – Review Changes in Draft 13 – Simon Barber 802.11k D.012
5. Technical Presentation – Multiple Pending Measurement Request Frames – Joe Kwak - 11-04-405r0
   a. Comment – How do you handle a new request frame? Answer - when it comes in we queue the request. If I have multiple queues from multiple stations, how do I prioritize the requests? Answer – you always look at the unicast queue, then the multicast queue, then the broadcast queue.
   b. Comment – This seems very different than what we had before. That means that I could have 10 unicast requests queued from 10 different stations.
   c. Comment – it will require more processing resources than before.
   d. Comment – If a STA makes a request of another STA in IBSS that already has a request queued, the STA receiving the request can always refuse the new request.
   e. Comment – We can remove the notion of queues. The reason why there is priority - if I have a station that is receiving normal multicast requests and I want it to take a specific measurement (unicast request) which I want to take priority over the normal multicast.
   f. Chair recesses until 4:05
Chairperson calls meeting to order at 4:05 PM
Attendance 22 people
Resume Joe Kwak’s Technical Presentation - Multiple Pending Measurement Request Frames – Joe Kwak - 11-04-405r0
   a. Comment – this proposal might solve the comment, but there will always be a request thrashing possibility. We have possibilities (1) leave open (2) ignore IBSS, because the solution handle DS
   b. Resolution is to leave this issue open until the next comment resolution round.
Technical Presentation – Improved Definition of AP Service Load – Joe Kwak - 11-04-406r0
   a. Because AP Service Load is nebulous we have created and RSSI-like definition. RSSI has served us well for the last 6 years although there is no clear standard implemented between vendors.
   b. Comment – TGe has a load reporting mechanism (1) # of clients associated, (2) channel load (how is it threshold), (3) available admission capacity.
   c. Comment – call it active scanning and it uses procedure 11.1.3.2.2 with the following modifications.
Technical Presentation – More Extensions to SMT notification Table – Joe Kwak – 11-04-145r1
   a. Straw Poll
      Should we add SMT notification for high traffic load in BSS to existing SMT notification table?
         Yes: 5           No: 0           Abstain: 10
   b. Straw Poll
      Should we add SMT notification for high service load in BSS to existing SMT notification table?
         Yes: 3           No: 1           Abstain: 12
   c. Straw Poll
      Should we add SMT notification for low RCPI at the STA to existing SMT notification table?
         Yes: 5           No: 1           Abstain: 6

   d. Motion
      To instruct the editor to incorporate the text in document 11-04-145r1-000k when preparing the next version of the IEEE802.11k draft.

Moved: Joe Kwak
Second: None
Technical Presentation – Measurement Modes - Simon Black -11-04-403r1
   a. Motion
      To instruct the editor to apply the editing instructions in document 11-04-403r1 when preparing the next version of the IEEE802.11k draft.

Moved: Simon Black
Second: Roger Durand
For: 11  Against: 0  Abstain: 3
Motion Passes

7. Technical Presentation – Returning Measurement Reports- Simon Black -11-04-404r1
   a. Motion
   To instruct the editor to apply the editing instructions in document 11-04-404r1 when preparing the next version of the IEEE802.11k draft.
   Moved: Simon Black
   Second: Leo Monteban

For: 11  Against: 0  Abstain: 3
Motion Passes

8. Review cumulative conference call meeting
   a. Motion
   To accept TGk cumulative conference call minutes in document 11-04-328r0.
   For: 10  Against: 1  Abstain: 1

9. Motion to recess meeting moved by Simon Black and second by Joe Kwak
10. Meeting in recess until 7:30 PM.
Thursday, March 18, 2004
7:30 PM – 9:30 PM

1. Chairperson calls meeting to order at 7:41

2. Attendance – 11 People

3. Technical Presentation - Text proposal on PICS for TPC – Joe Kwak - 11-04-108r1
   a. Comment – Simon left TPC out of his TGh harmonization work. He reserved two slots for them.
   b. Comment – What does “M” mean – a tester testing the product can use the sheet to know what to test “Mandatory”.
   c. Motion
      To instruct the editor to apply the editing instructions in document 11-04-108r1 when preparing the next version of the IEEE802.11k draft.

      Moved: Joe Kwak
      Second: Walter Johnson

      For: 4 Against: 0 Abstain: 6
      Motion Passes

4. Chair – we need to change TPC to something else like “Power Control”. We will not be able to keep it in the document, because it is defined in TGh.

5. Technical Presentation - Dynamic System Information – Joe Kwak - 11-04-297r0
   a. Definition - In 2G and 3G cellular systems, most system information needed for entry and roaming in a network is broadcast regularly in a special "frame" called System Information. It is proposed that TGk could do likewise. In so doing, Site Report could be maintained and expanded to contain only static information about the radio environment. The new Site Report Frame would optionally contain a set of Information Elements which would be selected for transmission by the AP.
   b. Comment – This would split the static and dynamic information into different containers. The AP would transmit the System Information frame to the associated STAs when one of the elements within the System Information elements changes.
   c. The AP has total control of what it sends to STAs.
   d. Example – I am STA and know there are 2 APs, but I am not sure which one to connect to. The one that has a weaker signal has no users, but the one with a strong signal has 50 users. I need additional “dynamic” information to associate with optimal AP, which might be the AP with the weaker signal.
   e. Comment – we need Beacon offset information as stated earlier in a conversation.
   f. Comment – This would be valuable if you define IAPP for all vendors to standardize passing this information.
   g. Comment – What class and protection would you put on this? 802.11f has defined a context blob with RADIUS protection.
   h. Comment – There might be a more efficient way to deliver dynamic information instead of the request and report mechanism.

   a. Reference 11-03-0898-02-000k-PSNI_Measurement_Update.ppt
   b. Changes from last submission
      • Based on D.012
      • PSNI report modified to included PHY PSNI measurement for the most recent packet
• MAC requirements for PSNI in Section 9
  c. Comment – PSNI is not a MAC measurement. The information is information in PHY, but requirement is in the MAC.
  d. Motion
     To instruct the editor to incorporate the changes in document 11-04-110r1-000k when preparing the next version of the IEEE802.11k draft.

     Moved: Joe Kwak
     Second: Steve Pope

     For: 7     Against: 4     Abstain: 5
     Motion Fails

7. Discuss Upcoming Conference Calls
   a. Question – can we move the conference calls to 8:30 AM PST.
   b. Motion
     To empower TGK to conduct teleconferences to progress through the IEEE standards process until two weeks after the July 04 Portland 802 plenary meeting

     Moved: Simon Barber
     Second: Steve Pope

     For: 17     Against: 0     Abstain: 0
     Motion Passes

8. Review for upcoming meetings
   a. Comment – we need to ensure the Letter Ballot is as good as possible prior to opening it up to the entire group.
   b. Comment – we should solicit early feedback from outside.
   c. Question – was the intention of the motion being so vague as to allow us to have more or longer conference calls.
   d. Comment – it is good to put a stake in the ground so we get on the letter ballot process so our voter poll does not swell.
   e. Straw Poll (it is a tradition)
      Do you think we are ready to go to Letter Ballot?

      Yes: 1     No: 11     Abstain: 4

9. Motion to adjourn – moved by Simon Black Second by Simon Barber

10. Meeting is in adjournment
802.11m Report
March 2004
Goals for March 2004

• Interpretation requests
  – Draft responses to requests and forward to WG

• Respond to any comments re the change of the PAR from an amendment to a revision of the standard

• Develop updates to standard
  – Begin work from spreadsheet of work items
  – Volunteers needed
Submissions?

• Are there any submissions?
  – None

• Are there any new interpretation requests?
  – Yes, two.
Proposed Agenda

• Review IEEE Patent Policy
• Review interpretation request procedure
• New business
  – Review interpretation requests received
  – Draft responses to interpretation requests
  – Forward to full WG
  – Review any comments on the revised PAR
  – Begin work on updates to standard
    • Review incoming draft amendment 802.11m 0.1
    • Confirm draft 0.1 as the basis for ongoing work
• Adjourn
Motion to adopt Agenda

• Moved: to adopt the agenda
• Mover: Keith Amann/Haixiang He
• Passes: unanimous
IEEE-SA Standards Board Bylaws on Patents in Standards

The slides from this file were shown and read aloud to the attending members:

http://standards.ieee.org/board/pat/pat-slideset.ppt
Attendance

• Remember to sign in to the attendance server
Comments on Revised PAR

• One comment was received wrt the Revised PAR.

• The response text is in document 4/355r1.

• **Motion:** To adopt the response in document 4/355r1 to Bob Grow’s comment on the revised TGm PAR.

• **Mover:** Terry Cole/ Haixiang He

• **Vote:** Passes unanimously
Motion to Forward to WG

- Motion: to request the working group to accept and forward the comment response contained in document 04/355r1 to Bob Grow as the official response of the 802.11 working group.

- Mover: Terry Cole/ Haixiang He
- Vote: Passes unanimously
Comment Cover Letter

• As a result of the working group approving the comment response at the mid week plenary, document 4/393r1 was created to send to Bob Grow.
Interpretation Procedure

• http://standards.ieee.org/reading/ieee/interp/
• Send email to Linda Gargiulo (l.gargiulo@ieee.org)
• IEEE forwards requests to the WG
• WG classifies as a request for an explanation, or a formal interpretation request
• WG responds
Interpretation Requests

- Adopting beacon parameters in an IBSS
- Reinitializing the 802.11b scrambler for header and psdu fields
Interpretation Request #1

11.1.4 says: "A STA receiving such a frame [a beacon] from another STA in an IBSS with the same SSID shall compare the Timestamp field with its own TSF time. If the Timestamp field of the received frame is later than its own TSF time, the STA shall adopt all parameters contained in the Beacon frame."

What is the meaning of "all parameters" in this context? It's clearly not just the TSF timer, or there would be no need to say "all" parameters. And if it includes information carried in IEs, does it, or does it not, include IEs which the STA does not recognize?
Interpretation Response #1

• see doc 4/425
Motion to adopt 04-425

• Moved: That document 04-425r0 be adopted as the response to the interpretation request regarding “Adopting beacon parameters in an IBSS”.

• Moved: Jon Rosdahl

• Seconded: Keith Amann

• Vote: unanimous
Motion to forward to WG

- Motion: to request the working group to accept and forward the interpretation response contained in document 04-425r0 to Linda Gargiulo at the IEEE office as the official response of the 802.11 working group.
- Moved: Keith Amann
- Seconded: Jon Rosdahl
- Vote: unanimous
Interpretation Request #2

- I have doubt regarding scrambling in 802.11b. For each packet we have 3 fields (plcp header, plcp preamble and psdu). While scrambling plcp preamble we are initializing with particular seed based on preamble. What about header and psdu fields. We have to be reinitialize the scrambler state or not?
Interpretation Response #2

- IEEE STD 802.11b-1999 (reaffirmed 2003) clearly states the requirements for scrambling in clauses 15.2.3 and 15.2.4. Since the standard is clear on this matter, no interpretation is required.
Motion to adopt 04-426

• Moved: That document 04-426r0 be adopted as the response to the interpretation request regarding reinitializing the 802.11b scrambler for header and psdu fields.

• Moved: Jon Rosdahl

• Seconded: Keith Amann

• Vote: unanimous
Motion to forward to WG

- Motion: to request the working group to accept and forward the interpretation response contained in document 04-426r0 to Linda Gargiulo at the IEEE office as the official response of the 802.11 working group.
  - Moved: Keith Amann
  - Seconded: Jon Rosdahl
  - Vote: unanimous
Output Documents

- 04/355r1: revised PAR comment response and motions
- 04/393r1: cover letter for comment response to revised PAR
- 04/427r0: This report
- 04/425r0: Interpretation Response 1-3/04
- 04/426r0: Interpretation Response 2-3/04
- 03/619r2: Status of Work Items
- 11-04-0007-00-000m-draft-0-1.pdf
Adjourn

• Meeting adjourned at 9:30pm, 2004-03-18
Attendance

• Darwin Engwer
• Terry Cole
• Keith Amann
• Haixiang He
• Kue Wong
• Jon Rosdahl
IEEE P802.11
Wireless LANs

Minutes of High Throughput Task Group Meetings

Date: March 14-19, 2004

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Abstract
Cumulative minutes of the High Throughput Task Group meetings held during the IEEE 802.11/15 Plenary meeting in Orlando from March 14 through 19, 2004.

Executive Summary (see closing report doc. 11-04-0357r0):

1. 17 FRCC submissions presented
2. Functional Requirements were adopted
3. Decision was taken to not make a Simulation Methodology mandatory; Simulation Methodology special committee was disbanded
4. All Comparison Criteria (CC) were addressed and minimized; vote to adopt will occur early at May meeting
5. FRCC special committee will continue to hold bi-weekly conference calls until the May meeting to clear up any CC concerns and address the Usage Models
6. Resolution of Usage Models is the major remaining activity before a Call for Proposals (CfP) can be issued
7. Goals for May meeting are to agree on a timeline, issue the CfP and receive technical presentations
8. Key Document Numbers for quick reference:
   a. TGn Schedule 04-0381 r2
   b. TGn Selection Procedure 03-0665 r9
   c. Selection Procedure Minutes 03-0740 r2
   d. Channel Models 03-0940 r2; adopted
e. Usage Models 03-0802 r14  

f. Functional Requirements 03-0813 r12; adopted  

g. FRCC Cumulative Minutes 03-0815 r10  

h. Comparison Criteria 03-0814 r22;  

i. FRCC Comment Resolution 04-0343 r3  

j. Time Line Alternatives 04-0381 r2

Detailed minutes follow:

Monday March 15; 4:00 –6:00 PM [~ 110 attendees at first meeting]

1. Meeting was called to order by Task Group chairperson Bruce Kraemer at 4:09 PM  

2. New participants in .11n ~30  

3. Voting for the week – Straw Polls are open voting unless indicated differently; otherwise voting members only  

4. Chairs’ Meeting Doc 11-04-0271r1  

5. Chair read IEEE Patent Policy as per doc. 11-04-0271r1; and call to make patents know  

6. Topics NOT to be discussed – license T&Cs; litigation, pricing, territorial restrictions  

7. Review of January Session – 0079r3 has the 24 submissions given at that meeting  

   a. 73 new .11n submissions since close of Vancouver session!!!!  

   b. Subcommittee commissioned in January  

      i. PHY Simulation methodology  

8. Minutes from Vancouver meeting were approved without comment  

9. Objectives for March  

   a. Selection Procedure  

      i. UM  

      ii. FRs  

      iii. CCs  

   b. Simulation methodology  

   c. Presentations  

   d. CFP/Timeline  

10. Chair reviewed rationale for proposed agenda  

    1. History  

    2. Simulation ad hoc Monday evening  

    3. Formal voting Tuesday on FRs and CCs  

    4. So send FRCC comments to Adrian before 9AM Tuesday
5. 6 FRCC presentations and resolution thru Tuesday evening
6. Vote on FRCCs on Wednesday
7. Review call for proposal letter (CFP) and timeline discussion Thursday morning
8. Presentations Thursday afternoon
11. Chair cautioned to carefully watch for most recent doc revisions especially on key docs
12. Called for new FRCC related presentations:
   a. 218r2 Bruno Jechoux; Sim Methodology [45 min]
   b. 302r1 George Vlantis Comments on CCs [10-15]
   c. 307r0 Bjorn Bjerke; Simulation effort required (FRCC) [10]
   d. Hujun Yin; 303r0; System Issues of rate adaptation; sim methodology [15]
   e. 183r2; Hemanth; Sim methodology; record and playback method [25, add on to Jeff Gilbert]
   f. 0304; John Sadowsky PER prediction for 802.11 MAC simulation; [30]
   g. 0316r1; simulation methodology comments on PHY abstraction; John Sadowsky [10]
   h. 0300r0; Opinion; Adrian [10]
13. There are three primary sim methodology proposals – Intel, Qualcomm, ST Micro
14. Request gap between MAC-PHY simulation presentations and voting
   a. Running out of time for presentations on Thursday
15. Special order to commence FRCC at 10:30 on Wednesday was discussed but later rescinded
16. Request simulation methodology voting BEFORE CC discussion since it will have a bearing on the CC discussion
17. Agenda Proposed as amended to add additional slot for simulation methodology
   a. Monday 7:30 PM – simulation methodology
   b. Insert sim methodology discussion into 10:30 AM Tuesday slot
   c. Insert sim methodology voting at 1:30 PM Tuesday
   d. 4:00 PM Tuesday – FRCC discussion starts
   e. 7:30 PM Tuesday evening – FRCC
   f. Agreed to look for additional time, i.e., the Thursday evening slot if it is still open
18. Colin Lanzl – moved to accept agenda as amended; seconded by Adrian Stephens
19. Agenda accepted as amended without objection
20. Chair reviewed list of presentations that had been submitted
   a. New paper added – 11-04-0298; Stephen Ten brink; “General Puncturing Scheme for .11n”
21. Colin Lanzl; reviewed Channel Model document 11-03-0940r2 to refresh memory
22. Adrian Stephens; reviewed FRCC and Usage Model progress since Vancouver; document 11-04-0261r0
23. Adrian issued a call for Comments to be submitted as a document before 9:00 AM Tuesday morning
24. Wants the session to be structured around comment resolution not presentations
25. Use template 11-04-0262r0
26. Send comments to clanzl@ieee.org, adrian.p.stephens@intel.com
27. Adrian walked through FR doc # 11-03-0813r9
   a. These are MANDATORY and are
      i. 100 Mbps at MAC data SAP
      ii. 20 MHz ch
      iii. 5 MHz bands
      iv. Backwards Compatible .11a
      v. Backwards Compatible .11g
      vi. .11n AP can reject legacy STA
      vii. Must meet PAR and 5C
      viii. Support .11e
      ix. Spectral Efficiency
28. Adrian walked thru CCs; doc 11-03-814r17
   a. These are OPTIONAL
   b. MAC related CCs depend in MAC-PHY interface simulation
29. Adrian walked thru Usage Models; doc 11-03-802r13
   a. Usage Scenarios
   b. Usage Environment
   c. Use Cases
   d. No comments
30. Jeff Gilbert reviewed Simulation Methodology Special Committee and status in doc. 11-04-0301r1
   a. Two primary decisions to be made at this meeting
      i. Mandatory or optional
      ii. Intel and Qualcomm et al have one proposal based on PER simulation, Atheros et al have one based on Black Box
          and PHY tables while a third proposal is based on Black Box using PHY record and playback
31. Session was recessed until 7:30PM at 6:01PM

