Tentative MAC Minutes
Tuesday, November 8, 1994

The meeting was called to order by chairman Dave Bagby at 10:35 AM.

1. Administration

- Secretary: Carolyn Heide volunteers

- Comments on minutes from last meeting: none

Motion #1:	**To approve the minutes of the last meeting.**
Moved by:	Bob O'Hara
Seconded by:	Dave Roberts

Motion 1 Discussion: none

Approved: 29 Opposed: 0 Abstain: 1 ***Motion #1 passes***

- New Papers (newer than yesterday): none.

- Review goals:

- Other: It is noted that when sending large email putting the fact that it is large in the title would be nice.

2. Agenda

After discussion of the papers that were to be presented and their categories, suggested agenda:

1. administration
2. agenda
3. WDS
4. elements
5. security
6. PCF CF
7. state machine
8. DTBS
9. multirate
10. misc subjects
11. draft comments
12. new functionality

There is a suggestion that discussion of draft comments should come first. The chair feels the draft comments could be submitted as response to the letter ballot and therefore are less urgent.

Motion #2:	**To adopt agenda as proposed.**
Moved by:	Carolyn Heide
Seconded by:	Jon Rosdahl

Motion 2 Discussion: none

Approved: 27 Opposed: 0 Abstain: 3 ***Motion #2 passes***

Should comments and straw poll participation from non-voting members allowed? According to the rules only voting members may vote in formal votes, and anyone may participate in discussions.

Straw poll - voting members only, voting on whether nonvoting members participating in straw polls (19,10,2) Non-voting members please be responsible.

3. Wireless Distribution Systems (WDS)

Straw poll: How many people think it is worth going through these papers this week? (lots of yes, a few no) Will have 1/2 hour summary of each of the 2 proposals.

Proposed Revisions to the MAC Frame Formats to Support WDS, P802.11-94/248, presented by Bob O'Hara

Discussion:
Why not just use tunneling? Because of fragmentation - the size grows, if it gets too big, fragmentation gets involved and things get very complicated.
Fragment reassembly occurs at each intermediate.
A specialized AP with relay capabilities could be used. That is putting the DS in a single place. This proposal is a multiple point DS.

Frame Format Adjustment Proposal, P802.11-94/254, by Wim Diepstraten

Discussion:
There is some fear of so radically changing the addressing mechanism this late in the game.

Dave Bagby summarizes where he feels the proposers of these two WDS mechanisms stood when they meet last night to try to arrive at a compromise. Both groups agree: either proposal does the job equally well; the 94/255 failure probability is non-zero; 94/248 is guaranteed not to fail that way. They differ on the balance of the efficiency gain against the potential for failure, and the header field filtering done on rx or tx. The latter could be fixed by adding 254 filtering and field ordering to 248. Efficiency versus failure probability is at the heart of the matter. Dave would like Wim, Bob, and Mike Fischer (and any other parties that feel they can contribute) to speak over lunch - if they can't agree, the group will get into it after lunch.

Tuesday PM, November 8, 1994

Meeting called to order at 1:40 PM, by chairman Dave Bagby. Carolyn Heide secretary. The WDS people are not back yet, the element people not here. So...

5. Security

Straw poll: Is it ok that a paper be presented without an author? (12,0,6)

WEP, P802.11-94/249A, by anonymous, presented by Dave Bagby

Discussion:
Some feel that it is unnerving to get an anonymous paper with code in it and then to vote on that exact code for the standard, without knowing if it works or if there are any trap doors. More expert opinion would be nice. No authoritative publication presented causes discomfort. Dave can point to the servers across the world where the code can be found and to the expert people who have done the analysis on it already.

It is an option that goes somewhere out of the main stream like an informative annex - if it is no good, don't implement it. Maybe putting it in the standard is a good way to get verification. Changing it can be addressed by a letter ballot comment.

Motion #3: **On page 3 of 94/249: That the following detailed changes (derived from draft 20B3) be adopted and incorporated in the 20B4 802.11 draft standard and the Issues 6.6 and 6.10 be closed to reflect the adoption of the WEP proposal.**

Moved by: Dave Bagby
Seconded by: Chris Zegelin

Motion 3 Discussion:
Is there text for the draft standard? Editors can cut and paste as is (except for 2 page breaks).