Monday Evening 7:30-9:30 PM

32. Simulation Methodology discussion lead by Jeff Gilbert; speakers list in doc 11-04-0320
   a. Presentation: John Ketchum: Qualcomm; Phy Abstraction based on PER Prediction; doc. 11-04-0269r0
      i. Why bother?
         1) Provide ‘post detection SNRs’
         2) Predict PER
         3) Rate Adaptation Details
         4) Full Disclosure
      ii. Add PHY model in channel model under MAC simulation
iii. PHY Abstraction Assumptions
   1) one or more spatially segregated streams of OFDM symbols
   2) Each stream at a specific coded rate
   3) Channel is stationary over a packet
   Questions
   5) Does this really model interference from other users? A – not exactly but could be extended; AWGN is good enough
   6) Weighted coin toss? A – coin toss says if there is an error or not
   7) What form of stream separation? A – linear
   8) Comment - Scalability is not an issue
   9) AWGN is not a good approx
   10) What coding was assumed? A - .11 convolutional codes
   11) What about turbo codes? A – actually they would be simpler
   12) Assumptions to separate PER from BER? A – assume errors occur in bursts
   13) How is proposer to proceed; does the proposer select the curve fitting constants? A – yes with justification

33. Presentation: Bruno Jechoux: Unified Black Box PHY Abstraction Methodology; Atheros, Mitsubishi, ST Micro; doc 11-04-0218r3
   a. Two Basic Approaches
      i. Simply use tables
      ii. Incorporate Phy simulation into MAC simulation
   b. Black Box = table
      i. One table for each packet length
   c. Questions
      i. Slide 19; assume waterfilling and 48 frequencies, will tables be small? A – no
      ii. Slide 15; how is time variation accounted for in the table? A – abstract rate adaptation
      iii. Optionality (say # antennas); how is this reflected in table? A – must spec rate adaptation
      iv. Since no formula approx; how are tables generated? A – use actual phy or phy simulation results for table

34. Presentation: Hemanth Sampath; Marvell; 11-04-0183r3; Record and Playback PHY Abstraction for 802.11n MAC Simulations
   a. Merge of Record and Playback with Table Look-up
   b. Questions
      i. How is Delay Jitter handled? A – don’t have slides here
      ii. Slide 3; how to address different feedback delays? A – see slide 14; included in alternate rates

35. Presentation: John Sadowsky; Intel; PER Prediction for 802.11n MAC Simulation ; 11-04-0304r1
   a. Strong advantage is ability to handle interference
b. Intel estimated OFDM error Prob within one OFDM symbol; compare with Qualcomm approach which is similar
   i. Zero diversity (e.g., 2x2) is worst case performance

  c. CV (coefficient variation) is variation from AWGN line in slide #13

d. Ensemble averaging is just averaging the error to zero

e. Common fit works across all channel models

f. Question
   i. Symbol error rates map to large PER? A – agree; ensemble average would give a much different answer
   ii. Comment - Worst case since no diversity
   iii. Comment - CV is per OFDM symbol
   iv. How to handle different codes and code rates? A - Fixed QAM order and code rate

36. Session was recessed at 9:31 PM

37. Time for two presentations was requested after recess:
   a. Limitation on Range Extension Using Multiple Antennas; Heejung Yu [15]
   b. Maximizing MAC Throughputs by Dynamic RTS-CTS Threshold; Woo-Yong Choi and Sok-Kyu Lee; ETRI

Tuesday 10:30 – 12:30; March 16

1. Chair indicated the process to fix last evening’s attendance snafu -> send Harry Worstel an email

2. Simulation methodologies continued under leadership of Jeff Gilbert

3. Presentation: “A Comment on Black-Box Adaptation for MAC-PHY Simulation”; 11-04-0300r0; Adrian Stephens; Intel
   a. How does Adaptation work?
   b. Adaptation techniques are numerous
   c. How can we include it in the Black-box method without building the entire MAC simulation into the Black-Box?
   d. Discussion
      i. Straw Poll request to cease discussion of MAC-PHY simulation was ruled out of order by chair pending
         presentation of remaining two presentations
      ii. Black Box does not force only PHY simulations but also the link between the PHY and the MAC
      iii. Q – periodic rate adaptation; how? A – new tables
      iv. Comment – drifting from providing a MAC – PHY interface; let’s decide on proposals then decide on
         mandatory versus optional

4. Presentation: John Sadowsky; Intel; Comments on PHY Abstraction; doc. 11-04-316r1
   a. Comparison of the two proposals
      i. Both use channel models
      ii. PER method – point of abstraction – viterbi decoder
      iii. Black Box (BB) method – point of abstraction - ensemble averaging over channel realization
      iv. PER method not new; used in WWAN studies (GSM)
v. Issue is how to capture rate adaptation in BB approach without complexity explosion?
vii. Post detection SNRs inherently capture rate adaptation
vii. PER can capture major impairments although not all as BB approach can do
b. Discussion
i. Comment – record and playback is better than look-up table
ii. Position – none should be mandatory including PER although if one becomes mandatory it should be PER
iii. Complexity – must include post detection SNR? A – yes. Per sub carrier per spatial stream
iv. Compatibility with Turbo codes? A – replace symbol with block code error probability
v. Comment - Issue really is – rate adaptation + some impairments versus impairments and some rate adaptation?
vi. Q - don’t use idealized PHY? A – agree
vii. Q – don’t provide exact PER but rather an ensemble average? A – yes
viii. Comment – issues have been articulated well
ix. Comment – this is a complex problem and it will consume much time
x. Complexity – 10 sec of real time PER simulation in NS in 10 minutes
xi. Q - is there any way of getting bounds on the two simulation approaches so the audience can make a decision? A – see last night’s presentation slide?
xii. Q – what is relevance of this complex methodology; should it be mandatory? A – no
xiii. Q – is either of the proposals complete now? A - no
xiv. Q – how long would a complete simulation with documentation take? A – probably more than 2 months!
 xv. Comment – better to debate now not during proposal discussions
xvi. Q – PER with rate adaptation errors must be included? A – yes
 xvii. Q – rate adaptation algorithm does not change the PER statistics at the viterbi decoder; A – yes
 xviii. Comment – in .17 similar situation; focus on scenarios and environments not simulations
xix. Response – impossible to include common MAC simulators between system simulations

5. Presentation: System Issues of Rate Adaptation; Hujun Yin; huyun_yin@vivato.net; 11-04-0303r0
a. Link adaptation depends on:
   i. Channel condition (SNR)
   ii. Activity of other links
   iii. Rate adaptation considering PHY only is sub-optimal in random access MAC
   iv. Rate adaptation in PHY simulation may provide biased results for random access MAC
   v. Limiting PHY PER at low level may be artificial if the nature of MAC contention is not considered
   vi. Data rate adaptation has to be considered at system level
b. The black-box approach can not provide accurate PHY-MAC interface abstraction for all possible MAC proposals
   i. Partition rate adaptation
      1) Coarse rate adaptation at MAC
         a) Deals with the network aspect of rate adaptation
2) Fine rate adaptation at PHY
   a) Deals the channel aspect of rate adaptation
   c. Link adaptation localization
      i. Other links only impacted if the rate of one link varies significantly
      ii. Coarse adaptation at MAC sets constraints on the fine rate adaptation at PHY

6. Directed Questions from Jeff Gilbert
   a. Comment – prefer to resolve mandatory vs optional first
   b. Comment – lets decide on methodology first
   c. Voting members only
   d. Straw Poll – Are you in favour of making some MAC-PHY interface simulation mandatory?
      i. Yes (32)
      ii. No (51)
   e. Comment – previous straw poll poorly worded so change and repeat
   f. Straw Poll – Are you in favour of making some PHY abstraction for MAC simulation mandatory? (Y=25, N=57)
   g. Straw Poll - Are you in favour of defining a PHY abstraction for MAC simulation that is optional? (Y=20, N=38)

7. Motion by John Kowalski and seconded by Colin to “Remove from further consider the specification of a standarized PHY abstraction for MAC simulations in the Comparison Criteria”
   a. Discussion
      i. Procedural? Chair responded yes

8. Motion passed (56,23,15)

9. Directed Questions cont’d
   a. Could each of the 4 companies have something by May if a proposal became mandatory?
   b. Four Proposals for reference are:
      i. 0269 – PHY Abstraction based on PER Prediction – John Ketchum
      ii. 0218 – Simulation Methodology – Bruno Jechoux
      iii. 0183 – Record ands Playback Method – Hemanth Sampath
      iv. 0304 – PER Prediction for 802.11 MAC simulation – John Sadowsky

10. Session recessed by Chair until 1:30 this afternoon

Tuesday, 3-16-04; 1:30-3:30 PM

11. Session reconvened at 1:36PM by Chair
12. Chair turned meeting over Adrian to discuss CCs
13. Presentation List doc is 11-04-0271r1
   a. Added another FRCC presentation: 11-04-302r2 by George Vlantis
   b. Added another FRCC presentation: 11-04-0214r1, Rate Adaptive Version of CC67 by John Ketchum
c. Added another FRCC presentation: 11-04-0211r0, Multiple Channel Modes in a Simulation Scenario by John Ketchum

14. Body wanted to follow a “comment directed” process
15. Adrian prepared a consolidated FR,CC,SM comment resolution doc. 11-04-0242r4
16. 6 comment forms were submitted to Adrian by 9AM this morning
17. Start with Functional Requirements; FR doc – 11-04-813r10
   a. Comment – editorial, remove TBDs
   b. Comment – Remove reference to Sim#16 in FR1
   c. Comment – add usage model in FR1 no longer relevant
   d. Comment – make wording in FR2 consistent with FR1
   e. Comment – FR2 does not specify a simulation context;
   f. Adrian said, in his view, mandatory meant mandatory to include in the proposal rather than mandatory to
      include in the final product
   g. Straw Poll - Does mandatory mean that products complying with 802.11n standard must support all features in
      the functional requirements (Y=49, N=12)
   h. Moved by Colin Lanzl and seconded by Jim Zyren that “For the purposes of this document, all products
      complying with the 802.11n standard must support all features in the requirements” be added to Section 2
      ‘Functional Requirements’ of the Functional Requirement
   i. Motion to amend by Dave Bagby and seconded by Colin Lanzl to change ‘requirement’ to ‘document’ in the
      statement of the motion was accepted without objection.
   j. Motion to amend amendment by completely rewording as “A mandatory functional requirement shall appear as
      a mandatory feature in a proposal for a proposal to be considered valid” by Mathew Fischer and seconded by
      Carl Temme passed (41,7,29).
   k. Back to main motion – Carl Temme proposed amending the main motion to “A Functional Requirement (unless
      specifically noted as optional) shall appear as a mandatory feature in a proposal” seconded by Colin Lanzl.
   l. Motion by Adrian to table the motion was seconded by Colin Lanzl and is not debatable passed (37,0,31).
   m. Returning to Comments
      i. Editorial – remove ‘and interoperable’ from FR4 was accepted without objection
      ii. Editorial – remove ‘and interoperable’ from FR5 was accepted without objection since backwards compatible is
         a superset of interoperable
      iii. No objection to moving the definition of Backwards Compatible to FR document and removing notes in FR4,5
          (?)
18. Motion by Colin Lanzl and seconded by Bruce Edwards to recess until 4 PM passed unanimously

Tuesday March 16, 4:00-6:00 PM

19. Adrian continued discussing CCs (11-04-0814r17)
a. Interoperable is included in the PAR and therefore we should consider reinstating the definition of interoperable; decided not since interoperable is a subset of backward compatible
b. Section 4.4.1 – add a note stating statistics are gathered during steady state conditions
c. Delete contents of ‘Pri’ column for entire CC table
d. Section 5 (Impairments) – [ref 11-04-0239r0] IM6 change to “Effective loss due to all other unspecified PHY errors. Value 2 dB”
e. Straw Poll – do we want a 2 dB lumped impairment regardless of where it is specified (UM or CC) (e.g., represent I/Q imbalance, filter losses, …)? (Y=0, N=23)
f. Therefore proposed IM6 removed
g. [ref 11-04-0240r0] proposed a new IM6 as “The antenna configuration at both ends of the radio link shall be a uniform linear array of isotropic antennas with a separation of \( \frac{1}{2} \) wavelength, with antenna coupling coefficient = 0. All antennas shall have the same vertical polarization.”
h. Discussion
   i. Condition or impairment?
   ii. Accepted without exception
i. Impairments – where is ACI spec’ed; add to CCs after 67.2
j. Presentation – Bjorn Bjerke; Qualcomm; Simulation Effort Required to Satisfy the 802.11n Comparison Criteria” 11-04-0307r0
k. Estimated 22 days (24 hours per day) to simulate the PHY simulation without overhead
l. Straw Poll – “Do we add CC 67.3 to show simulated ACI performance?” (Y=4, N=38)
m. Does commenter object to eliminating CC67.3? Yes unless ACI can be recognized some other way
n. Commenter withdrew his comment
o. Comment relative to presentation formats was withdrawn
p. Comment - on ALL CCs? Closed by additional impairment previously introduced
q. CC51 – do we really intend to list ALL the data rates? No, Motion to change text accordingly
r. CC 67.2 – specify packet length at 1000B
s. 11-04-0209r2 on Offset Compensation reflecting conference call discussions
t. Move IM2 to a CC, a standalone simulation
u. This proposal also suggests 1000B packets
v. Discussion
   i. Let’s have an impairment free CC to test the algorithm and then add impairments which are implementation specific
   ii. Proposed text for CC 67.2
      1) Provide the impact on PER of carrier frequency offset and symbol clock offset by comparing to the PER achieved at the lowest average SNR that achieves a 10% PER for 1000 byte frames in channel E with no
carrier and symbol clock offset. The symbol clock shall have the same relative frequency offset as the carrier frequency offset.

Also, provide that same impact on PER using the highest average SNR possible for the proposed system in channel E.

The carrier offset difference at the receiver relative to the transmitter shall range from -40ppm to +40ppm. The results shall be presented in such a manner that it is clear whether there are specific values of offset for which the proposed system has better or worse performance relative to no offset.

iii. Proposed Text for new replacement for IM 2

1) Simulations for all comparisons except Offset Compensation shall be run using a fixed carrier frequency offset of –13.7 ppm at the receiver, relative to the transmitter. The symbol clock shall have the same relative frequency offset as the carrier frequency offset. Simulations shall include timing acquisition on a per-packet basis.

a. Straw Poll – Do you favor a range of offsets in CC67.2 (2)

or

Two fixed offsets at the extrema (20)

b. Straw Poll – to adopt IM2 as proposed (11,0)

c. Returning to text of CC67.2, consider the following changes in green

i. Provide the impact on PER of carrier frequency offset and symbol clock offset by comparing to the PER achieved at the lowest average SNR that achieves a 10% PER for 1000 byte frames in channel E (NLOS) with no carrier and symbol clock offset. The symbol clock shall have the same relative frequency offset as the carrier frequency offset.

Also, provide that same impact on PER using the highest average SNR of 50dB possible for the proposed system in channel E (LOS).

The carrier offset difference at the receiver relative to the transmitter shall be -40ppm and +40ppm. The results shall be presented in such a manner that it is clear whether there are specific values of offset for which the proposed system has better or worse performance relative to no offset.

d. Returning to Proposed Text for new IM 2 as:
i. Simulations for all comparisons except Offset Compensation shall be run using a fixed carrier frequency offset of –13.7 ppm at the receiver, relative to the transmitter. The symbol clock shall have the same relative frequency offset as the carrier frequency offset. Simulations shall include timing acquisition on a per-packet basis.

ii. IM2 - both comments withdrawn given new text

20. Chair recessed until 7:30 PM at 6:00 PM

Tuesday March 16, 7:30-9:30 PM

21. Chair reconvened meeting at 7:35 PM
   a. Continued with discussion of IM2
      i. Straw Poll – Do we want to use frequency offset in Hz for carrier offsets or in ppm? Hz (2); ppm (18)
      ii. Change -13.7 to -13.675 without objection
      iii. Straw Poll – Modify IM2 and IM3 as proposed by Colin Lanzl and Richard Williams (Y=18, N=1)
   b. CC11 – add text “None required” to all CCs with a blank entry in the simulation scenario column. Was accepted without objection
   c. CC11 – remove interoperability reference
   d. Change title of section 4.3 to Backward Compatibility
   e. CC11 – include .11g as well as .11a was accepted without objection
   f. CC15 – change to “Report the following measurements” and delete formulas was accepted without objection
   g. CC18 – enumerate the scenarios which are being considered namely scenario 1,4,6,9 and 11. Note the goodput is measured with QoS flows turned on; accepted without objection
   h. CC18 – ‘Count backward TCP ACK flows as non-QoS flows’ was accepted without objection
   i. CC18 – remove scenarios 9 and 11 from CC18
      i. Straw Poll – Keep 9 and 11 in none (10), one (3) or all (7) of the CCs
   j. Remove scenarios 9 and 11 from the entire document
   k. CC18,19 – remove one of the metrics columns was accepted without objection
   l. CC18 – remove mandatory
      i. Straw Poll – “Do we want to report statistics in addition to those reported in CC20” (Y=1,N=25)
   m. CC20 – do we need to separate ‘uplink’ and ‘downlink’ flows and DLP flows? ‘No’ based on Straw Poll
      i. Straw Poll – “Should CC24 be removed” because base numbers are more valuable than aggregate efficiency measure. (Y=9,N=19) so CC24 will be kept
   n. CC24 – how should efficiency be measured?
      i. Straw Poll – Should the definition of average rate in CC24 be amended as proposed by Sanjiv (17,0)
      ii. Straw vote – Alternative #1 i.e., including PLCP overhead (14) or Alternative #2 i.e., excluding PLCP overhead (6)
22. Session recessed by chair until tomorrow at 1:30 PM