Approved: 23 Opposed: 2 Abstain: 2 ***Motion #3 passes***

There is an **action item** for Dave ask Vic to get a magic number for the algorithm from 802.10

6. PCF CF

PCF Time-Bounded Service, P802.11-94/269, by Tim Phipps

The editors say the text from this document does not contain sufficient detail to go straight into the draft standard as is.

Discussion:
This is nice because it runs over the PCF with low impact. But there is opposition to using the same frame types to provide a different service class. Maybe reinstate TBS-up and TBS-down, rather than having one frame type for two different classes of service. That would be architecturally cleaner because TBS service class has priority. Looking at the duration field to make that decision is dirty.
Straw poll: how many want a PCF based TBS? (17, 4, 19)

Straw poll: how many people want Tim to go to the work of bringing actual draft standard text (with frame type changes) so we can vote to accept this week? (a lot, very few object)

3. WDS (con't)

At lunch the proposers of 94/248 and 94/254 decided a motion should be made to adopt 248 with frame field ordering changes, in the absence of some more data from Wim. They believe Wim has some efficiency changes that are significant and he should run simulations that prove the risk is minimal.

Using the full address fields, but reordered, is nice because simple DA/SA frames have implementation benefits - easier for sniffers and debugging in the future.

The only subject here is efficiency: the failure mode is a temporal efficiency, it relies on high level recovery; while not using MID approach creates efficiency problems because of sending more bytes to avoid the "problem" with the MID. This compromise restores the inadvertently broken AP-to-AP communication in 20b3, restores symmetry. It is the more conservative choice, and until we know more, the more likely to be safe by not changing the fundamental addressing scheme.

Motion #4: **that we adopt the changes in document 94/290 which reflect the compromise between documents 94/248 and 94/254 as expressed in the following bullets:**
248 base;
with 254 field order for filter approach;
AP bit back.
Wim data to be considered on its merits when it gets here.

as amended by motion #24:
that we adopt the changes in document 290r1 as presented which reflect the compromise between documents 94/248 and 94/254 as expressed in the following bullets:
248 base;
with 254 field order for filter approach;
AP bit back.
Wim data to be considered on its merits when it gets here.

Moved by: Bob O'Hara
Seconded by: Dave Roberts

Motion 4 Discussion:
Right now we are getting feedback from lunch meeting where they tried to identify fine points in each paper - it is premature to put into motion what they are supposed to come with. As a body we must examine the paper that returns as a result of the compromise on its own merits.

Motion #5 : **to postpone to definite time of Wed after lunch in the MAC group.**

Moved by: Dave Roberts
Seconded by: Bob O'Hara

Motion 5 Discussion: none

Approved: 31 Opposed: 2 Abstain: 2 ***Motion #5 passes***

Motion #4 postponed

"Analysis of B3 vs. MID" P802.11-94/270 is to be skipped as a result of the compromise motion above.

4. Elements

Element Requirements for BSS Synchronization, P802.11-94/240, by Greg Ennis

Motion #6: **to adopt the changes on page 4 of 94/240 except the last sentence "The editors ... specification".**

Moved by: Greg Ennis
Seconded by: Bob O'Hara

Motion 6 Discussion:
The editors agree they have enough information to implement this.
There is a brief discussion about whether "oldest" is sufficient information on which to coalesce. It is agreed that it is enough.

Approved: 27 Opposed: 1 Abstain: 6 ***Motion #6 passes***

Proposed Encoding for the Management Information in MAC Frames, P802.11-94/282,
presented by Bob O'Hara

There is a general dislike of some PHYs having to carry around fixed fields they don't need (e.g. the IR PHY and the hop information) rather than optional elements, even though those fixed fields can simply be a length octet equal to zero - a place holder.

There is a lot of fear about fixed length information fields - what if the information changes later? There is a suggestion that all elements should be variable length. Bob O'Hara says if we don't know enough about what were doing to fix these things, then were not ready to write a standard. It is possible that the division of elements into fixed and variable length fields presented here is imperfect, it can be changed by letter ballot.

There is concern over variable length (8 or 16 bit) length - perhaps using the high order bit of the first octet to indicate whether the length is 1 or 2 octets would be a good idea. If all fixed fields were variable length then this could solve the problem of information change in the future.

Adding elements in the future has an appearance of being easier than adding fixed fields - if an old station sees an element it doesn't recognize it just ignores it. Variable length fixed fields are just as easy to add - new fields

get added to the end, and when you reach the end of those you expect, you just ignore the rest based on their length fields.