**Wednesday March 17; 1:30-3:30 PM**

1. Chair reconvened the meeting at 1:35PM
2. Adrian resumed leading comment resolution of FR and CCs
3. His plan for the day 11-04-261r1
   a. Changed format of comment resolution doc from word doc 11-04-0242 to excel doc 11-04-343r1
   b. Current status of comment resolution in total:
      i. CCs – resolved 40, open 53, withdrawn 3
      ii. FRs – 7 resolved, 4 open, withdrawn 1
      iii. UM – 18 resolved, open 46, withdrawn 0
      iv. Summary - resolved 65, open 103, withdrawn 4
      v. Total = 172
   c. Finish FRs and then consider CCs
4. Consider Functional Requirements (doc. 11-03-0813r11)
   a. FR4 - define interoperable and backward compatible; closed as a result of removing Interoperable from FR doc yesterday
   b. FR 5 – as FR4 above
   c. FR7 – change “options” to “amendment” in order to show that TGn is indeed built on the baseline that includes .11e
   d. This concludes comment resolution of FR 11-03-0813r12
   e. **Motion by Colin Lanzl and seconded by Bjorn Bjerke to accept doc. FR 11-03-0813r12 as the Functional Requirements document for TGn passes (29,9,23)**
   f. Discussion
      i. What was resolution of motion tabled related to mandatory vs option meaning in FR doc?
      ii. Chairs answer – it remains tabled as it was not resolved before FR acceptance vote
      iii. What time conditions are in play relative to voting? Chair responded that condition is that the latest revision has been on the server for 4 hours and that all changes are made in session so no additional time is necessary
5. Consideration of Comparison Criteria (doc. 11-04-0812r18)
   a. CC11 – too broad;
      i. Resolution – Add “and 802.11g” after 802.11-1999 (rev 2003) and “if any” and after
      ii. Comment – as written it assumes backward compatibility with .11b and .11a
   b. Comment – add a separate Mandatory/Optional column?
   c. Straw Poll – Should we add a column to the CC document containing the heading mandatory/optional and add the word “mandatory” to each CC in that column? (Y-27,N-22)
d. Discussion – question poorly phrased

e. Motion to recess for 10 minutes by Adrian Stephens and seconded by Colin Lanzl in order to edit the document to add the Mandatory/Optional column passed (23,16)

f. Meeting recessed at 1:35 PM

g. Reconvened by chair at 1:50 PM

h. Chair noted that
   i. Voting will be procedural
   ii. Not everyone has been able attend the conference calls
   iii. We do need to make progress
   iv. The CC doc has NOT been accepted by vote
   v. There is still disagreement on the mandatory/optional vote

i. Straw Poll proposal – “Should we add a column to the CC document containing the heading mandatory/optional and add the word “TBD” to each CC in that column? Passed (33,19)

j. Discussion on wording paragraph 1.4
   i. Straw Poll – Who would be in favor of deleting the entire section 1.4? passed (34,10)
   ii. Section 1.4 was removed
   iii. Editor recommended proceeding with comment resolution and then discuss M/O for each CC in order; the body agreed (40,0)

k. CC15 – OK, closed

l. CC18 and 19 – OK, closed

m. CC19 – eliminate 3,6 and 11; only 1,4,6 remain; 6 offers VoIP scenarios

n. Straw Poll – Should we remove simulation scenario 6 from CC19? (32,15)

o. CC20 – too many scenarios; remove 3,6,11; type of traffic not relevant; scenarios were meant to stress proposals; these scenarios do represent the three markets

p. Straw Poll – Should we remove simulation scenario 6 from CC20? (38,15)

q. CC24 – remove? Already had this debate and voted to retain and change definition of average rate.

r. Returned to discussion of Alternative #1 as definition of average rate.
   i. Restrict to “data” MPDUs
   ii. No, management frames (RTS, CTS) are should be included
   iii. IP ACK frames are considered as data
   iv. Amend definition of goodput to reflect

6. Session was recessed by Chair until 4:00 PM at 3:33 PM

Wednesday 3-17; 4:00 – 6:00 PM

7. Continue with discussion of CCs
a. Returning to the definition of MAC efficiency = goodput/simulation time defined by Sanjiv
b. Straw Poll – Should we accept the definition of average physical layer data rate as displayed on screen? (26,0)
c. CC42 – remove “Results should include analysis performed on the transmit waveform independent of any channel model”
   i. Discussion
      1. add “any” in front of analysis
      2. preamble serves too many different functions
      3. perform analysis independent of channel model
   ii. Straw Poll – remove “Results should include analysis performed on the transmit waveform independent of any channel model” (Y=28,N=8)
d. CC42 – remove “Summarize the important properties of each part of the proposed preambles”
   i. Discussion
      1. No one in favor of comment; comment was rejected
e. CC50 – remove
   i. Discussion
      1. No one spoke against his proposal and it was accepted
f. CC52 – Add “List the spectral mask req’ts for each channelization of the proposal” and remove the first sentence
   i. Discussion
      1. No one spoke against and the comment was accepted
g. CC59 – run with “frequency offset compensation unit shall be switched off or turn impairments off. Perfect timing acquisition and perfect frequency acquisition and perfect channel estimation shall be considered. No phase noise modeling is required”
   i. Straw Poll – “Define impairments to be used for each CC separately in the “simulation scenario” (33,3)
   ii. Straw Poll – “Should we define the impairments to be used for all CCs now or later in conjunction with the ‘optional/mandatory’ decision?” (Now-0, Later-32)
h. CC 59 – Simulations should use a set of at least 3 representative antenna configurations including 2x2. Averaging should occur over a minimum of 100 packet errors down to 1% PER
   i. Discussion
      1. Have at least one common antenna configuration such as 2x2
      2. No impairments are to be used
      3. Lets leave it open; after all a SISO system may be proposed
      4. Exclude “at least 3”
      5. MIMO is not a given!!
   ii. Straw Polls – Do we need any antenna configuration requirement in CC59? (Y=8,N=38)
   iii. Agreed to delete ‘antenna configuration text’ in CC59
iv. Straw Poll – Results reported for CC59 & CC67.x should include the following antenna configurations in common (Some constraint=17, No constraint=28)
v. Note - Antenna spacing is included in one of the impairment
vi. Replace ‘1000B packets’ by ‘PSDUs of length 1000B’ in CCs 59, 67, 67.1 and 67.2.

i. CC67 – remove “in – 10 dB signal bandwidth” and define SNR
   i. Discussion
      1. Define SNR in an IM or separate Definition
   j. Definition of SNR – “The SNR is defined as the ratio of the signal power in the aggregate of the -10 dB signal bandwidths divided by the noise power in the aggregate of the -10 dB signal bandwidths” was accepted

k. CC6 – remove
   i. Discussion
      1. What do we mean by complexity?
      2. Straw Poll – Keep CC6 or delete (keep=29, delete=21)
      3. Decided to keep

l. CC67.1 – proposal in 11-04-0214r2
   i. Discussion
      1. Take it off line

m. CC67.1,2 – let’s use a single CC with 3 impairments and not have one for adaptive and one for non-adaptive (doc. 11-04-0302r2)
   i. Discussion
      1. Take it off line

n. Comment Resolution Status (Total=172)
   i. CC – closed 60, open 21, withdrawn 4, declined 4, deferred 1, duplicate 1; Total CC = 96
   ii. FR - closed 11, open 0, withdrawn 1, declined 0, deferred 0, duplicate 0; Total CC = 12
   iii. UM - closed 18, open 46, withdrawn 0, declined 0, deferred 0, duplicate 0; Total CC = 64

8. Session recessed by Chair until tomorrow at 8:00 AM at 6:03 PM

Thursday March 17, 8:00 – 10:00 AM

1. Chair convened session at 8:04 AM and turned control of meeting over to Adrian
2. Adrian presented status doc. 11-04-0261r1
3. Continue with CC comment discussion
4. 11-04-0343r2 is latest comment doc and is on server
   a. CC67 & 67.1 – text proposed to merge the two CCs was presented and will be put on server
      i. Proposed text in 11-04-0397r0 is as follows:
This document presents text that merges the intent of CC67 and CC67.1. Propose to use as a replacement for CC67, and to remove CC67.1.

Show either or both of the following two sets of performance curves:

1.) Show the PER curves for 5 supported data rates representative of your rate set including your maximum and minimum rates. If the proposal supports fewer than 5 data rates, all supported data rates should be shown. Plot PER versus SNR averaged over time per receive antennas for PSDUs of length 1000B. Averaging should occur over a minimum of 100 MPDU errors down to 1% PER.

2.) Show curves for both achieved average physical layer data throughput and PER, as a function of total SNR for 1000B PSDUs. These results should be generated with a rate selection algorithm active. Data throughput is defined as the total number of bits successfully received in the data portion of the PPDU, divided by total transmission time, not including overheads such as preamble and backoff. The throughput shall be averaged over at least 100 independent realizations of the channel. PER is computed by averaging over a minimum of 100 MPDU errors.

Total received signal power is summed over all transmit antennas. Each packet should use an independent channel realization. There shall not be any a priori knowledge of the channel at the receiver. This should be simulated for channel models B, D, and F. The simulations should all include the Doppler affect as specified in the text of the channel model document. All models should be run without the fluorescent affect but additionally model D should be run with the fluorescent effect on the highest data rate. The shadowing variance should be 0.

These simulations are performed using the NLOS version of the specified channel models.

   i. Discussion – purpose was to unify CC67
   ii. Straw poll – replace C67 and CC67.1 with the text above in the proposal 11-04-0397r0 (Y=26,N=0)
   iii. Does “These results should be generated with a rate selection algorithm active.” mean the rate of adaptation must now be included in the simulation? A – not explicitly
   iv. Straw Poll – should we delete the second part of CC67 (related to rate adaptation) (Y=6,N=23)

b. CC67.2 – change 1% to 10% and include NLOS and LOS and 50 dB and -40 ppm and +40 ppm as in 11-04-0209r3 as:

   Provide the impact on PER of carrier frequency offset and symbol clock offset by comparing to the PER achieved at the lowest average SNR that achieves a 10% PER for 1000 byte frames in channel E (NLOS) with no carrier and symbol clock offset. The symbol clock shall have the same relative frequency offset as the carrier frequency offset.
Also, provide that same impact on PER using the highest average SNR of 50dB possible for the proposed system in channel E (LOS).

The carrier offset difference at the receiver relative to the transmitter shall be -40 ppm and +40 ppm. The results shall be presented in such a manner that it is clear whether there are specific values of offset for which the proposed system has better or worse performance relative to no offset.

i. Discussion:
   1. Straw Poll – Add a note that the simulations would be performed under the same conditions as those in CC59, 67 (Y=18, N=9)
   2. Really Two parts – 1) antennas and 2) IM6
   3. CC59 does not allow for antenna config to be specified

ii. CC67 – Add a simulation using LOS channel model
   i. Discussion
      1. Keep it simple
      2. Need LOS simulation
      3. Straw Poll – Use LOS for one of the channel models for CC67? (Y=12, N=30)

iii. CC7 – remove this CC
    i. Discussion
       1. Straw Poll – remove CC7 (Y=16, N=26)

iv. CC7 – add 802.11i to the CC
   i. Discussion
      1. favor of leaving ref. to .11e
      2. Straw Poll – should we refer to any unpublished amendments in CC7? (Y=13,N=33)
      3. change wording of CC7 to “implementations of 802.11-1999 (rev. 2003) and published amendments” was accepted

   ii. CC80 – clarification of “802.11 legacy PHY” and what aspects of the ‘PHY’
       1. Discussion
          a. Add “compared to the 802.11a/g PHY”
          b. Going back over old ground
          c. Straw Poll – change CC80 as follows “Give a summary description of changes to a legacy 802.11a/g PHY. Give references to sections in your specification the give the complete details.” (Y=0,N=8)

   iii. CC9 – delete or fix by adding “give an indication of receive power consumption relative to current .11a PHYs”
        1. Straw Poll – “Add to CC9 an indication of receive power consumption” (Y=13,N=11)
        2. Straw Poll – “Make receive power consumption relative or absolute” (relative=16, absolute=13)
3. Straw Poll – “delete CC9?” (Y=36,9)  
4. CC9 deleted  
5. Impairment Discussions  
   i. IM1 – Change to “Specify the PA backoff from full saturation calculated as PABackoff = -10 log10(Average TX Power/Psat) used in the simulation” accepted as editorial  
   ii. IM1 – what is the point of this IM? Clarification is needed  
      1. insert “output power” between ‘PA’ and ‘backoff’?  
      2. Add note – “intent of this IM is to allow different proposals to choose their output power operating points”  
      3. Does -10log10(average TX Power/Psat) apply per antenna?  
      4. Refer ‘way’ back to 11-00-294 relative to backoff or compression point  
6. Chair recessed until 10:30 AM at 10:01 AM  

Thursday Mar 18, 10:30 – 12:30  

7. Meeting convened by chair at 10:31 AM  
8. IM discussions cont’d  
   a. Return to clarifying IM1  
   b. Caucus results – defer until look at next comment  
   c. IM1 comment maximum power in band allowed not clear  
      i. Discussion  
      1. Proposal to delete Psat statement and add –  
         “To make a fair comparison between all proposals everybody has to use the same total transmit power and EIRP. The total TX power shall be 40 mW. The maximum antenna gain shall not exceed 6 dB in any 1 MHz of bandwidth. (This is according to the FCC regulations in the 5.15-5.25 GHz band.)”  
         Specify the EIRP. This shall be no more than 22 dBm.  
         Specify the total TX power, this shall be no more than 17 dBm.  
         The maximum antenna gain shall not exceed 6 dB in any 1 MHz of bandwidth. (This is according to the FCC regulations in the 5.15-5.25 GHz band.)  
   2. Straw Poll – Accept “Specify the EIRP. This shall be no more than 22 dBm. Specify the total TX power, this shall be no more than 17 dBm.” (Y=34, N=6)  
   3. Psat still needs to be specified
March 2004

a. Discussion
   i. We are trying to specify the nonlinearity of the PA (RAPP model which includes Psat)
   ii. Since we have total power why not have proposer state what Psat is used in the proposal
4. Straw Poll – do we need to define in IM1 a particular Psat value (Y=14,N=17)
5. Should disallow the use of arbitrarily large Psat values
6. Straw Poll – re Psat (disclose in IM1 or limit here or elsewhere in CC=50, do nothing=0)
7. Straw Poll – should we disclose Psat in IM1 (51,1)
8. Straw Poll – Should we require limitation of Psat here or elsewhere (Y=5,N=27))
9. RAPP model only needs P specified
10. Straw Poll – does RAPP model include both P and Psat? (Y=37,N=1)
11. Straw Poll – should all the RAPP model parameters (P and Psat) in IM1 be disclosed by the proposal
    and not specified in IM1? (Y=26,N=0)
12. Decision to add “Disclose the P-parameter value used. Disclose the Psat value used per PA”
13. Straw Poll – recommend using the values of P=3 and Psat=25 dBm in IM1 (Y=24,N=12)
14. Decision to add – “Note: values P=3 and Psat = 25 dBm are recommended”
15. Straw Poll to add – “The same values for P and Psat shall be used for all relevant CCs?” not completed
16. Decision by body to form an ad hoc at lunch to decide on working for IM1 to be used at the 1:30
    meeting to clear up the IMs

d. IM4 language proposal (11-04-0224r1)
   i. Discussion
      1. Based on ‘pole – zero’ Phase Noise PSD filter model
      2. Debatable points are plateau and base values
      3. More aggressive or less aggressive?
      4. Straw Poll – should phase noise be modeled at both TX and RX (Y=37,N=0)
      5. Decision – a note will be added “this IM is modeled at both the transmitter and receiver”
      6. Straw Poll – should the Phase noise plateau be -100dBcarrier/Hz (current CC) or -94dBc/Hz (Colin)
         (current=28, new=3)

e. IM5 – delete?
   i. Discussion
      1. Which CCs should it be applied to
      2. Does noise figure make sense
      3. Does it make sense given the IM1 discussion?
      4. Defer

9. Return to Deferred CCs
   a. CC59 – deferred to IM discussion
   b. CC67 – deferred
10. Start discussion of Mandatory/Optional CCs and simulation scenario/IM columns
   a. CC2 – no impairments, M
   b. CC3 – none, M; ****
   c. CC6 – none, straw poll – M=26, O=34
   d. CC7 – none, O

11. Chair recessed session until 1:30 PM at 12:30

**Thursday, March 18, 1:30 – 3:30 PM**

12. Chair called session to order at 1:32 PM
13. Chair outlined plan for the afternoon
   a. First hour on CCs
   b. Last hour on time line and prep for May meeting

14. IM1 Sub-committee Recommendation
   a. Keep P=3
   b. Remove a fixed spec on Psat to accommodate multiple antennas
   c. Calculate backoff as the output power backoff from full saturation: PA Backoff = -10log10(Average TX Power/Psat)
   d. TX limited to 17 dBm
   e. Disclose a) EIRP and how it was calculated b) PA backoff c) Psat per PA
   f. Note: the intent of this IM is to allow different proposals to choose different output power operating points.
   g. Note: the value Psat = 25 dBm is recommended
   h. Straw Poll to accept new IM1 (Y=37, N=2)

15. Delete “These impairments are to be used in section 4.5.” at start of Section 5 as no longer applicable
16. Continuing discussing Mandatory/Optional CCs and simulation scenario/IM columns
   a. CC11 – none, Mandatory
   b. CC17 – none, M
   c. CC18 – 1-6; 1,5,6;1,5? Straw Poll – (1-6=8; 1,5,6=16;1,5=12); Straw Poll – (1,5,6=34; 1,5=14) so 1,5,6; M
   d. CC19 – same as CC18; M=28, O=29 so Optional
   e. CC20 – same IMs as CC19&18; M=39, O=21 therefore Mandatory
   f. CC24 – same IMs as 18,19,20; M=33,14 therefore Mandatory
   g. CC27 – 1,5,6 as a good compromise; 1-6 for more realism; none; Straw Poll – (1,5,6=31; 1-6=26; none=3); Mandatory
   h. CC28 – same as for 27; mandatory
   i. CC46 – none, mandatory
   j. CC47 – none, mandatory
   k. CC51 – none, mandatory
   l. CC42 – none, mandatory
m. CC51.5 – none, M
n. CC52 – 1 need at least 1; 1&4 phase noise and PA; Straw poll – (1=25; 1,4=18); mandatory
o. CC58 – same as CC18; M
p. CC59 – none since perfect channel assumed was majority; 1,2,4,5 was minority; M
q. CC67 – 1-6; M
r. CC 67.2 – 1-5; Mandatory=30, Optional=19 so Optional
s. CC80 – M

17. IM7 – is not used so let’s remove; removed
18. Control turned back to Chair to discuss Planning
   a. Timeline 11-04-0381r2
   b. Recall selection criteria 11-03-0665r9
   c. Key points from Selection criteria
      i. Can be changed with 75% approval
      ii. Proposals classified as Partial or Complete
      iii. Presentation – 60 min.
      iv. Presentations posted 30 days prior to presentation
   d. CFP->Intent to Present->Post Presentation->Presentations
   e. Option 1: Presentations in July => CFP Monday after May session; Letter of Intent May 24; post June 11, present in July
   f. Option 2: Bias to “time to Review” – 30 days for Intent, 30 days for prep and post, 50 days for review; Sept 20 Presentation
   g. Option 3: Bias to “Presentation prep time” – 30 days for Intent, 50 days for prep and post, 30 day for review; Sept 20 Presentation
   h. Intent to present event is for planning purposes to allocate time etc.
   i. Straw Poll – Begin presentations in July (19); Begin presentations in Sept (54)
   j. Chair addressed ‘Request additional times’
      i. Could use, on an ad hoc basis, this room at 4:00PM; very few indicated they would be available
      ii. .11e and .11i will be holding an interim in April; should .11n participate; very few indicated they would be available
      iii. FRCC conference calls will continue between March and May
   k. Goals for May session
      1. Complete and approve CCs
      2. Complete and approve UMs
      3. Confirm Time Line
      4. Issue Call for Proposals
      5. Receive Presentations
19. Returned control to Adrian and discussion of CCs
   a. Straw Poll – since all comments have been addressed should we vote on approving the doc now or wait until May to allow time for review
      i. Delay until May meeting (64)
      ii. Vote now (14)
   b. Proposal for using FRCC telecom time (next one scheduled is Tuesday April 6)
      i. UM resolutions
      ii. Look for FRCC inconsistencies
      iii. Propose resolutions
      iv. Address editorial inconsistencies
      v. Plan for May
   c. Final Comment Resolution Status (Total=172)
      i. CC – closed 79, open 0, withdrawn 4, declined 10, duplicate 3; Total CC = 96
      ii. FR - closed 11, open 0, withdrawn 1, declined 0, duplicate 0; Total CC = 12
      iii. UM - closed 18, open 46, withdrawn 0, declined 0, duplicate 0; Total CC = 64
   d.
20. Chair adjourned meeting at 3:29 PM
Minutes of the last meeting (Vancouver) were addressed and approved without changes.

Agenda was reviewed. An item was added to discuss whether the WAVE work should be done as an 802.11 standalone document (e.g., 802.11P) instead of an 802.11 amendment (e.g., 802.11p).

Lee presented the WAVE timeline showing its interactions and involvements with other groups.

Broady Cash delivered an overview of the lower layers portion of the WAVE activity. Among items reviewed were:

1) Allocation of the required bandwidth by FCC (the ‘5.9 GHz band’) with emphasis on the recently-released FCC Report and Order 03-324.
2) Status of the current ASTM PHY document (ASTM E2213). This document is not available on the server because it is currently a copyrighted ASTM document. Broady indicated that, a few years ago, an agreement was made between ASTM and IEEE to allow E2213 to be written within ASTM in a format similar to an amendment to 802.11a. With the move to IEEE, the document is being formally converted.

Andrew Myles presented an argument for making the WAVE product a standalone document instead of an 802.11 amendment. He contends that it is inappropriate for the WAVE PAR to define the proposed work as an amendment. The 802.11 family has become very complex and continues to get more complex. There is danger of collapse. The application space is quite different from what 802.11 does today. The integrity and stability of 802.11 for WAVE applications are unproven. Andrew contends that the goals of WAVE can still be achieved by changing the PAR to specify a standalone standard and he strongly recommended that approach. Further, he contends that the WAVE document will be more readable if standalone.

Tom Scalfnit reminded the group that there were many reasons for coming across from ASTM to IEEE and most related to perceived advantages of being an 802.11 amendment.

Lee Armstrong stated that he has talked with Stuart Kerry about this issue. Stuart would support either approach. It was noted that there are some advantages of being standalone. Most relate to the critical review of a standalone vs amendment approach. Fewer critics are anticipated in reviews of WAVE if we move toward a standalone document.

Numerous questions were raised and discussed. Most were related to understanding the differences between these approaches, both at the time of initial approval and over time as updates are needed, both for basic 802.11 and for
WAVE. Despite some expressed fears about the documents eventually drifting apart, no one was able to give an example of situations where this had happened to any degree that created a problem.

Concern was expressed about the need for WAVE devices to have a long, stable lifetime (perhaps 20 years, the life of an automobile) whereas ‘conventional’ 802.11 wireless LAN equipment is replaced frequently and does not need the same long-term stability. Andrew stated that this was another argument for creation of a standalone WAVE document.

Dick Schnacke stated that many WAVE devices are envisioned to also include a ‘standard’ 802.11a operating mode. A WAVE device so equipped would operate in WAVE mode when its parent vehicle is in motion and could shift into 802.11a mode when that vehicle is at rest. The ramifications of having one operating mode inside the 802.11 family and the other as a standalone document were debated, but no conclusions were expressed.

This subject will be re-raised at the next WAVE session tomorrow morning, to give members a chance to think about the arguments raised tonight.

Next topic was a suggestion that the name on our PAR should be changed from WAVE to WAITS (Wireless Access for ITS). The WAVE acronym, in some minds, is equally applicable to the work of 802.20. The group expressed a strong preference for its use of the WAVE acronym, stressing that we are 802.11 Wireless Access in the Vehicle Environment.

Knut Evensen gave a brief report on ETSI ERM TG37 activities in Europe. ETSI is European Telecomm Standards Institute, responsible for electromagnetic compatibility and radio spectrum matters in Europe. TG37 is Intelligent Transportation Systems. They address cellular systems as well as all other radio system PHY and MAC issues. Several new Work Items were just adopted by TG37, including a 5.9 GHz PHY. ETSI is eager to work on these issues cooperatively with IEEE.

The ETSI 5.9 GHz Work Item includes an initiative to procure spectrum similar to what has been granted in the US. Applications include both vehicle-to-roadside and vehicle-to-vehicle communications. Information is available at www.etsi.org and search for ERM and TG37.

Wayne Fisher introduced the topic of converting ASTM E2213-03 to IEEE 802.11x Format. Most changes will be additions. Wayne scrolled quickly through parts of the document to describe the types and magnitude of changes required. This was a precursor to the more detailed review scheduled for tomorrow’s WAVE sessions.

The meeting was adjourned at 9:25 PM.

Wednesday, March 17, 2004

Lee Armstrong convened the meeting at 8:10 AM.

Wayne Fisher resumed a detailed review of the draft WAVE document. The review consumed most of this WAVE session. Several questions were raised, primarily relative to the relationship between what WAVE is proposing and other existing and planned 802.11 variants. There was significant discussion of allowed power levels and emission mask characteristics, relative to conventional 802.11 values, but this discussion was philosophical and no technical changes were proposed.

Some discussion related to the manner of moving the document forward, resolving differences of opinion, etc. Lee made it clear that the group is only doing document familiarization and review at this point. This is not yet a formal review and commenting activity.

A number of selected WAVE parameter values were questioned. Several received a detailed discussion, but no changes were formally proposed. Certain bit counts and codings were questioned, but not formally changed.

Knut Evensen gave a presentation on global spectrum management requirements for WAVE. Spectrum around 5-6 GHz is heavily used around the world, including military users, since it has good propagation characteristics. For
LAN-type services, Europe has HiperLAN and BRAN, Japan uses the ‘j band’ for a variety of things and in North America there are the U-NII and DSRC bands. There is also a large ISM allocation in this spectrum. ISO TC204 WG16 CALM M5 is the international equivalent of the 5.9 GHz DSRC work in North America. CALM M5 is pursuing a global band allocation paralleling the North American allocation of 5.85 to 5.925 GHz. The global situation is further complicated by national and regional requirements. Knut’s central message is that, if the WAVE solution is to be useful worldwide, the channelization scheme must be configurable.

Sam Oyama pointed out that spectrum issues are handled at the highest level by the ITU. Our work to achieve global allocation must begin there. Others pointed out that this is just the start of a solution, since after ITU allocation, the national and regional issues are still there.

Lee Armstrong announced that the 802.20 group has just passed a formal resolution asking the WAVE group to change its acronym from WAVE to something else, and suggested WAITS (Wireless Access for ITS). The resolution addresses ‘the appearance of overlap between the activities of the two groups.’ This must be addressed by a formal response from this group. The general feeling of this group is that our work is clearly differentiated from that of 802.20 and that the name is clear and problem-free.

Lee re-raised the issue of WAVE as standalone (P) vs amendment (p):
A straw poll was done to see what the sense of the group is:
In favor of WAVE being an amendment (p): 24
In favor of WAVE being a standalone document (P): 1
No opinion/Don’t care: 7
Daniel Jiang: Move to retain the status of the PAR as an amendment to 802.11 rather than creating a standalone document. Tom Schaffnit seconded. The vote on this motion was: 25-1-7

A straw poll was taken on the issue of a name change for WAVE. Results: Keep name: all, Change name: none. I.e., unanimous for retaining WAVE.

The meeting was adjourned at 10:05 AM.

Re-convene March 17, 2004

Lee Armstrong re-convened the meeting at 1:40 PM.

The benefits of having our WAVE amendment editorially follow the path taken by TGJ was debated. Of special interest was the issue of whether the amendment should be a separate 802.11 paragraph. The basic TGJ approach was supported in most ways, although it was reported that 802.11 editors may not be totally pleased with that approach. The sense of the group was to include the functionality of TGJ and TGH and make WAVE a separate paragraph in 802.11.

The point was also raised that WAVE access methodology (e.g., via a control channel) may be different in different parts of the world and we need to specify access in a manner that allows for this needed flexibility.

Lee Armstrong reviewed WAVE items covered in the mid-week plenary (this morning):
1) Lee Armstrong was formally elected as chair of the WAVE SG
2) The WAVE PAR will continue to reflect that we are an amendment to 802.11 (although this item may be raised again at Friday’s Closing Plenary)
3) The 802.20 resolution relative to changing the WAVE name was rejected.

Lee stated that it’s likely the WAVE SG will become the WAVE TG before our next meeting. It was acknowledged that Wayne Fisher will continue to act as WAVE document editor after this transition.

The WAVE SG developed a formal motion relative to the 802.20-proposed name change on our PAR. The ultimate product was:
Motion regarding Request for Name Change from 802.20, as follows:
Whereas:

- The name of the PAR “802.11 Wireless Access in Vehicular Environments” is considered an accurate and unambiguous description of the PAR subject and scope, and
While Intelligent Transportation Systems (ITS) services are a primary motivation for this PAR, the intended usage of the resulting standards extends to many applications outside the scope of ITS, and

- The PAR applies only to 802.11, and
- The name 802.11 Wireless Access in Vehicular Environments offers a distinct identity to this activity. It is the opinion of the 802.11 WAVE SG that the present PAR name should remain unchanged.

Acceptance of the above motion was moved by Broady Cash and seconded by Bob Serrano. Voting results were: 32-0-1

The meeting was adjourned for the week at 2:40 PM. The WAVE SG will not meet in its next scheduled session at 4PM.
Minutes for the Fast Roaming SG

Date: March 15-19, 2004

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Wednesday March 17, 2004
8:00am

Chair: Clint Chaplin
Secretary: Mike Montemurro

Attendance:

- Chair introductions
- Opening Remarks – Document 04/277r0
- Study Group operating rules and patent policy
- Review Agenda – 04/277r0
- Add presentations from Michael Montemurro and Areg Alimian
- No objections to the agenda
- No objections to minutes from January meeting.
- Need to extend the lifetime of the study group
- Document 278r0

MOTION: Request the IEEE 802.11 Working Group to extend the Fast Roaming Study Group for another 6 months.

  a) By: Keith Amann
  b) Second: Ivan Reede
  Discussion: None.

Result: Motion passes. Unanimous.

- Discussion on Document 04/376. Comments on Fast Roaming PAR from 802.21
- Document 04/351 Darwin Engwer, presentation addressing comments from 802.21
- “Fast BSS-transition” is the “least worst” name.
- Lets just pick this name and get on with it.
- Discussion on comments from 802.21

MOTION: Replace the term “roam” in section 12 of 11-03-0771-05-frfh-possible-par.doc with “BSS transition”, and delete the word “roaming” from the same section.

  By: Bob Love
  Second: Keith Amann
  Discussion:
March 2004

• Do we need to prefix it with “intra-ESS”? 
  “BSS transition” is already defined in the 802.11 (1999) standard. 
Result: Motion passes. 36-1-1

  • By: Bob Love
  • Second: Nancy Cam-Winget
  Discussion: None.
Result: Motion Passes. 41-0-4.

MOTION: Replace the first word “Enhance” in section 12 of 11-03-0771-05-frfh-possible-par.doc with “Enhancements to the”…
  • By: Ivan Reede
  • Second: Keith Amann
  Discussion: None.
Result: Motion passes. Unanimous

• Discussion on changes to purpose (see motion below)
• How does this change allow us to know when we’re done.
• The loosely defined scope statement will be expanded as part of the requirements defined by the task group.
• The term “user experience” is not precise.
• This is a change to the purpose, not the scope.
• How about just take out the “user experience” from the statement: “To improve the user experience during BSS transitions within 802.11 ESS’s and to support real time constraints imposed by applications such as VoIP.”
• Could we remove the statement “such as VoIP”? No objections.
• If we remove the example, we could end up having to solve problems that may have more stringent requirements than VoIP applications.
• Should we use the term “IP”, as in the VoIP?
• Stuart made a ruling on this. It’s unclear that his ruling applies to this case.
• If we said “voice”, we would simply

Straw Poll: Do we make the following changes to the purpose statement:
  a) Leave in application examples
  b) Take out application examples
  c) Don’t care
  Discussion: None

Straw poll: How many examples do we want to include
  a) 3
  b) Less than 3
  Discussion: None
Result: a – 3; b – 24.
• We should simply take the top two.

Straw Poll: What application types do we want to include?
  a) Voice in some form
  b) Video in some form
  c) Gaming
Discussion: None
Result: a – 39; b – 14; c – 4

- Do we remove video? Majority of participants raise their hand – not a formal straw poll.
- So, we are back to just using Voice as an example?

Straw poll: What wording do we use to include Voice?
- a) VoIP
- b) Voice
- c) VoWLAN
- d) Packetized Voice.

Discussion: None
Result: Unanimous. a – 22; b – 4; c – 13; d – 12.

MOTION: In 11-03-0771-05-frfh-possible-par.doc move the text that currently exists in section 13 to section 18, change “roam” and “roaming” to “BSS transition” and add headers to read:

Section 13:
A new set of WLAN applications are more sensitive to even momentary loss of connectivity during BSS transition (e.g. VoIP). With increasing amounts of state being needed before connectivity is allowed as amendments are made to the 802.11 standard, the time taken to complete a BSS transition is increasing while next generation applications demand decreased BSS transition time.

Section 12:
The scope of modifications is during the STA transfer from one AP to another (BSS transition). Determination of the need for a BSS transition, selection of which AP to BSS transition to (with the exception of the advertisement of the availability of fast BSS transition services to the STA), and determination of when to BSS transition are all outside the scope of this project.
As a design criteria, the proposed mechanism must accomplish this goal without compromising security or existing Station services

And add the following text to section 13 to replace the moved text:

“To improve the BSS transitions within 802.11 ESSs and to support real time constraints imposed by applications such as VoIP.”

- By: Ivan Reede
- Second: Bob Love

Discussion: None.
- “BSS transition” is already defined in the 802.11 (1999) std.
- Call the question. Ivan Reid

Result: Motion Passes. 37 – 0 – 3

- Stuart made a ruling on this. It’s unclear that his ruling could stand in this case.
- Presentation of document 04/286r0 – Michael Montemurro
- Slide 6:
  - Past history why cellular chose their architecture
  - Threat model may preclude that architecture
  - WLAN design has no ability for AP to discover STA
- Slide 7:
• have a bit more to do: characterize which part of state to move and which to not move during BSS transition

• Slide 12:
  • During state move: need to know how long AP will be around: contract for staying around
  • Preemptive and reactive elements needed

• Discussion:
  • Determination of when/where to roam is out of scope? Yes
  • Need to think about velocity of terminal.
  • Response to scope question: not sure how to make that determination; algorithms may be distributed, and a certain part may have to be forced into standard to avoid destabilization of those algorithms

  • Does scope allow us to change 802.11F, and also make MAC changes?
  • Can’t touch 802.11F, but scope allows us to change MAC
  • Scope also allows changes in PHY, but not sure if we can touch layer 2?
  • May need to send messages between APs; not sure how to do that within structure. May have to go to IETF.
  • We’re allowed to send messages that cause processes in Layer 3 to do what we want.
  • As of 1999, we were not allowed to address that area, but things have now changed, and we may be allowed to do that.
  • Suggest that we have at least one joint session between TGr and 802.21 per session?
  • Have some sort of solutions requirement bashing soon, before looking at metrics.

• Back to general discussion
• Do we discuss when to roam and roaming metrics?
• That’s out of scope for this PAR.
• We could ask 802.11k to define metrics for roaming?
• We shouldn’t do that because we don’t want to end up in lock step with 802.11k.
• What is the proper solution? We need to define the proper solution.
• Defining the number of PoP’s in an ESS would be good for roaming. That would be good for use but MESH is looking at that.
• If its “who” to roam to, its in scope. If its “when” to roam to, its out of scope.
• If we give too much flexibility, we will lose interoperability.
• What would the cellular industry be like if there weren’t standard mechanisms for roaming?
• Having proprietary algorithms hurts the interoperability.
• If we can’t solve the problem with the current PAR scope, the PAR can be changed.
• We are out of time. Postpone this discussion to our next session.
• Motion to adjourn. No objections.
Wednesday March 17, 2004
1:30pm

- Meeting is called to order
- Opening remarks
- Document 04/378r0 Roaming Interval Measurements, Areg Alimian
  - This test relies on a case of AP failure
  - AP Failure case is not a typical roaming case
  - This roaming case shows BSS-transition with bad equipment.
  - When you lose complete RF connectivity it is different from turning the AP off. If the AP is powered up, it still participates with the DS and interacts in the handoff scenario.
- Two tests: one with power-off and the other with an attenuator.
  - Power off is still a BSS-transition so that it should be still in scope.
- Document 04/377r0 – Analysis of Roaming techniques – Areg Alimian and Bernard Aboba
  - What is term “TCP Adjustment”? Moving TCP from low latency/high bandwidth – high latency/low bandwidth selection – this is a mobile IP effect
  - What is the effect of IKE? Typically it is dependent between the mobile agent and the home agent. There is also L4 delays from TCP adjustment
- How important is AP-Initiated handoff? Not really important. This just works today. PMK caching just works today.
- Call for other presentations? None
- How do we move forward? We should brainstorm on requirements and determine what’s in and out of scope.
  - By discussing requirements, let’s break down the problem and determine what we need to do.
  - If what we are doing today fits within our time budget, why does this group exist?
  - We may have this solved within existing standards. We could come up with a general solution that optimises BSS-transition and addresses any other new standard.
  - Improvements are in the realm of other Task Groups and layer 3 standards groups. Not sure what the purpose of what this group is.
  - Did Bernard’s study take into account WME? No
  - This group is important. This group can help define a solution that will enhance applications like VoIP.
- The methods of doing this now are not sufficient to take us into the future.
- It would be helpful to add to the MAC to enhance roaming and improve BSS-transition times.
- There are applications that aren’t available yet that may require changes to the MAC to facilitate fast-BSS transition.
- There were comments that CAPWAP was looking to solve this problem. The issue is that they are doing it in a different way. That’s impractical for a client vendor.
  - In security, as long as the key moves from one AP to another, you are done. There are many problems to solve. The issue is just one of the issues that we are looking for.
  - We should get a list of issues, evaluate them, and boil it down into an acceptable list.
  - Currently, the PAR scope statement limits our ability to address the problem. In disregarding them, we are not solving the problem.
- It’s time to start requirements brainstorming:
  - Candidate List
• “CAPWAP” switch/LWAPP movement of keys
• Pre-authentication
• Layer 2 prefix announcement for DNA
• Guarantee of QoS
• Measurement metrics
• Scanning and rate adaptation
• Pictorial solution architecture of roaming time contributions
• Hand-off problem space drawing
• Velocity determination – it’s a client documentation
• Defining Use Cases for what we want to solve
• Defining different applications
• Detection of necessity to BSS transition
• Faster beacon transition
• Movement of keys in general – “put keys in beacon”
• Consider the direction of the Authentication: mu->ap or ap->mu
• Traffic pattern research: measurement, detection, traffic results to entities (upstream, downstream, bi-directional)
• Transition time metrics and methodology
• Directed transitions
• Move the BSS with the station
• Radar scan for ITU/FCC requirements; compatibility with TGh in general
• Develop a complete set of performance requirements
• Client driven versus AP driven transition triggers
• Heterogeneous AP transitions (different manufacturers APs)
• Interoperability
• Survey what TGk is doing and determine what we can use and what to ask for
• Survey WPP and decide what we can use and what to ask for
• Heterogeneous capabilities on the AP
• Mobile AP’s; AP in elevator; pre-emptive roaming
• Wireless AP’s or repeaters
• Interaction with Mesh networks
• Interoperability with 802.21
• Survey of prior art for AP Management implementations
• Inter-AP communications
• Remove of open group secure mobile architecture
• Channel Map
• A lot of this is degenerating to policy issues – deployment and customer policy decisions
• Resource triggers
• Dynamic data routing through the DS
• Effect of path delay versus position
• Accumulation of propagation delay
• Subnet versus BSS considerations
• Billing issues; Accounting
• Heterogeneous network transitions; in scope?
• Resilience
• Tomorrow there is the CAPWAP issue to resolve in WNG – proposal to recess until then.
Thursday March 18, 2004
4:00pm