Some see fixed fields as limiting for future flexibility. When the information in a field is obsoleted you have carry around a zero length octet for that field forever rather than just dropping an element. Either approach causes incompatibility problems - a null field or a missing element will be unacceptable to a station that relies on the information carried in that field or element.

If you can't reorder non-optional elements, then there is no difference between those and fixed fields except that elements take more octets. Where elements can be optional or re-ordered, fixed fields don't work - all fields are mandatory, but those you don't use take only one byte - the zero length.

Motion #7: **to adopt the changes proposed in 94/282.**

Moved by: Bob O'Hara
Seconded by: Dave Roberts

Motion 7 Discussion:
The problem of fields that have to be included all the time, where optional elements could be left out, may extend itself to ad-hoc and infrastructure differences as well as PHY differences.

Perhaps there is a compromise somewhere, as there are good concepts on both sides of the argument. Fix anything that can be into fixed fields, make the rest elements.

There is a lot of support for the flexibility and self defining nature of the element structure. Perhaps some elements could be grouped for efficiency. The problem of different PHYs carrying around irrelevant information could be solved by a single variable length field dependent on PHY type.

Motion #8: **to amend: to delete sections 4.4.1.16 through 4.4.1.19, and add a single variable length information element to sec 4.4.2 which would carry PHY specific information.**

Moved by: Simon Black
Seconded by: Jon Rosdahl

Motion 8 Discussion:
The idea of the amendment is to keep the PHY specific information in one place so it can be substituted for which ever PHY is appropriate. The field contains different information according to PHY type.

Those against the amendment believe it masks problem with fixed fields and may break other things. It is too hasty a design on the fly - it doesn't describe elements necessary to allow FH to work. It is described as "rearranging the deck chair on the Titanic".

Motion #9: **to amend the motion to amend: add to the end of the amend: that the elements all be encoded thusly:**
it shall be composed of a length followed by a one byte PHY type field to have a unique value for each supported .11 PHY type. followed by a fixed set of fields per PHY which may contain variable length fields.

Moved by: Dave Roberts

Motion #9 has no second

Motion 8 Discussion (con't):
Against the amendment is also that it does not supply specific text for this specific element to go into the draft. Some recommend the procedure - defeat this motion, accept fixed fields, then use letter ballots to correct deficiencies introduced.
Call the question: Bob O'Hara, second Greg Ennis (24,0,2)

Approved: 2 Opposed: 25 Abstain: 3 ***Motion #8 fails***

Approved: 10 Opposed: 14 Abstain: 4 *Motion #7 fails*

Selective Insertion: A Constrained Alternative to Elements, P802.11-94/255,
presented by Michael Fischer

Michael is in favor of the element format change and usage rules proposed in this paper, but would be willing to drop the selective insertion idea. The selective insertion idea is to allow fixing of things that are broken that we don't know about yet. Those against selective insertion (which is pretty much everyone) feel that at the time we know about what's broken we will know how to fix it, so why try to second guess the way to fix it now. Michael agrees not to bother presenting the motion to accept the selective insertion mechanism - selective insertion is dead.

Some people object to usage rule 'C', elements not understood get ignored, feeling it opens the door for proprietary information. Only things standard should be in the standard. Others feel that the element structure is no more open to abuse by evil vendors than anything else. Use of elements not listed in the standard causes an implementation to be non-compliant. People will try to subvert the standard whether we include mechanisms for our use or not. Elements are a fairly easy dishonesty to spot.

Motion #10: **To adopt usage rules a through d from slide 6 doc 255A, and the element format from slide 5 from slide 5 doc 255A.**

Moved by: Michael Fischer
Seconded by: Pablo Brenner

Motion 10 Discussion:
The text for the draft standard is supplied.
There is more discussion of abuse of elements and whether it can be detected.

Motion #11: **To amend the previous motion:**
to remove phrase and "selective insertion codes" from point D;
change bullet a to "... and shall be used after the fixed fields in the payloads of such frames."