- Meeting called to order
- Some procedural motion that allow us to continue working

**MOTION:** Request the IEEE 802.11 Working Group to extend the Fast Roaming Study Group through the January 2005 meeting and forward to the Executive Committee.
- By: Ivan Reede
- Second: Bob Love
Discussion: None.
Result: Motion passes. 31-0-0

**MOTION:** Reaffirm the decision made at the January 2004 IEEE 802.11 Interim session by the Fast Roaming Study Group and the IEEE 802.11 Working Group, which was: Believing the PAR & 5 Criteria contained in the documents below meet IEEE-SA guidelines, request that this PAR & 5 Criteria contained in 11-03/771R5 (subsequently revised at the March 2004 IEEE 802 Plenary session by the SG and the WG as a result of WG comments and contained in 11-03/771R6) & 11-03/772R4 be posted to the ExCom agenda for WG 802 preview and ExCom approval (and subsequent submission to NesCom)
- By: Keith Amann
- Second: Nancy Cam-Winget
Discussion: None.
Result: Motion passes. 31-0-0

- Discussion on Document Number 04/394
- Continue with the brainstorming:
  - Add make before break
  - Provisioning
  - Differential or delay between consecutive packets or frames
  - Maximum last signal time without dropping the session
  - Packet through different AP
  - Guarantee delivery of data
  - Definition of “Fast” – if we are 1/3 of the time budget and the ITU recommends a maximum delay of 50 ms, then we should be looking to set our BSS-transition budget to be 15 ms or less.
- Updates to this document should be made as an ongoing document
- We should be choosing which requirements which we will look to solve first:
  - We should define “fast” first.
  - There could be a difference between receiving fast and sending fast.
- How do we move forward?
  - We should define the 15 ms as our goal.
  - 15 ms would be an aggressive target; we may not be able to meet it.
  - We should define the use cases associated with the BSS-transition target
  - We should not exclude a goal of a 0 roaming time
  - For instance, we could change the standard to be modified so that a STA could be associated with multiple BSS’s at the same time.
- We should not exclude a goal from a 0 BSS-transition time. Then it would be an instantaneous transition.
- The fast BSS-transition will be contingent upon availability of QoS resources at the new target/medium.
- It applies a requirement on system capacity.
- We should compare the “system capacity” for different proposals.
- Ultimately we will look at many requirements to compare proposals.
- What is the definition of “roaming” for this group? We are not solving “roaming”, we are talking about moving from one BSS to another BSS, within a single ESS.
- We are throwing up requirements that may be out of scope.
- Clever naming is always good, we should call this group Fast Inter-AP Transition (FIAT).
- The group has been chartered to look at BSS-transitioning – roaming has many meanings in other industries.
- In a virtual AP scenario, BSS-transitioning could be complicated.
- 802.21 handles transitions between different ESS, we are bound to solve transition between different BSS’s in the same ESS.
- We should have joint meetings with 802.21 at each session. In that way, we can divide the issues sensibly – perhaps we will need to address this issue.
- We need to discuss security consequences of BSS-transition, which may impact 802.1.
- We also need to discuss the definition of “fast”.
- The idea isn’t that we don’t solve these problems today.
- Do we need to include backward compatibility?
- We need to allow co-existence with older equipment.
- We need to establish what we need to do at the next meeting.
- We should establish BSS transition use cases.
- What is the entire process of a BSS transition – a tutorial, someone who’s in 802.11 that knows that interval.
- We should establish the process for BSS transition.
- We should look at 802.11n’s requirements work – is it really applicable?
- We should include all the standards: 802.11 (1999), 11i, 11e, 11F.
- Should we really include 11F?
- We need a concise tutorial on everything that exists today in the standards.
- If someone volunteers to do this, we may want to discuss the results of the work before.
- We need to update what goes on in the backend – that was presented in Document 04/377r0.
- Concern that security may be impacted with fast BSS-transitioning.
- Create a structure and timeline for the working group – milestones for when it will happen.
- Triage of the requirements brainstorming list.
- Should we go through the requirements before establishing the milestones? – The milestones are process while the requirements are technical.
- We need to establish a process, which will likely be standardized across the Working Group – the task groups will have process be imposed on them.
- The Bonneville tiger team is defining the process for how Task Groups operate.
- Will they impose timelines? No, they will only impose the mechanism.
- When can we expect proposals? Likely next March.
• TGn took a process where they nailed everything down beforehand before they heard proposals – other groups have taken a less structured approach to deciding on metrics as proposals are being evaluated.
• How did TGi do it? It started with authentication proposals which were formulated into the standard.
• Nothing says that we can’t do different tasks in parallel.
• Sometimes you find new metrics as you are evaluating proposals. We could take partial proposals and tie them together for the standard.
• Don’t want to eliminate proposals, want to take the best of multiple proposals.
• In some cases, it may not be a matter of metrics; it may be a matter of functionality.
• Performance is only one consideration.
• We should get the key requirements and move on the key ones.
• Want to move from key requirements to proposals quickly.
• The market has a need for this solution, we need a solution that is easy to implement.
• The solution we come up with may have multiple paths, multiple solutions for multiple cases.
• We could time-bound proposals and work to those dates.
• We don’t know our problem enough to set dates now.
• We need to take politics out of the process. That will not likely happen.
• We should try and lock in the process and associate dates with the milestones.
• We should address “Cost versus complexity”.
• Our use cases will determine cost, performance, security, etc.
• Will our solution block the solution of 802.21? If we do make then break, we will impact 802.1 as well.
• There are implications on what we are doing on the backend. We need to work with groups who could be impacted by our work.
• It’s important to list things we are going to do. We should have a map of applications and their maximum transition time
• In the use cases, we need to establish the environment.
• Any messages required for fast BSS-transition should be given priority on the medium – IETF routing protocols are given priority over other traffic.
• Adjourn for 7:30pm session.
Thursday March 18, 2004

7:30pm

- Call to order.
- Lets continue planning for next meeting
- Need to determine which organization to liaise with (IETF, 802.21, 802.1, etc.)
- Call for volunteers to get a head start on our work in the next meeting
- Groups to liaise with: Clint Chaplin
- Requirements: Jesse Walker, Nancy Cam-Winget, Bob Beach, Bob Love
- Use cases: Michael Montemurro, Jim Wendt, Keith Amann
- BSS Transition Architecture and Process: Keith Amann, Nancy Cam-Winget, Tom Maufer
- Plan of action is to come back in two months and present results at the May meeting
- So far there’s no process discussion and no market discussion.
- It would be good to bring customers to the meetings – If the customers are allowed to go to the meetings; they will drive us to complete standards quickly.
- We need to be proactive in getting customer feedback and support.
- What we are asking for may be not allowed under IEEE rules – we need a line in a press release that draws attention to the problem we are solving.
- None of us know what it is.
- We need to establish whether this group is working toward a 1, 3, or 5 year scope.
- How much time is the market going to give us to come up with the solution?
- Should we advertise in the Wi-Fi Alliance? Doesn’t work. IEEE is a public organization and Wi-Fi Alliance is a private organization. They need to operate separate.
- We have a liason is between IEEE and Wi-Fi alliance. Do we want to request something for Bill Carney?
- If we do something at this meeting, we are going to have to make a motion tonight and bring it before the plenary tomorrow.
- We are trying to over-formalize the process. We can go back to our sponsors and get direction and guidance.
- There’s already a group in Wi-Fi driving this. There are already things in place.
- Is there any other business to the group? None.
- Adjourn for the March meeting.
• Attendance for the Fast Roaming Study Group

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<tr>
<th>Jouni Malinen</th>
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<td>Mike Moreton</td>
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IEEE P802.11
Wireless LANs
ESS MESH Network Study Group Meeting Minutes

Date: March 18, 2004

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Abstract

Minutes and attendance of the Meeting of the IEEE 802.11 ESS MESH Network Study Group held in Lake Buena Vista, Florida, USA on Tuesday and Wednesday, March 16 and 17, 2004 under the SG Chairmanship of Donald Eastlake of Motorola Laboratories.

Contents

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Significant Actions
(For the detailed minutes, including these actions, see the next section of this document.)

Session I (Tuesday 7:30pm – 9:30pm)

1. Meeting called to order at 7:30pm by Donald Eastlake 3rd, ESS Mesh SG Chair.

2. Tyan-Shu Jou is appointed to be the permanent secretary of ESS Mesh SG unanimously.

3. Steve Conner is appointed with unanimously consent to be the technical editor of the SG.

4. Audience unanimously approved the previous (Vancouver) meeting minutes (11-04/0110r2).

5. No comments/questions received by the deadline (5pm Tuesday, March 16) on the SG PAR and the 5 Critical documents.

6. Motion: To request IEEE 802.11 Working Group to renew ESS Mesh Study Group in case PAR and 5 Criteria approved delayed.
   Moved: SG Chair, Donald Eastlake 3rd
   Second: Jim Hauser
   Result: Adopted by unanimous consent

7. Presentation by Steve Conner of Intel Corp. on “Architectural Considerations and Requirements for 802.11 ESS Mesh” (11-04/0319r0)

8. Presentation by Tyan-Shu Jou of Janusys Networks on “Technical Requirements for IEEE 802 ESS Mesh for 802.11 ESS Mesh” (11-04/0342r0)

Session II (Wednesday 8am – 10am)

1. Presentation by James Hauser of Naval Research Lab on “802.11 ESS Mesh Overview & Issues.” (11-04/0368r0)

2. Presentation by Peter Stanforth of MeshNetworks on “User Requirement for 802.11 Ad Hoc Networking.” (11-04/0371r1)

Session III (Wednesday 1:30pm – 3:30pm)

1. Presentation: by Narasimha Chari of Tropos Networks on “Interconnectivity Considerations and Usage Scenarios for ESS Mesh” (11-04/0383r1)

2. Presentation: by Kue Wong of Nortel Networks on “Process Considerations Helpful for Maintaining Extensibility of ESS Mesh”(11-04/0035r1)

3. Presentation: by SK Sung of Samsung on “Routing-related Frames” (11-04/257)

4. Presentation/Demo by Francis daCosta of Mesh Dynamics on “Multiple Radio” (11-04/272, 11-04/274)

Session IV (Wednesday 4pm – 6pm)
1. Future meetings / conference calls discussion
   a. Straw poll: Should usage model documentation and prioritization be a major objective for
      the May 802.11 Mesh Study Group meeting? Passed 42-2-3
   b. Straw poll: Should ESS definitions and possible high-level architecture discussions be an
      objective for the May 802.11 Mesh Study Group Meeting? Passed 56-1-9
   c. Straw poll on activity level before May Interim 802.11 meeting: A majority favored one
      teleconference. Tentatively there will be a teleconference set up on April 21st at Noon
      Eastern Standard Time for 1 to 1.5 hours.

2. Meeting adjourned at 4:52 pm by the Chair.

Full Minutes
(For a listing of just the significant actions, see the previous section of this document.)

Session I:

Date: 16 March 2004
Location: Salon VIII, Hilton Disney World Resort, Lake Buena Vista, Florida, USA.
Officer presiding: Donald Eastlake 3rd
Attendance: See end of minutes.

Meeting called to order at 7:30pm by Donald Eastlake 3rd, ESS Mesh SG Chair.

The Chair went through the IEEE-SA Standards Board Bylaws on Patents in standards and Inappropriate Topics for IEEE
WG meetings.

Reviewed policies and procedures of IEEE:
In a Study Group, any one who has paid registration can vote, make motions, etc., regardless of their 802.11 voting status, all
motions must pass by 75%. This meeting will count towards attendance. If you are aware of any patents in our area, you must
bring them to the attention of the WG chair. No licensing, pricing, territories, litigation or threatened litigation, can be
discussed, Please object to these and bring to the attention of the chair.

Attendance recording reminded

The Chair went through the SG agenda (11-04-0280-02-0mes-mesh-agenda-march-2004) for this week. The agenda is
adopted by unanimously consent. [This document was updated during the meeting ending in document 11-04/280r5.]

Tyan-Shu Jou is appointed to be the permanent secretary of the ESS Mesh SG with unanimous consent.

Steve Conner is appointed to be the tech editor of the SG with unanimous consent.

Audience unanimously approved the previous (Vancouver) meeting minutes (11-04/0110r2)

No comments/questions received by the deadline (5pm Tuesday, March 16) on the SG PAR and the 5 Critical documents.

The Chair mentioned most likely ESS Mesh Study Group will not be a Task Group until July.

Motion: To ask 802.11 to renew ESS Mesh Study Group in case PAR and 5 Criteria approval delayed
Proposed: SG Chair, Donald Eastlake 3rd
Second: James Hauser
Adopted by unanimous consent
Presentation:
Steve Conner, Intel Corp
“Architectural Considerations and Requirements for 802.11 ESS Mesh”
(IEEE 802.11-04/0319r0)

Vijay Patel: Mesh SG should take a look at the mobility requirement for US Defense and the related work
Steve Conner: The related discussion is in WAVE SG, the to-be 802.11p group.

Tricci So: Using Ad-hoc mode on APs should be able to fit the requirement of ESS Mesh
Steve Conner: there are several advantages on using WDS frames, and it is mentioned in the PAR.

James Woodyatt expressed concern about TCP fairness on mesh networks.
Steve Conner: QoS on various frames can be worked on later by the group.

Presentation:
Tyan-Shu Jou, Janusys Networks
“Technical Requirements for IEEE 802.11 ESS Mesh Networks”
(IEEE 802.11-04/0342r0)

James Hauser: Broadcast MUST be supported. Mesh nodes need to know the location of STAs but that can be pro-
active or reactive.

Bob Moskowitz: Security requirements between ESS mesh nodes are the same as being considered by 802.1af for
interface between bridges.

Steve Conner: the Path Forwarding Protocol can be at Layer 2, Layer 2.5, but not at Layer 3 according to the PAR
(To utilize WDS communicate with each other).
Tyan-Shu Jou: Technically agreed layer 3 solution is not preferred, but the PAR doesn’t apply limitation on it. Layer
3 packets can be encapsulated inside WDS 4-address format frames.

Juan Carlos Zuniga: Please clarify “Communication between STAs of the same ESS should be a consideration for
path forwarding protocol” in your slide
Tyan-Shu Jou: That item tries to suggest in calculating the forwarding path, the frames between two STAs in the
mesh should traverse through a "good" path, rather than being blindly sent to a wired network and then sent back to
the mesh toward the destination.

Bob Moskowitz: PAR implies Layer 2 solution. Rapid spanning tree can be used on the ESS mesh. For STA
roaming support, 802.1f recommends using a Layer 2 frame to DS to announce MAC address to update switches.
Some AP vendors already adopted this mechanism.
Tyan-Shu Jou: Using spanning tree algorithm on mesh has a few drawbacks: one is between STAs in the mesh, the
path is not the shortest one. The other is one spanning tree won’t be able to utilize multiple entrance to the wired
network. We will check on 802.1f spec.

Mike Morton: Using IP layer protocol is not preferred due to the potentially complicated and long working
relationship with IETF.

Mike Morton: One requirement can be “ESS mesh must support single radio”

Tricci So: Variable cost links in spanning tree, VLAN w/ spanning tree should be considered in the SG.

Some people discussed the usage of one or more ESSIDs.
Tyan-Shu Jou: using only one ESSID in the network put some limitation, but it is the expected behaviour of one
ESS network. Some working groups such as the fast roaming group made assumption on the SSID being the same
so STAs can respond correctly.
Steve Conner: The PAR of ESS mesh doesn’t require the use of the same SSID.

Session adjourned by Donald Eastlake at 9:30

Session II:
Session called to order at 8:00am by Donald Eastlake 3rd, ESS Mesh SG Chair.

**Presentation:**

- James Hauser, Naval Research Lab
  - “802.11 ESS Mesh Overview & Issues”
  - (11-04/0368r0)

  Raymaond Mobel: Is AP mobility part of the PAR?
  James Hauser: Certainly, although mobility is a strong word. The topology should be dynamic.
  Steve Conner: PAR doesn’t specifically mention AP mobility as a requirement.

  Bob Moskowitz: We should check the broadcast types listed on the slide against 802.1D carefully

Chair: Server is up, attendance reminder. Agenda revision 3 is available on the server.

**Presentation:**

- By: Peter Stanforth, MeshNetworks
  - “User Requirement for 802.11 Ad Hoc Networking”
  - (11-04-0371-00-0mes-user-requirements.ppt)

  Steve Conner: the PAR doesn’t limit the implementation to be 32 nodes neither to limit the network to be flat. Physical locality is only one of the factors to be considered.

  Bob Moskowitz: It will be worthwhile to look at the difference of the sparse graph and dense graph for routing issues. It will also be worthwhile to see some studies on route flapping rate for various network sizes so we can better understand target size.

  Dennis Baker: we should talk about density and number of hops for scalability of the network.

  Peter Ecclesine: the limit of hops may be 10, or even 4 or 5 in a real network.

Chair: Presenters please upload the presented files and I will update the agenda file to have the reference numbers.

Session adjourned by the chair at 9:15am

**Session III:**

Date: 17 March 2004
Location: Salon IV, Hilton Disney World Resort, Lake Buena Vista, Florida, USA
Officer presiding: Donald Eastlake 3rd
Attendance: See end of minutes.

Session called to order at 1:30pm by Donald Eastlake 3rd, ESS Mesh SG Chair.

The chair went through the key issues in the previous two sessions for the new attendants.

**Presentation:**

- Narasimha Chari, Tropos Networks
  - “Interconnectivity Considerations and Usage Scenarios for ESS Mesh”
  - (11-04/0353r1)

**Presentation:**

- Kue Wong, Nortel Networks
  - “Process Considerations Helpful for Maintaining Extensibility of ESS Mesh”
Presentation:
SK Sung, Samsung
“Prioritized MAC Access Mechanism of Routing-related Frames for ESS Mesh” (11-04/257r1)

Steve Conner: According to the PAR, the ESS mesh should use Layer 2 or 2.5 for routing. Secondly, 802.11e will be a standard before ESS Mesh becoming standard. This group will adopt the standard.

Tyan-Shu Jou: This group possibly should put more focus on the things that ESS mesh needs specifically, not the common requirements on general 802.11 networks.

Vijay Patel: Suggest to cover a few mechanisms that 802.11e missed in the PAR of SG
Donald Eastlake 3rd: Modifying PAR is possible but it takes a lengthy process.

Sanjay: Selective reliability defined in 802.11e is important in ESS Mesh and suggest this group to specifically claim the solution will follow that.

One person indicated that 802.11e is designed for communication between STAs and APs, to extend that to support QoS on end-to-end ESS mesh paths will need extra effort.

Presentation/Demo:
Francis daCosta, MeshDynamics
“Managing the performance of multiple radio Multihop ESS Mesh Networks” (11-04/272, 11-04/274)

Tyan-Shu Jou: Does a mesh node need to scan channels to learn alternate paths?
Francis daCosta: No. In our system each mesh node receives enough knowledge to know which channel to turn to.

Question on Throughput vs. Lantency.
Francis daCosta: Adjacent channel interference is an important problem. More hops means longer latency.
Vijay Patel: There are more things mesh should be considered than throughput and lantency.

Raymond Aubin: When STA roams, is the routing re-calculated?
Francis DaCosta: Disassociate only traverses upwards on the tree, never dowards the tree. The demonstrated system does sampling every 0.5 second to decide whether to change the channel and topology.

Peter Stanforth: Your solution is not a mesh, but tree topologies. We are supposed to create ESS mesh, not ESS hierarchy.
Francis daCosta: the trees are flexible. If multiple radios are adopted on the APs, more flexible topologies are possible.
Tricci So: Even Internet routing is tree-like. A physical topology may not represent logical topology.

Session adjourned by the chair at 3:18pm

Session IV:
Date: 17 March 2004
Location: Salon IV, Hilton Disney World Resort, Orlando, Florida, USA
Officer presiding: Donald Eastlake 3rd
Attendance: See end of minutes.

Session called to order at 4pm by Donald Eastlake 3rd, ESS Mesh SG Chair.

The only agenda item left on the table is the future activites.

Steve Conner: A lot has been discussed. To put their group at the right track, to avoid thrashing among all possible solutions, we should really focus on the objectives we had initially. I propose a straw poll as: Should usage model documentation and prioritization be a major objective for the May 802.11 Mesh Study Group meeting?
Peter al: Given 802.11n as an example. They took one year to decide what to do after learning all possible usages. I believe there is a common goal on the Mesh group, so we should focus on it. Define the problem and the goal is the most important issue.

Francis daCosta: We will have to outline the need of the ESS mesh.

Tricci So: I agree with Steve’s suggestion. We should try to look at some network scenarios to find the objectives of the technology.

Straw poll: Should usage model documentation and prioritization be a major objective for the May 802.11 Mesh Study Group meeting?

Result:

Yes: 42
No: 2
Abstain: 3

Steve Conner: A high-level architecture will help us to identify some issues we are going to face in this study group. It should be our benefit to have the following straw poll: Should documentation and definition of high-level architecture and functional components be a major objective for the May 802.11 Mesh Study Group Meeting?

Tyan-Shu Jou: Before having the requirements and goals clearly identified, the straw poll wording may suggest to come up with a high-level architecture ahead of us. We should re-word the straw poll to make sure there will not be an architecture coming out before requirements are ready.

Vijay Patel: Usage models will be useful and work with an architecture.

Kue Wong: Generally agree with the straw poll but I’d like to have some clarification on how to reach it.

Steve Conner: Early discussion on the high-level architecture should be helpful to the group.

Peter Ecclesine: There are lots of requirements on wireless network that can potentially apply to ESS mesh. We can delete/remove requirements from them to see the true goal of this group.

Thomas Maufer: this may to be a good goal but May might be too early.

Tricci So: A high-level architecture will help, meanwhile we should confine the scope of the work. Those things may need to be done in a circular fashion.

Someone suggested to remove “major” from the wording.

Steve Conner: suggest revising the straw poll to be the following:

Straw poll: Should ESS definitions and possible high-level architecture discussions be an objective for the May 802.11 Mesh Study Group Meeting?

Result:

Yes: 56
No: 1
Abstain: 9

Tricci So: For the major object, presentations from industry to present some usage examples will be helpful.

Peter Ecclesine: ESS has similar requirements as BSS on power and radiation.

802.18 plenary had a presentation on mesh. We may want to coordinate with them.

The chair: we do not have our own mailing list because 802.11 encourages people to share the information due to the overlapping knowledge among all groups.

Peter Ecclesine: It’s hard to coordinate the teleconference. What’s the agenda?

Donald: It will be an informal teleconference, I can use help to set up the May agenda.
Straw Poll: Activity level between March and May 2004 meetings:
- No meetings or teleconferences
- One teleconference
- Meeting(s) and/or more than one teleconference

Result:
- No meetings or teleconferences: 5
- One teleconference: 24
- Meetings and/or more than one teleconference: 0
- Abstain: 17

The Chair: The majority chose to have one teleconference. The rule is 10 day in-advance notice. I plan to announce it on the 802.11 mailing list 15 days in advance

Tentative teleconference day: April 21st
Tentative teleconference time: Noon Eastern Standard Time
Length: 1-1.5 hr
Survey result: Approximately 18 people plan to attend.

Meeting adjourned by the chair at 4:52 pm
Attendance

Tomoko Adachi
Jonathan Agre
Carlos Aldana
Menwyn Andrade
Hidenori Aoki
Yusuke Asai
Raymond Aubin
Malik Audeh
Dennis Baker
Thomas Billhartz
Jennifer Bray
Jim Brennan
Alan Carlton
Amalaroyal Chari
Greg Chesson
Leigh Chinitz
Andy Coney
W. Steven Conner
Vasantha Crabb
Francis daCosta
Collin Davidson
Kevin Dick
Baris Dundar
Roger Durand
Donald E. Eastlake 3rd
Peter Ecclesime
Bruce Edwards
Dean Edwards
Steve Emeott
Christopher Euschew
Lars Falk
Paul Feinberg
Valerio Filuaro
Andreas Floros
John Fossaceca
Philip Gutierrez
Seishi Hanaoka
Thomas Haslestad
Vann Hasty
James Hauser
Yutaka Hayakawa
Haixiany He
Eleanor Hepworth
Karl Heubaum
Guido R. Hiertz
Chris Hinsz
William Horne
David Hunter
Hyosun Hwang
Hideyo Ikeda
Yasuhiro Inoue
Yemkown Jeong
Bobby Jore
Tyan-Shu Jou
Kevin Karcz
Tojoyuki Kato
Pat Kinney

Takuyu Kitaimura
Takushi Kunihino
Ted Kuo
Gopal Kushnan
Martin Lefkowitz
Jie Liang
Scott Lindsay
Joong Soo Ma
Art Martin
Brian Mathews
Taisuke Matsumoto
Yoichi Matsumoto
Sudheer Matta
Tom Maufer
Bill McFarbad
Leo Monteban
Yuichi Morioka
Mike Morton
Robert Moskowitz
Partha Narasimhan
Hideaki Odagiri
Hiroshi Oguma
Tim Olson
Atsushi Ota
Richard Paine
Vijay Patel
Yarow Peleg
Konstantinos Platis
Stephen Rayment
Carlos Rios
Sehan Robert
Stefan Rommer
Jon Rosdahl
Shin Saito
Shoji Sakurai
Sunil Sanwalka
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Joe Sensenderf
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Huai-Rong Shao
Jacob Sharony
Yangmin Shen
Ming Sheu
Shusaku Shimada
Tricci So
Peter Stanforth
SK Sung
Hideki Tanaka
Henry Taylor
Tim Thornton
Sandy Turner
Dennis Volpano
Nieb von Erven
Ray Wang
Shawn Welsh
Michael Wilhoyte
Keu Wong
James Woodyatt  
Takeshi Yamamoto  
Tomoya Yamaura  
Lily Yang  
Hujun Yin  
Juan Carlos Zuniga
IEEE P802.11
Wireless LANs

Wireless Performance Prediction Study Group Meeting Minutes

Date: March 18, 2004

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Abstract

Minutes and attendance of the meetings of the IEEE 802.11 Wireless Performance Prediction Study Group held in Lake Buena Vista, Florida, USA on Wednesday and Thursday, March 17 and 18, 2004 under the SG Chairmanship of Charles Wright of Azimuth Systems.

Session Proceedings

Meeting 1:

Date: 17 March 2004
Location: Dogwood Room

Meeting called to order at 4.00 PM Wednesday March 17th by Charles Wright, WPP SG Chair.

Charles opened the meeting by welcoming the group. He then reviewed the IEEE patent policy. He also clarified that anyone present at the SG could vote, but that it took a 75% majority for a vote to pass.

Tom Alexander was appointed as permanent SG recording secretary.

Charles called for presentations germane to the scope and purpose of WPP. The following presentations were offered:

- Mike Wilhoyte – document number 11-04/386 "Suggested Scope and Purpose of WPP TG"
- Tom Alexander – document number 11-04/370 "Considerations for PAR & 5 Criteria for WPP"
- Shravan Surinenen – document number 11-04/387 "Proposed framework for WPP"
- DJ Shyy – document number 11-04/389 "5 Stage process for WPP testing"
- Neils van Erven – document number 11-04/346 "Proposal to do RF sensitivity measurements".
- David Michelson – document number 11-04/361 "Wireless Performance Prediction - Rationale and Goals".

Charles inquired as to whether Neils van Erven’s presentation tied in with the scope and purpose discussion of WPP. Neils indicated that this did not tie in, but he had a deadline to depart on Thursday. Charles recommended that this should be taken up in May.

Charles noted that David Michelson was unable to be present, and so he would give the presentation on David’s behalf (by prior consultation), as it was timely and pertinent to our work at the moment. He then issued a final call for presentations; no
more presentations were received, and he thereupon closed the call, drew up the draft agenda, and placed it before the SG for approval.

Question: Is this the agenda for the whole week or just for today?
Answer from Harry Worstell: When you vote on an agenda, you always put more in there than you want to accomplish. He also recommended changing the title of the agenda from "agenda for Orlando" to "agenda for March 17th", and putting in the order of the presentations. Jon suggested using Stuart's agenda template as a starting point.

There was a suggestion from the audience that we should start with a reprise of the progress from the teleconferences as well as David's Michelson's presentation, and then progress to the new presentations. DJ Shyy requested to go first. Shravan then requested that he go first as well. DJ did not object, so Shravan went first with DJ next. Harry suggested that David's presentation be bunched into the group of presentations, but Charles responded that he anticipated that this would go as part of the reprise of the teleconferences.

Charles then asked for a motion to approve the agenda.

Motion #1:
Move to approve the agenda.
Moved: Khaled Amer
Seconded: Larry Green
The motion passed by acclamation.

Charles then passed around the attendance list, and requested people to put their names on the list.

Charles gave a reprise of the progress since the Vancouver meeting, made via teleconferences. He noted that two presentations had been made during the teleconferences: one by Paul Canaan, and one by David Michelson. Some wordsmithing was done on sample Scope and Purpose statements offered by presenters, but we would reopen the issue again at this session.

Charles then asked for comments on the teleconferences, and opened the floor to speakers. Scott Blue stated that there was initially some "scope creep", and then we came back down to starting with one AP and one client and then working our way up, but then Dave Michelson’s presentation increased the level of the discussion back up again. He stated that there were also two views on "performance": one from implementers and one from deployers. He suggested that as far as trying to predict performance, we should take a good look at what we are defining as performance. He mentioned interest from applications as well as 802.11k people. He also noted that we are looking at MIMO systems and so forth, and we are looking beyond merely a "point to point Ethernet extension". He hoped that this group would explain how it would relate to 802.11k and management and so forth, and then get back to the 1-AP 1-client case. He also mentioned that we had one set of people on one conference call and then another set on the next, and this was an issue.

Charles noted that Scott had expressed what he thought was the right purpose of the group at the moment: there are a lot of things that are really hard to do, but we need to look at the entire scope of the problem and then choose what we want to do. Other subjects within this area could be done by other organizations. He then moved over to presenting Dave Michelson’s slides.

Harry requested a volunteer for chair while Charles was giving David's presentation. Jon Rosdahl volunteered to take over as chair temporarily during Charles' presentation, and came up to the podium. Charles then presented David's presentation (document 11-04/361r1). He noted first of all that some people had reported problems downloading, and asked whether anyone else had seen this. Nobody responded, so he then went directly into the presentation.

The presentation stated that the University of British Columbia (UBC) had one of the largest deployments of WLANs. Scott Blue interjected that these were in fact 802.11g APs. Some desired performance metrics were presented, as well as some desired benefits of WPP. The presentation showed some scenarios and issues. The test & measurement aspects were also shown. Reference was made to propagation models, including COST-231.

Question by Charles: What is COST-231?
Answer from audience: It's probably the old JTC model.

Charles continued with the presentation, discussing the reasons for WPP developing recommendations and standards. He mentioned that David emphasized that the third point on his slide 12 – to stimulate the development of new and better methods for performing wireless performance prediction by providing a comparison benchmark – was the most important.
He then presented David's proposed Scope and Purpose, warning first that the Scope portion went on for two slides. He closed the presentation with the concluding slide.

Question from Bob Mandeville: Do you see any trace of the need to define metrics in this proposal? There doesn't seem to be any.

Answer: You are probably right.

Question: A lot of the goals are good, but I wonder if some of the goals of this group hasn't already been achieved in the industry? Opnet has models available of 802.11a/b/g today, and can run 5000 node simulations faster than real time, and has a full set of parameters. The question to the group is, can't these models be used to perform prediction?

No specific answer from the group. Jon Rosdahl noted that the paper presents ideas, so if there are any questions on the paper itself, we should deal with this first.

Comment from the audience: We should highlight the application side of this first. The "invasion of the IETF" here stemmed from their thinking that they need to be involved in the MAC due to the lack of performance models. It's about how you get down to latency vs. throughput, which is basically just performance up the stack.

Comment from Mike Wilhoyte: The goal of the group is to come up with metrics to predict performance rather than models to predict metrics. To answer the Opnet person, it's great that you have models, but what we don't have is a standard for metrics across users.

Comment from Niels: On the performance side there is no benchmark, and the customer doesn't know what he/she is getting in terms of real performance. We should focus on that first, and later we can look at additional stuff such as fast roaming and latency.

Comment from Khaled: A good idea for us would be to learn what metrics we should be looking at, and it would be useful to have a presentation from David in terms of what his experience has been, and we could learn from that.

As there were no more questions or comments on the presentation, Jon Rosdahl then relinquished the "hot seat" (chair) back to Charles. Jon then returned to his seat, but then complained that someone else had taken his chair! Charles resumed his tenure as SG Chair and gave some closing remarks on David's presentation.

Joe Repice reported that he COST-231 final report presentation was available at [http://www.lx.it.pt/cost231/](http://www.lx.it.pt/cost231/) and that there were several chapters of information available at that URL, for members who were interested.

Charles then made some clarification on the procedure for uploading revisions to contributions. He briefly presented the timeline going forward; we need to get our PAR & 5 Criteria approved by the WG in July (on the Friday of the meeting week) if we are to transition to a TG at the earliest opportunity; if approved, we can expect to become a full TG in September. Harry clarified that approvals took place in a plenary rather than an interim.

Charles then invited Shravan to come forward and give his presentation (document 11-04/387). Shravan said that his slide set had been updated from that uploaded to the server, but he would upload the revised document ASAP. Shravan started with a note that he intended this presentation to be taken as a starting point. He also stated that he expected WPP to define a set of parameters that are used by end-users and developers, and also indicate how these are to be measured using a repeatable test methodology and test setup. He then briefly covered the reasons for the existence of WPP: basically, the IEEE is an organization that is focused on technical issues and did not talk about marketing, hence it was a good forum for defining what is performance in a uniform way. He summarized the performance characteristics and categories that could be addressed.

Shravan then noted that the PICS, for example, gave many requirements and definitions for performance, but different people using different test setups for verifying the PICS often came up with different results. He said that we need a common understanding of how the device is tested (setup, implementation, etc.) in order to have a repeatable and uniform set of test results; and this is something that WPP can do.

Shravan also covered some "grey areas" of testing, such as rate adaptation, phased array antennas, soft MACs, roaming, etc. We need to make sure that different devices with different characteristics would be tested correctly. He noted that different parts of the industry would be interested in different combinations of parameters of interest. He closed by concluding that we need to define parameters and then provided a summary.

Question by Harry: You have an interesting presentation, but I am concerned by how broad it is. You have described things that TGk is already concerned about. I didn't think there would be this much overlap with TGk; one thing that this group needs to do is ensure that this does not overlap with other standards bodies. Also, you have made some assumptions such as not being interested in throughputs with IP phones, but I am as a service provider very interested in throughputs with IP phones, so there are some things in the presentation that I don't necessarily agree with.
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Answer: (general assent).

Harry also offered to put a presentation together that showed the areas that the 802.11 group wasn't touching yet, so that the group could be steered correctly. He noted that the Wi-Fi Alliance was focused on interoperability and not performance. He particularly noted the work of the WMN study group, and also suggested that the three groups in 802 (WPP, WMN, 802.11k) need to interact via liaisons.

Question: How does the work in 802.11k relate to our purpose in WPP?

Answer: In WPP we need to do performance measurements that are repeatable across measurers.

Comment from Gerard: Throughput is very important, but depending on the point of view the definition of throughput could be different. In fact, throughput could be impacted by issues at all layers.

Comment from Mike: What we mean by performance is not a commonly held consensus, I do agree that we should confine the scope, so for instance we should look at the metrics and the efficiency in terms of transporting MSDUs from point to point. For instance, DC power consumption was out of scope. If we can all get our heads around what we mean by performance we can make progress. In terms of limiting scope – we should limit our scope to what 802.11 as a standard is, which is a MAC and a PHY, and we can come up with a set of metrics that we need to define at the 802.11 layer.

Comment from Pratik: When we were trying to start this, we wondered: what does performance mean? What are some of the interesting parameters of performance, and what do users perceive as performance? The WNG SC presentations for WPP referred to some of those metrics. We can start boiling them down into something that makes sense to pursue further, and leave out the specifics until later. I suggest taking some of the work done in the usage models group in TGn, and tabulating and organizing those work items, and then putting metrics around them.

Comment from Scott: The first question to ask is, who needs the performance metrics, is it people building equipment (covered in 11k), or is it the end users such as the driver developers and people building applications who can't figure out why they are not getting 54 Mb/s out of their devices/equipment? We should look at service-level prediction as opposed to this nebulous word "performance".