Moved by: Dave Bagby
Seconded by: Pablo Brenner

Motion 11 Discussion: none

Approved: 17 Opposed: 0 Abstain: 6 *Motion #11 passes*

Motion 10 Discussion (con't):
Call the question: Rick White, second Greg Ennis (21,1,2)

Approved: 16 Opposed: 4 Abstain: 4 *Motion #10 passes*

12. New Functionality

MAC Specification Issues, P802.11-94/285, by Tim Phipps

Motion #12: **That the estimated power saving state of another station be based on the power management information transmitted by that station and additional information available locally (such as history of failed transmission attempts) which may be deemed relevant.**

Moved by: Tim Phipps
Seconded by: Michael Fischer

Motion 12 Discussion: none

Approved: 21 Opposed: 0 Abstain: 2 ***Motion #12 passes***

Motion #13: **That timing synchronization be maintained in an adhoc network by adjusting a synchronized timing reference to be the average of itself and any time stamp received from another station.**

Moved by: Tim Phipps
Seconded by: Greg Ennis

Motion 13 Discussion: none

Approved: 20 Opposed: 0 Abstain: 3 ***Motion #13 passes***

Motion #14: **That in a network there shall be at least one node that is awake at any given time to respond to probes.**
In an ad hoc network probe responses shall be sent by the station that sent the last beacon.
Stations do not need to cancel a pending probe response transmission if they observe a successful probe response from another station in the same network.

Moved by: Tim Phipps
Seconded by: Greg Ennis

Motion 14 Discussion:
There is a power conservation trade off against the speed with which you will detect the presence of an ad hoc network. Possibly the guy sending the probes should be the one to expend the extra power.
Straw poll: who is in favor of postponing to agenda first thing tomorrow morning so there is time to think about this motion? (18,0,6).

Motion #14 postponed

Meeting adjourned: 7:30 PM

Wednesday AM, November 9, 1994

Meeting called to order at 8:35 AM, by chairman Dave Bagby. Carolyn Heide secretary.

6. PCF CF (con't)

MAC Specification Issues, P802.11-94/285 (con't), by Tim Phipps

Motion 14 Discussion: none

Approved: 17 Opposed: 1 Abstain: 9 ***Motion #14 passes***

5. Security

Overnight there have been some people concerned about the legal or ethical issues of the algorithm proposed. The algorithm in 94/249 is one that was published on the Internet. Some people believe it is the same as the RT

algorithm. So it doesn't cause problems at the plenary where we have a lot more important things to be concerned about -

Motion #15:	**That the WEP proposal be modified as follows: The specific PRNG algorithm used within the proposal shall be unspecified in the draft at this time (and the issues referred to be left open). Reviewers are encouraged to comment in letter ballot responses on appropriate PRNG algorithms for consideration. The "WEP algorithm specification" section of doc 94/249, when transferred into the draft, shall be replaced with the text: "Reviewers are encouraged to comment on appropriate PRNG algorithm for adoption by 802.11".**
Moved by:	Chandos Rypinski
Seconded by:	Tom Tsoulogiannis

Motion 15 Discussion:
Motion modifies the already distributed document.

Approved: 19 Opposed: 3 Abstain: 8 ***Motion #15 passes***

Straw poll: deal with multirate now? (vote is very even). Same poll, voting members only? (13,12).

9. Multirate (Doc 94/247B)

Pablo briefly describes 247B contents. PLCP rate is a PHY issue, each PHY defines it.

8. DTBS (Doc 94/258x)

This proposes not an application that gets higher priority, but a service that the stations need - giving it higher priority can help them. Also, it's not absolute priority, it doesn't lock out the stations by having a shorter gap or anything, it just gives a higher probability of the AP getting through.

Straw poll: How many would like the AP to have more priority to the channel for async traffic? (slightly more negative than positive, but very close).

This lowers the speed with which association and reassociation could happen since they are station initiated. That hurts roaming capability - hand-off needs to be done in a timely manner. On the other hand, if the AP can't get through to do the association response the same problem occurs.

An AP has a limited resource and has to handle much more traffic than a station. On a heavily loaded network the AP needs higher priority to shed its load. But all stations have resource limits - the AP has more to do, but probably has more resources too. The traffic load at the AP is generated by the load at the stations.

It has been measured on existing client/server networks that giving a server priority does not provide better service. In fact performance is better if the server and client have the same priority.

The proposal gives the AP a better chance, as it has a different contention window, not actual priority - it doesn't block out stations, just increases the odds of success for the AP.

There is a different context in which this can be viewed: with the shared medium this gives higher priority to infrastructure networks than ad hoc networks. This gives an AP ownership of a physical area.

Straw poll: Should we leave this subject at end of current discussion? (more yes than no)

This is a tweak where nothing is broken. There are no simulations to show what the results are with and without the modification.

10. Miscellaneous Subjects - 802.2 paper

Need for Partial MAC Frame Check Sequence Checking, P802.11-94/245, liaison from IEEE P802.2

There is some thought that the intent of that paper is - creating a service type in LLC for multi-media use, where the information being communicated can tolerate some errors. It is better to deliver an errored frame than to deliver none at all.