Charles then reminded people to log their attendance, and moved on to DJ Shyy's presentation (document 11-04/389r0). DJ presented a proposal for a 5-stage process for WPP testing. He remarked that his presentation would be short, and would give people tons of time to go drink beer. He started by stating that WPP should be divided into testing phases or stages, and presented his proposed stages. He suggested that stage 1 should consist of measurements between one AP and one client in a controlled environment, and would ask questions such as "what are the performance metrics to collect?". Stage 2 should be between 1 AP and multiple clients in a lab environment. Stage 3 should be between multiple APs and 1 client in a lab environment. He noted that this progression is derived from CDMA testing, where they have a loaded and an unloaded environment; Stages 1 - 3 corresponded to the unloaded environment. Stage 4 should be between multiple APs and multiple clients in a controlled environment. Finally stage 5 should be between multiple APs and multiple clients in a field environment, and essentially validates the results from Stage 4. He noted that the CDG (CDMA Developer’s Group) recommended that Stages 1-4 be made mandatory, but Stage 5 is allowed to be optional, and closed by recommending that this 5-stage process should be included in the PAR.

Comment from Niels: The issue with Stage 5 is that 802.11 uses the ISM band, and doing outdoor testing produces uncontrollable results due to tremendous amounts of interference. I would not do it.

Response from DJ: we are doing some optimization for a CDMA operator in San Diego, and we have to first scan all the frequencies before doing testing because you would not believe all the interference out there.

Comment from Areg: What WPP stands for is Wireless Performance Prediction; however, here you bring out a very controlled lab environment, but a lot of the use of WPP is for predicting performance in various ecosystems, in which case this doesn't work at all.

Response from DJ: So what's your recommendation?

Response from Areg: I would address a wide variety of real field deployments.

Rejoinder from DJ: You need to have a good baseline, there are too many uncontrollable variables out there.

Comment from Mike: I would replace the term phase or stage with "scenario". An uncontrolled environment is very useful, but we need to ask the question "what are we defining here?"

Comment from Joe: Stages 1-3 usually involves interoperability testing, how does this conflict with what the Wi-Fi Alliance is doing? What happens if a vendor of a hotspot needs to deal with multiple vendor types?

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Charles responded: perhaps there are some sub-scenarios where the clients are all known and controlled, and perhaps there are some other scenarios as well.

A member of the audience introduced himself as being from Sychip, and said that his understanding was that there is a minimal performance requirement similar to interoperability test in GSM, so does that mean that if someone doesn’t pass stages 1-4, nobody is going to pass the test? He also objected to the word "mandatory". Charles responded by saying that we need to specify the scenarios.

Comment from Don Berry: The underlying client implications are what's important. I don't mind test scenarios, as long as they have an impact on the end user. We should put at a lower priority the tests that don’t have a measurable end-user impact.

Response from DJ: I agree.

Comment from Gerard: Let’s draw a parallel to wired Ethernet testing: we don't just do interoperability testing, we also define the environment in which it is tested.

Comment from Scott: we are still hung up on client vs. AP testing, and we need to consider this carefully.

Harry Worstell, having grown progressively more restive during the preceding discussion, then called for the orders of the day. Charles declared the meeting in recess until Thursday afternoon, and announced that the next meeting for the session would be at 1.30 PM on Thursday.

The meeting recessed at 6.00 PM.

Meeting 2:

Date: 18 March 2004
Location: Dogwood Room

Meeting called to order at 1.35 PM Thursday March 18th by Charles Wright, WPP SG Chair.

Charles opened the meeting by welcoming the participants, and indicating that the proposed agenda included some presentations which would be followed by a discussion on the PAR and 5 Criteria. He exhorted participants to check their Ego and Politics at the door, and also requested that the participants help each other understand their needs and intentions. He also passed around an attendance list and requested attendees to set down their names, if they hadn’t already done so on the previous day.

Charles then reviewed the agenda drawn up on Wednesday, and talked briefly about the length of time needed to discuss the PAR & 5 Criteria. Scott stated that a lot of us are hearing from 3 groups: internal IT groups, network providers, and customers building applications. This was a huge scope, so we should chop up this stuff into separate items to make the task more manageable. He raised the issue of how we were to carve up the work. He also asked the question: “Can we do something about this problem before grinding through the scope and purpose?”

Charles asked Scott if his suggestion was to modify the agenda in order to have a discussion after item #5 on the agenda? Scott answered that he was thinking of a straw poll prior to going forward with the rest of the PAR discussion, and that we could modify the agenda by adding in three items of discussion, as follows:

1. What are the market drivers behind the need for performance?
2. Is looking at performance from a campus/city environment outside the scope of 802.11?
3. Should we be looking at a totally separate group for this sort of stuff?

There were some muted protests from Tom about starting a discussion of agenda topics before approving an agenda. Khaled also raised the objection that this was getting into detail, and we should have a discussion when the time was right. Charles suggested adding an agenda item that covered an open-ended discussion before getting into the drafting of the PAR and 5 Criteria. Scott reiterated that he felt that this sort of discussion was appropriate. Charles then added an item titled "Broad discussion of scope and purpose before diving into wordsmithing PAR” to the proposed agenda.

Larry Green stated that it was clear to him that we needed a performance document of some kind. It was further clear to him that there were three groups: installers, operators, and developers. The installers and operators have the same rough needs, but developers have different needs. Charles responded by requesting Larry to hold the discussion until the proper time on

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the agenda, preferably accompanied by slides. He suggested that Larry’s three points would be particularly good on a presentation.

Charles then requested a motion to approve the agenda.

**Motion #2:**

Move to approve the agenda.

Moved: Scott Blue

Seconded: Gerard Goubert

The motion passed by acclamation.

Charles then put up the SG timeline once more and reviewed it briefly with the group. After this, he called for the presenters to make their presentations.

Tom Alexander presented a contribution "Considerations for PAR & 5 Criteria for WPP" (document 11-04/370r0). Tom stated that his presentation departed from those seen so far in that it did not attempt to provide answers, but gave some general information on the PAR & 5 Criteria and then asked some questions. One of the first questions was: who reads the PAR? He also noted the importance of the PAR – it's a legal document that indemnifies standards developers under IEEE. He also stated that it was important to have a long and acrimonious discussion of scope and purpose to get it exactly right.

Tom progressed through his presentation until he came to slide 11, at which point he made the rash statement that one possible opponent to the WPP work *might* be the Wi-Fi Alliance. Bill Carney, as Wi-Fi Alliance liaison, objected strenuously, noting that the proliferation of standards actually *increases* plugfests. Lots of enterprise do Wi-Fi testing – and the Wi-Fi Alliance is not necessarily opposed to WPP work. Historically, the test programs out of the Wi-Fi Alliance to ensure interoperability look at the work that comes out of 802.11, and the Alliance can actually use this WPP work for future work. Tom then made some apologetic noises and moved to the next slide with all possible dispatch.

Comment from Pratik: On slide 13, why is the last item a non-objective?

Answer: You are correct, the last item should be moved to the list of objectives.

Comment from Fanny: I agree that end users don't read the standard. However, test labs do, and they could use some guidance. Can you establish some type of metrics that will relate back to the end user? If you take the premise that you must focus on the PHY and MAC layers, then you will find that it has little bearing on the end user. There are too many other variables that might affect what the user gets.

Other members of the audience commented that it would be good to have a set of benchmarks to allow comparisons, and also that maintaining a performance measurements database within devices for quantitative performance metrics would be interesting.

Tom noted that nothing says we have to solve the problem all the way up the stack; if we can solve a piece of the problem, that's good. For instance, voice latency: there's a lot of ITU standards on voice, ranging from the link layer (such as ATM to the application layer). None solves the problem for the total application, but each solves a problem at a different layer. By taking the combination of all the standards, you can ensure a good user experience for voice.

Tom noted further that it would be useful to find some sort of example standard that we could follow.

Comment from Bob Mandeville: you have looked at IEEE standards and also ITU standards, what about IETF standards? Is that a useful reference for us to look at?

Answer: yes, but there are significant places where IETF RFCs depart.

Comment from Randy Wohlert: in the ITU-T family of standards, Y1540 defines QoS classes and performance parameters, Y1541 defines other performance metrics for specific applications, and Y1221 talks about traffic control and congestion. It is also good to look at ITU-R SG3, a couple of the documents there look at deployment-related metrics.

Mike Wilhoyte then presented his contribution: "Suggested Scope and Purpose of WPP Task Group" (document 11-04/386r0). He put forward a suggested scope and purpose for WPP, and stated that he'd tried to put some precise language for the scope and the purpose. He presented a "box in the sand" view that explained what WPP was and what WPP wasn't. He then set down a stake in the ground in terms of scope and purpose entries for the PAR.

For the scope, he suggested that PHY metrics might not be as applicable as other metrics. He presented a motivation for developing the WPP standard: for example, an installer might be interested in a software tool that has a means to evaluate
specified metrics for different products, and was thus enabled to select specific products for specific applications. With this, he closed the presentation and awaited questions.

Question by Joe: Can someone give us a quick overview of the ESS mesh study group?

Answer: The mesh is of APs and ways to interconnect APs (specifically, ESSs) as a backhaul for BSSs.

Question from Pratik: I completely agree that this is not conformance testing, a lot of people have brought it up. It is also not a requirements spec that says what is good and what is bad. The main question is, what is your intent in terms of the suggested scope with respect to the PHY/MAC layers? For instance, if there is an 802.11 enabled laptop, what aspects of its performance would be excluded?

Answer: When you take a performance metric, are you measuring performance factors that depend on the wireless network or not? If you have a metric, you should be pretty comfortable that if you measure that on Scott's laptop you should get the same answer as on my laptop. It should be related to parameters you can control; if you can't control it you shouldn't be writing a standard around it.

Question from Pratik: You would not be opposed if somebody said that they wanted to measure TCP/IP throughput on their laptop?

Answer: no, provided that there was a definite way of setting up the TCP/IP stack.

Pratik’s response: good. One factor raised has been that there are devices with wireless interfaces in them, we want to measure the performance of the entire device and not a component. Ans: as a manufacturer of equipment, you are probably more comfortable with metrics covering the whole equipment, but would you accept being able to extract and bring up the metrics from the lower layer into the upper layers?

Response: Thanks, that's good.

Comment from Scott: What this really amounts to is that they are getting performance metrics at Layer 2 so that they can take IP to the next level. As we have more and more task groups here, we need to take the complexity away in terms of handing things up the food chain, so that the people doing the higher-level tasks can stop giving us advice on how to do things.

Question from Shravan: For transmit and receive at the PHY layer, there are a lot of performance metrics that can be used to base our work on. We can use these as a framework and a starting point.

Answer: Agreed, there are actually things like ACI (Adjacent Channel Interference) and so on that are along the lines of what you say.

Question from Khaled: I'm a little concerned and confused by what we are trying to do here. We started with performance prediction, but the scope seems to be narrowing down to performance measurements.

Answer: Agreed. When we are in a static environment, we can predict performance fairly easily, but when we are in an uncontrolled and dynamic environment it's harder to predict performance. It's hard to determine performance metrics that are highly correlated to the end-user experience.

Response from Khaled: We need to work on metrics and measurement methods that not only measure but also help us to predict.

Question from Fanny: I would like to address Khaled's comment. We measure a variety of parameters, such as throughput and range and so forth, but when we start saying "prediction", I don't really understand what it is. This is confusing.

Response from Shravan: we need to set up some test setups and metrics and by standardizing these we might be able to predict using these setups and metrics and measurements what is going to happen.

Mike noted also that prediction was very hard - take the example of range: this is highly sensitive to the environment and really difficult to control. Pratik added that this was however an issue of significant interest. Charles observed that this was an excellent point - the things we want to know at the wireless level might not be actually a part of what was being measured in the metric.

Question from Bob: Your suggested scope is extremely crisp and clear until the word "layers". You seem to be struggling after the word "layers" – the first part of the paragraph is good, but then it goes on and on.

Answer: I was probably struggling! (Laughter.)

Question from Bob: How about cutting it off after the word "layers"?

Answer from Charles: The result is probably insufficient.
Question from Mike: Is it part of the scope to define the scenarios in which these metrics are measured?

Bob and Charles suggested using "conditions" instead of "scenarios". However, Mike used the term "packet error rate" as an example, and said that the metric doesn't really involve a scenario here.

Question from Khaled: We really don't have a good grasp on the word prediction here, and so we should be careful here. As we are having discussions on the scope, we should keep this in the back of our minds.

Question from Don: There are other wireless technologies within 802 – maybe we should think about expanding beyond 802.11. As far as the "view from the client, view from the network" and these competing views, we should arrange these scenarios from these different perspectives. There are prediction things that we should consider, such as CPU power and so forth.

Charles responded to this by saying: “I take a somewhat parochial view here as I only know about 802.11, but it's conceivable that we could go beyond that to other WGs.” Khaled commented further that we could become an 802 WG instead of an 802.11 SG. Charles noted the example of 802.21, which started out within a WG and became its own WG.

Comment from Gerard: We're on a sticky wicket here. We're using two significant words: one is performance and the other is prediction. I would like to present a view that shows a definition that may be better. (He then used the screen to show an informally written statement that read "Define a large/varied set of scenarios used to test different aspects of resiliency, stability, scalability, efficiency, and overall network (above layer 2) (based on different point of view, NEMS, deployers, users) with which to evaluate how the 802.11 PHY and MAC systems will operate in the real deployment situations".

Comment from Mike: We’ve just debated whether to define scenarios or not, and that's your first sentence.

Response from Gerard: We need to define the test setup.

Question from Fanny: How about calling it “test configuration”?

Question from Khaled: Why are we so ashamed of the words "performance" and "prediction"?

Response from Charles: If we include those terms in the Scope or the Purpose of the PAR, it's a circular definition.

Comment from Larry Green: You are missing the ice-cream bars outside! However, I really like this text, and it's along the lines of what we're discussing here.

Interjection from Scott: I have some suggestions that I would like to bring up with regard to "scenarios".

Comment from Fanny: I would also like to speak in support of this, it needs some wordsmithing, but the gist is good.

Comment from Bob: There was another scope statement that we looked at the other day, but it skipped over defining metrics. This one does too.

Question from Fanny: Could we replace "scenarios" with "metrics and test conditions"?

Comment from Gerard: the value of the metric depends on the need of the user.

Mike then raised a point of order, asking: “Is this discussion out of order? We have a separate agenda item to discuss this.” There was a brief pause. Charles then asked if there was any objection to breaking for 10 minutes so that we could discuss some more. Shravan stated that he wished to present something from the HTSG that would be applicable, and it would take about 5 minutes. Charles assented and Shravan duly presented.

Shravan then showed a set of comments that were generated by the HTSG comment resolution group (document number 11-03/588r0) to the group. As the document was somewhat difficult to read on the screen, it was recommended that we could break so that everybody could download the document on to their own laptops and then resume. Besides, the ice-cream bars were calling.

Motion #3:

Move to recess until 4.00 PM.

Moved: Scott Blue
Seconded: Tom Alexander

The motion passed by acclamation.

Charles then declared the meeting in recess until the stated time.
The recess ended at 4 PM. As Shravan had not returned yet, Charles conducted a short review of the Study Group policies and procedures, and reminded the participants that in a Study Group everyone votes, and 75% consensus is required. As Shravan was still absent, Charles resumed with a broad discussion of scope and purpose, with Gerard showing his proposed WPP Scope text. Charles asked if someone would like to lead a discussion of Scope and Purpose, or whether there was interest in looking at Gerard's text. Mike wanted to know if there was any need to look at the previously given presentations that could be used to help define the two terms with which the group was having trouble ("performance" and "prediction"), and proposed that the term defined in his slide could be used as a starting point.

Charles asked the group if anyone disagreed with bringing Mike's scope statement up. No disagreement was heard. Gerard then proposed that we get all the Scope and Purpose statements together and then try to merge them. Charles received the contribution numbers (11-04/386, 11-04/387 and 11-04/361) from the minutes and then downloaded the documents onto his computer for display under request.

Mike suggested that we should rank the various scope and purpose statements using a series of straw polls to figure out what we should start with. Charles volunteered to read the various scope and purpose proposals first to the group before embarking on the straw polls. He started with Dave Michelson's proposed purpose, and stated that we would discuss this for 10 minutes, move on to the next candidate, and so forth. At the end, we would do a straw poll. Charles then showed the “Purpose” portion of Dave Michelson’s presentation (document number 11-04/361r1), and the discussion began.

Comment from Scott: In this one, the point or area kind of ideas are good, and who is being benefited is also good.

Comment from Mike: It talks about coverage and throughput (including those as metrics) but it should be the job of the Task Group to decide whether to include them. Including the stakeholders is good. I would be in favor of starting with this and then wordsmithing it.

Question from Scott: There are a couple of things to consider: what are the market drivers for people wanting this information? Having gone down this road with DSL, there are two distinct groups that need to be looked at, the service provider and the application provider.

Question from Charles: Could you address this specific purpose?

Response from Scott: It's outside of the scope of this group to decide who needs this information, so the word “performance” can be addressed properly.

Comment from Charles: It is important to know who your audience is; if we are disagreeing with who the audience is, we can list that as an issue here.

Scott then raised a motion and a point of order in a somewhat confused fashion. No formal proceedings took place, however. Gerard interjected that we should answer the question of the audience first. Mike proposed that Tom's presentation be used as a basis for answering these questions. Tom suggested that we could go through the questions in his presentation and try to answer them one by one.

Charles recommended that everyone log their attendance while he downloaded Tom’s presentation to his laptop. He then brought up the presentation and started asking for input on each of the questions.

The first question was: who will use our work?

Comment from Gerard: While the end-user will not look at the work, they will benefit from the work.

Comment from Mike: We could say that the end-user will benefit from the work.

Comment from Scott: End-users don't necessary benefit, they either buy things or they don't. The providers will benefit. He noted the situation of ADSL.

Question from Charles: Would you argue that the users did not benefit from that?

Answer from Scott: The end-users themselves don't care. Scott further observed that as manufacturers and vendors haven't sent anyone here, they are unlikely to consider themselves benefiting either.

Question from Charles: So who will use the work?
Response from Scott: The network people and the applications people. It's really about building the applications and rolling out the network. From that perspective comes the question about whether it's out of scope for this group to decide whether they can write things relating to the metrics and performance.

Comment from Mike: Let's not get too wrapped up in details. In answering the question on the slide "who will use our work" I would say "no, yes, yes, yes" (referring to the listed users in order).

In the interim, Scott asked: is there anyone in here who works for a manufacturer or OEM that would actually be interested in WPP? No specific response was received from the group, but some hands went up. Charles suggested that we could add user categories to the slide and then take straw polls to figure out the interest in including each category. Tom passed over the PowerPoint source to Charles so that he could edit it real-time. Scott suggested that the users from Dave's presentation (Planners and installers and maintainers of WLAN systems) should be included. A suggestion was also made that planners and installers could be lumped into "implementers". Tool developers was also added as an item on the list, as well as application developers. A short discussion ensued on what "tool" actually meant. The general consensus was that the "tool" category should be kept broad.