As the 802.2 liaison isn't here to present that group's concerns, this group doesn't feel that it has enough knowledge of the request to handle the subject.

11. B3 Review Comments

Draft Standard Document P802.11-93/20B3 Comments, P802.11-94/251, by Frederic Bauchot

The top five comments:

2 - compression dealt with at MAC layer. It should be the first operation applied to the data stream in MAC layer.

7 - common authentication scheme. Dave Bagby thinks this is already dealt with - perhaps the text is unclear.

10 (privacy algorithm) & 24 (DTBS) - clearly underway in presentations made this week.

45 - this suggestion causes PCF and TBS support to be changed from optional to be mandatory, Frederic believes this is required to meet the PAR. The PAR is quoted as saying 'a service supporting packetized voice' must be provided. Some people feel that we can meet this without TBS or a PCF.

Discussion:
In agreement with point 3 - on the subject of association in the adhoc situation the draft is confusing.

No carrier sense before ACK, point 30, is intentional - if you send no ACK because the medium is busy, it is sure that you will have to retransmit. If you send an ACK there is a possibility of interference, but a possibility that it will go through. That's the nature of CSMA - the SIFS should take care of it, but sometimes it won't.

How will these comments, which point out things that the authors believe are broken about the draft standard, get dealt with? Letter ballot comments - all have to be addressed by the group and settled.

12. New Functionality (con't)

The author doesn't believe this is new functionality, it addresses a problem - how the DIFS should be specified. Straw poll: does the group want to consider this? (lots of yes, few no)

Smart DIFS, P802.11-94/257, by Wim Diepstraten

Having a shorter DIFS in one situation may be a good idea, but using CCA to judge the length of a frame with a CRC error is not looked at as a good idea by a lot of the group. RTS/CTS is the mechanism for dealing with hidden nodes - the NAV update mechanism. CCA is not reliable and cannot be guaranteed. CCA may not come and go without direct correlation to the beginning and end of a frame.

The controversy seems to be on depending on CCA length for ACK detection. What if algorithm remains the same but only method allowed for determining that the previous frame was an ACK is seeing an ACK? Wim thinks it is not critical to the proposal - it would be an improvement even without ACK detection by CCA. But a lot of cases would have to rely on the CCA - RTS/CTS will not handle hidden nodes. There are people who agree that the CCA mechanism could be used to help, but many who don't like it.

Motion #16: **To adopt the Smart DIFS mechanism as described in this contribution, with the second of the two ACK detection mechanism (CCA length) removed.**

Moved by: Wim Diepstraten
Seconded by: Don Johnson

Motion 16 Discussion:
Some feel that this does not help the hidden node situation at all. It is just a slow down because of defaulting to a longer DIFS. Don't think the problem is going to occur often enough to warrant the throughput loss. Problems caused by hidden nodes should be solved by network reconfiguration just like load problems.

Wim sees this as a throughput performance gain. The normal DIFS will have to be the longer one, he is not proposing making that any longer. He is proposing once case where it can be made shorter.

Call the question: Sirosh Vesuna, second Bob Egan (15,12,7) fails

Is the level of complexity worth the gain of a little efficiency? Most medium accesses are after ACK, so a gain here is very valuable. But no numerical evidence has been presented that the DIFS is going to have to be that long. Without that assumption the value of the proposal is null.

The short DIFS after ACK detection gives priority to those stations which heard the ACK without error (if used without the CCA length ACK detection). This breaks access fairness.

Cannot vote on this motion because the exact text is not provided for the draft standard.

Motion #17: **to postpone to tomorrow AM .**

Moved by: Rick White
Seconded by: Bob Egan

Motion 17 Discussion: none

Approved: 21 Opposed: 3 Abstain: 5 ***Motion #17 passes***

Motion #16 postponed

Straw poll: who would be in favor if the vote was taken now? (9,23,1)

Straw poll: what would be vote be on the motion before the amendment in favor (5,28,1)

Wednesday PM, November 9, 1994

Meeting called to order at 1:08 PM, by chairman Dave Bagby. Carolyn Heide secretary.

General

In the compromise between 94/248 and 94/254 some corrections to the draft were 'lost'. They are in 248A but not 248.