Scott stated that "application developers" was another category (such as Microsoft and Electronic Arts) that should be on the slide.

Question from Pratik: Are these software apps developers?
Answer from Scott: both software and hardware. Generally, network application developers.

Question: How do we differentiate between these two?
Response: There is probably no reason to do so.

Scott then stated that he was OK with leaving it as it is, and Charles then edited the slide somewhat. Pratik requested that the word "directly" be added to the slide title "who will DIRECTLY use our work". The straw poll was then conducted by Charles.

Before embarking on the straw poll, Scott then requested that someone with a specific need should be asked to indicate if they corresponded to the categories. Pratik noted that there were only about 20 people in the room, so the straw polls would be inaccurate. Mike noted that we have to make forward progress nevertheless. Gerard noted that he, as a test lab person, only deals with manufacturers; he doesn't care about the rest. Scott noted that we need to narrow the scope somewhat.

The question on whether to do the straw poll was called. As there was no objection to calling the question, Charles started the straw poll forthwith.

**Straw Poll #1:**
Which category will use the result of the WPP work? (Chicago rules)

Results:
- End-users: 2
- Manufacturers & vendors: 15
- OEMs, VARs and system integrators: 17
- Eval & test labs: 17
- Implementers: 15
- Maintainers: 9
- Developers: 13
- Application developers: 13

Some incidental discussion on the results took place. Mike noted that RSSI is a metric that is reported to the screen, and an end-user might therefore be interested in the metrics. Joe requested a clarification, is this about who reads the doc or is this about who looks at the metrics from the doc? Charles clarified that this is about who reads the doc. He then noted that the results showed overwhelmingly that end-users would not read our document, but we shouldn't feel hurt about that. Don noted that the lower number of people who thought that maintainers would read the doc might reflect the diversity of maintainers.
Pratik suggested that it was time to get into what our work is and why we should do it, and it is time to start consolidating it. There was some general agreement on this. Mike suggested looking at what the scope and purpose is supposed to be. Slide 6 of Tom’s presentation was put up. He asked the question “what is it we are trying to solve?”.

Larry proposed that we look at Gerard's statement. This was somewhat acceptable to the group. Mike, however, asked where we were in the agenda. Charles proposed that we should start on the synthesis of the scope and purpose, using Gerard's suggestion as a basis. Mike recommended that we could match this against Tom's statement of what a scope and purpose should convey.

Question from Pratik: Are we going to do this on the slideware, or should we use a PAR template?

Charles reminded the group that voting required 75%. Pratik pointed out that we were in no danger of adopting a PAR this evening. Don asked whether we could submit proposed PARs to the document server. Charles said that there was a convention for submitting and naming documents. Charles noted that for the HTSG PAR discussion in Monterey, Jon Rosdahl presided over a session where people were voting on each word, word-by-word. This was such a painful process that people then came back to the November meeting with complete scopes and purposes.

Question from Mike: would it be out of line to suggest that the key people get together in an informal session to craft a scope and purpose?

Charles assented, saying that people should huddle around the projector and PC to craft things. It would be a lot better than a loud booming voice in the back of the room. Charles then announced a short break to grab cookies and ice-cream before getting back to the informal crafting of the Scope and Purpose.

After the break the informal PAR crafting started, using a blank MS Word document and Fanny doing the typing. Mike proposed a new paragraph, which was added to the document. Pratik also proposed some new paragraphs. Charles showed the scope and purpose from HTSG. There was considerable discussion on the crafted paragraphs, as well as the meaning of performance. Numerous additional suggestions were put into the MS Word document. Tom recounted the experience of the 802.3z and 802.3ae SGs, which crafted both a short and succinct Scope and Purpose and an accompanying “Blue Book” of presentations that spelled out in detail the intentions of the SG members with respect to the details of the Scope and Purpose. The “Blue Book” was used as a sort of “bible” to guide the Task Group when there were questions about exactly what specific items were intended to mean.

The orders of the day were called at 6.05 PM. Charles declared the meeting in recess and requested everyone to come back at 7.30 PM to continue the discussion.

The meeting resumed at 7.40PM, with a review of the various attempts at the scope statements on the MS Word document. Fanny noted that Tom had suggested that it would be OK to have the scope and purpose vague enough as long one could have an accompanying "blue book" that spelled out things in more detail. Shravan proposed reading a paragraph from a document numbered 11-03/588r1 that had a scope plus additional sections that explained what they were talking about.

Scott suggested looking at the ITU service level performance metrics - throughput, latency, security and accuracy. These are the standard network services in a wired world. Charles suggested putting these down and then adding or modifying things to get this into a wireless world.

The question of service levels was brought up. Shravan thought that service levels might remind people of SLAs and so forth. Scott thought that SLAs might be useful to the users. Gerard brought up the work done in 802.1. There was considerable discussion. Fanny suggested that Pratik's wording was good. Gerard suggested a modification; Shravan also followed suit with another description. Roger Skidmore stated that you can't try, you must do. Therefore, phrases such as "help" or "try" don’t work here. Roger then referenced the 802.11k PAR and read it out.

Larry Green pointed out that we are presuming that there are only human beings who use wireless when we refer to “users”, but there are more automatic devices connected to the Internet today than there are humans, so we need to include these. There was some confusion about Scope vs. Purpose; this was clarified. Gerard suggested a variation: "to improve the services that an 802.11 WLAN provides." Pratik suggested that we could provide multiple sentences to cover what we wanted to convey in the Purpose. There was some discussion about service levels and some rewording.

Pratik noted that we are mixing up the Scope and Purpose in one paragraph. Instead, we should split the two and keep the Scope statement small and simple, and then have a list of benefits in the Purpose statement. Tom echoed this sentiment, and suggested a wording that split the existing paragraph into two, as the Scope and Purpose were mixed up in one paragraph. Joe requested a re-review of the 802.11k PAR to compare with the present attempt. Noman Rangwala stated that it was important to know when we were done.
Fanny suggested that measuring performance was a good first item in the purpose. Pratik took us back to his original WNG SC presentation (already on the document server), and noted that a number of the items that should be in the Scope and Purpose are already in that presentation. Pratik then sent his presentation to the people in the room via e-mail to save them the trouble of downloading it.

Mike echoed Noman's concern that we need to know when we are done. Scott Blue echoed this as well. Pratik noted that 802.11k was inserting a large number of measurements in an ad-hoc manner and we did not want to repeat this. Khaled offered an alternative phrasing for the Scope and Purpose. Pratik stated that he was the one responsible for the prediction portion. He offered the example of designing a chip, where there was a datasheet that specified what the chip was going to work over a certain range. Joe noted that the specs are specified over a range, and how do we as a Task Group come up with a way to do this? Mike noted that he could understand what Pratik was talking about; however, when they created a chip and sent it out, inevitably they got a phone call from a customer that complained that the chip did not work, and this was because of some measurement that they did not consider.

Fanny wanted to understand whether prediction would follow automatically, or whether we would have to do some work towards prediction. Mike clarified that he did not want some explicit prediction work in there.

Question from Noman: There are some specifications that guaranteed by design, perhaps that's what Pratik is talking about?

Roger Skidmore noted that cell phone people don't put in a tower without fully simulating the installation and deriving, within some error bounds, the basic performance that they can expect. Pratik agreed. He said that if he'd done more testing, he would have received fewer calls. One reason we need to start this group is that we all have this problem, and if we put our heads together we can come up with something that enables us to avoid those customer problems. Scott echoed this and said that what you can do in a lab has had no bearing on what occurs in the field. He gave some examples.

Shravan said that we are not going to define every possible parameter that a device can encounter. The right metrics should enable us to predict up to a certain point what the device can do.

Question from Fanny: What specifically do I need to do in order to predict?

Shravan answered: We have lots of scenarios where the WLAN card can be tested in TGn, and for every possible scenario there is a prediction method. Scott clarified this further.

Khaled noted that what we do is simulation in conjunction with measurements. Tom asked Roger whether there are any standards that enable people to predict performance from site simulations and propagation studies. Roger replied that it is absolutely possible to predict performance from a combination of propagation models and equipment models, but there are no standards that would cover this.

Mike questioned whether “use models” or “propagation models” were in scope. Larry shared Fanny's concern about predicting performance, as his experience has been one of great variation in the propagation situation. He specifically mentioned that the Navy was attempting to install WLANs in aircraft carriers, and radio waves “worked differently in steel ships”. (Laughter) He was very concerned about taking just seven usage models, as he thought that there were more like 70.

Gerard noted that we could take specific snapshots and then restrict ourselves to that. Scott noted that HP tried to take OpenView and do something for Wi-Fi but the result did not work. Pratik pointed out that a small number of the usage models could attack a large part of the market, and maybe we can spend 10% of the effort and cover 90% of the market.

Question from Fanny: Are we talking about predicting from measurements or from channel simulators?

Response from Pratik: We’re talking about prediction within a confidence interval.

Charles noted that the group needed to discuss teleconferences and other related business. The SG is empowered to do that until it is done. He asked if everybody was happy with the time and duration of the teleconferences, or whether they wanted to do what 802.11n was doing, and have a 2 hour teleconference every 2 weeks? Pratik suggested that we should talk to the others on the call first (who were not present at the meeting) and only then change the schedule or time. The final decision made was to stick with a 1-hour conference call. Charles also discussed the prospect of a motion to pre-authorize a request to convert the Study Group into a Task Group. Roger noted that it was good to provide a list of the people attending the SG in the closing report to the WG.

Discussion on the Scope and Purpose continued after these administrative matters. Fanny noted that we were enabling the industry to perform the prediction work and so we could put this into the Purpose statement as well. Considerable wordsmithing ensued. Roger Durand noted that eventually things could get consistent enough to enable 802.11k resource measurements and WPP measurements to be compared to each other. Mike proposed a straw poll on the document being used as a scratchpad. Charles suggested that we could distribute the document and work on it offline. Pratik objected
strenuously to distributing the scratch document, on the grounds that it was an incomplete document and was not suitable for
general distribution. It was ultimately decided that Fanny would e-mail the scratch document to Pratik, and Pratik would e-
mail to everyone else that was present at the meetings.

Charles then suggested that a motion to adjourn would be in order.

**Motion #4:**
Move to adjourn.
Moved: Larry Green
Seconded: Khaled Amer
The motion passed by acclamation.

The meeting adjourned at 9.35 PM on 3/18/04.

**Attendance**

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<tr>
<th>Bill McFarland</th>
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<td>Bob Mandeville</td>
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<td>Fanny Mlinarsky</td>
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<td>Feng Mo</td>
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<td>Gerard Goubert</td>
<td>Shravan Surineni</td>
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<td>Harry Worstell</td>
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<td>Joe Sensendorf</td>
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<td>Jon Rosdahl</td>
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<td>Khaled Amer</td>
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<td>Larry Green</td>
<td>Vivek Wandile</td>
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<td>Lars Falk</td>
<td>Walter Johnson</td>
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<td>Leo Monteban</td>
<td>Yaron Peleg</td>
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<td>Lily Yang</td>
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<td>Majid Malek</td>
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<td>Merwyn Andrade</td>
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<td>Mike Wilhoyte</td>
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<td>Niels van Erven</td>
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<td>Noman Rangwala</td>
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Abstract

Minutes of WNG SC meetings held during the IEEE 802 Plenary meeting in Orlando, FL from March 15-19, 2004.

1. Executive Summary:

1. Industry Update
2. Gigabit Ethernet presentations. Further study required.
4. Evolution. What is the future direction of IEEE 802.11 and where is it going.
5. Wireless Network Management presentation and motion to request that IEEE 802.11 WG form a Study Group. Motion approved.
6. Wake on WLAN presentation.
7. Interworking presentations.

2. Logistics

WNG Meeting called to order by TK Tan (Philips) at 4pm.

Agenda was reviewed (282r1) and no updates were required.
The objectives of the session were reviewed.

The IEEE 802 & IEEE 802.11 Policies and Rules were reviewed. Patents and By-laws read out by TK Tan, together with licensing terms and associated conditions.

There are 4 sessions this time, 2 on Tuesday 16th March 2004 and 2 on Thursday 18th March 2004.

The minutes from the Vancouver 2004 meeting (284r0) were reviewed. There was no discussion and no objection to approve as presented; minutes approved unanimously

3. Industry Updates

No ETSI BRAN or MMAC representatives present this time.

4. Gigabit Ethernet

It was noted that these 4 presentations are not in the normal IEEE 802 format, but this will be corrected before being placed on the server.

4.1. Gigabit Ethernet Secure Broadband WLAN : 341r0

GigE (Gigabit Ethernet) WLAN and GTTD (Gigabit to the Desktop). It is hoped that these will follow IEEE 802.11n in the evolution of high speed WLAN.

This presentation highlighted some of the issues about having to wire up APs within a campus type environment and shows wireless distribution to a high density of laptops.

[Note : IEEE rules state metric units must be used]

4.2. 60 GHz Gigabit Ethernet WLAN : 367r0

7 GHz of spectrum available within the 60 GHz band

Mentioned connection with newly formed IEEE 802.15.3c Millimetric Wave Group.

4.3. 60 GHz Propagation Analysis : 373r0

Various issues about 60 GHz propagation including why circularization polarization works well.

Shows that a typical indoor operating range is 50m with 10W transmitters.

Various issues about the (high) power of this system (40dBm : 10W)
4.4. IEEE 802 proposed medium access control : 374r0

Proposed MAC layer and comparisons with IEEE 802.16, IEEE 802.15 and IEEE 802.11

There was some confusion over this topic, as to the understanding of the MAC scheme. The presentation seems to be a set of requirements for the MAC layer, rather than a solution.

Evening Session of IEEE 802.11 WNG SC, Tuesday 16 March 2004, 7.30 – 9.30pm

5. Access Point Architecture Issues

5.1. Overview of IETF CAPWAP : 250r0

This involves the architectural considerations of Access Points

The IETF group CAPWAP (Control and Provisioning of Wireless Access Points) wishes to have close co-operation with IEEE 802.11 (Dorothy Stanley is liaison officer)

One idea is to split the MAC layer into real-time and non real-time entities and then to have an access controller with simpler access points.

Some questions about security, mobility and how to deploy these systems.

Questions about time constraints on the architecture and about some serious security holes that may arise.

5.2. Typical Access Points Architectures : 313r1

Introduction to typical access point software.

5.3. AP-AC Communications : 335r1

CAPWAP provides interoperability between Access Controller and Access Points. One question that was raised is should IEEE 802.11 be modified to accept CAPWAP as a new service?

Quite a few questions about the way forward for co-ordination with IETF CAPWAP.

Some points were:

- IEEE liaison is helping already and indeed now we have had these presentations within WNG.
- Way forward is perhaps a Study Group, or alternatively have more submissions within WNG.
• How does this relate to Wireless Network Management (WNM)? Perhaps there is some overlap with this group?
• This boils down to the definition of an AP architecture, which is not really well defined within the current IEEE 802.11 standard.
• Also has implications for WPP (Wireless Performance Prediction)
• Additionally there may be more than one solution to this issue, based on the security relationship between the AP and the AC.

Clint Chaplin then proposed a straw poll to take this forward to a study group:

"Move that WNG SC recommends that the WG forms a study group to look at the AP architecture with IEEE 802.11": 344r0
(Clint Chaplin, seconded by Mike Morton)

Move that this motion is postponed: 43,0,3 (yes, no, abstain)
(Dave Nelson, seconded by DJ Johnson)

Move to amend the original motion, revised the motion text to:
"Move that the WNG SC recommends that the IEEE 802.11 WG asks ExCom to form a study group (SG) in IEEE 802.11 to create a PAR and 5 Criteria to form a new task group that will describe the AP functions and behaviors": 344r1
(Clint Chapman, seconded by Donald Eastlake)

Some discussion about what the actual purpose of such a SG would be, does the work that this SG would carry out need to be further refined within WNG. Some opinions suggesting that further information about AP functionality would be useful for implementers (not necessarily a standard).

Motion to amend: 73,1,14 (yes, no, abstain)
Motion: 60,4,18 (yes, no, abstain). Motion Approved.

**Afternoon Session of IEEE 802.11 WNG SC, Thursday 16 March 2004, 4 – 6pm**

6. Evolution

6.1. Additional WNG topics of interest: 311r0

Identified key trends in WLAN evolution. Raised issues related to neighborhood awareness, co-existence and spectrum efficiency

Provides reference to paper discussing this topic in more detail.
Question about how we could move this forward. In response, it is suggested that we need to continue to assert that we can build radios that can co-exist. The publication of propagation models within IEEE 802.19 would be useful. This work is not currently being carried out within IEEE 802.19

6.2. Evolution or Revolution : 247r0

This presentation highlighted problems with IEEE 802.11 process and procedures, and some dangers that IEEE 802.11 technology might face in the future.

Also suggested some possible ways to address these issues

General consensus is that these problems do exist, brought on by the success of the IEEE 802.11 standard. A key aspect of IEEE 802 is its market driven focus.

It was pointed out that these issues are under discussion within the CAC (Chairman’s Committee), and there are a number of initiatives underway to try and address some of these problems.

6.3. Introduction and Call for Interest in Standardizing Wake on WLAN (WOWL) : 388r0

Allows remote administrators to wake up your machine, allowing it to operate in low power mode at other times when not in use.

Some concerns about power issues for WLAN environment versus the wired environment.

Suggested that this work be taken into the new WNM SG, which is an appropriate forum.

Evening Session of IEEE 802.11 WNG SC, Thursday 16 March 2004, 7.30 – 9.30pm

7. Interworking Issues

7.1. WLAN Backend System Security and WLAN Interworking Security : 407r0

Provided overview of various security issues and considerations for WLAN interworking.

Questions as to whether this is an appropriate for WIEN SG.

7.2. 3GPP WLAN Interworking Security : 408r2

More detail on the current 3GPP security architecture and solutions for issues for end-to-end WLAN security.

Identified some aspects where cooperation between 3GPP and IEEE802.11 would be beneficial, including user identity protection.
7.3. 3GPP WLAN Interworking Update : 254r0

Provided overview of status of some of the 3GPP SA2 interworking architectures and highlighted a number of aspects that have impacts on the IEEE 802.11 standard. The intention is for these to be discussed with respect to refining WIEN scope.

This triggered a debate about the scope of IEEE 802.21 versus the scope of WIEN, and these discussions will be continued in May, although WIEN SG is the best place to take this discussion.

A need for consistent terminology between WIEN and IEEE 802.21 was suggested, and both groups took on an action to work together in this area.

7.4. 3GPP Requirements for WLAN Selection : 222r0

Highlighted some of the aspects of using SSIDs for network capability advertisement that have been discussed within 3GPP.

8. Recess

TK Tan moved to recess the meeting, which was accepted unanimously.