Motion #18: **that the corrections to B3 section 2 contained in slides 77 through 86 of 94/248a be adopted and incorporated into the next draft (the text and diagram needed is contained in those slides).**

Moved by: Michael Fischer
Seconded by: Dave Roberts

Motion 18 Discussion: none

Approved: 19 Opposed: 0 Abstain: 7 ***Motion #18 passes***

10. Miscellaneous Subjects (Con't)

Liberating The "More" Function, P802.11-94/283, by Michael Fischer

Motion #19: **To permit stations, as well as APs, to use the More indication when additional buffered frames are present.**

Moved by: Michael Fischer
Seconded by: Wim Diepstraten

Motion 19 Discussion:
This is referring to more MSDUs, not more fragments of the same MSDU.
It is thought that what Michael describes was the intent of the original proposal, it must have been lost somehow along the way.

Approved: 26 Opposed: 0 Abstain: 3 *Motion #19 passes*

Motion #20: **to combine the Sequence Number and Fragment Number into a 16-bit field, while reducing the size of the Fragment Number sub-field to 4 bits with a corresponding increase in the size of the Sequence Number sub-field.**

Moved by: Michael Fischer
Seconded by: Wim Diepstraten

Motion 20 Discussion:
There is concern over the reduction of the fragment number because of fragments having to be shortened at the end of the hop dwell. However the maximum expansion maybe only one or two fragments due to dwell boundary crossing. 16 fragments seems plenty. It depends whether you are allowed to fragment into smaller than 256 octets for any other reason than a dwell boundary - if so then we have lots of problems.
The fragmentation should be bounded so it doesn't take so long to send (and handle retransmission of) the MSDU that higher layers time out.

Approved: 24 Opposed: 1 Abstain: 5 *Motion #20 passes*

Motion #21: **To adopt the frame header changes affecting the More, Power Management, Fragment Number, and Sequence Number fields described in submission 94/283.**

Moved by: Michael Fischer
Seconded by: Dave Roberts

Motion 21 Discussion: none

Approved: 26 Opposed: 1 Abstain: 3 *Motion #21 passes*

Straw poll: All fragments must be even (modulo 2) octets in length except the last - how many have a good reaction to this? (23, 0). How about a good reaction to modulo 4 instead of modulo 2? (11). How about a good reaction to modulo 8? (0).

12. New Functionality (con't)

Tx-Power Control Provisions in the MAC, P802.11-94/259, by Wim Diepstraten

The major concern is the large overhead making RSSI available on every data transaction. Some would like to see it as an option, as it is too high a cost for stations that don't want to implement it. But we are supposed to be trying to avoid making options.

Is there a regulatory requirement for power control? No, and people don't like putting in things that are for future extensions, no requirements today.

Is there no way the PHY can do this without the MAC? If the algorithm requires a specific destination to be known, the MAC must be involved to decipher addresses.

There is concern about the time variant nature of the tx power information - is the RSSI value you used to tx to some one valid the next time you send to him. Wim says he is proposing a way to transfer the information, not the algorithm used to process that information.

Others feel that time variance does not make this information worthless. We use tx power control in talking in a big room like this. Seems that technically this could be made to work - the question is do we suffer the overhead for it. There should be no issue with effectiveness of tx power control. There is a demonstrated need for this in papers presented back in 1992. We need to increase the efficiency of medium reuse and this is a good way. We are our own interferers, this will help that.

There does not seem to be a single MAC group position on this issue.

Motion #22: **That this discussion be continued in the joint meeting this afternoon.**

Moved by: Bob Egan
Seconded by: Pablo Brenner

Motion 22 Discussion: none

Approved: 30 Opposed: 3 Abstain: 4 ***Motion #22 passes***

3. WDS (con't)

A Compromise Proposal for Revisions to the MAC Frame Formats to Support WDS, P802.11-94/290, presented by Bob O'Hara

Motion 4 Discussion: (Con't)
There is a discussion of whether the duration field should be moved to a fixed location because it is processed in almost every frame.

Motion #23: **to adjourn until immediately following the joint MAC/PHY meeting.**

Moved by: Michael Fischer
Seconded by: Bob O'Hara

Approved: 33 Opposed: 1 Abstain: 3 ***Motion #23 passes***

Meeting adjourned: 3:15 PM

Wednesday Evening, November 9, 1994

Meeting called to order at 5:35 PM, by chairman Dave Bagby. Carolyn Heide secretary.

3. WDS (con't)

A Compromise Proposal for Revisions to the MAC Frame Formats to Support WDS, P802.11-94/290 (con't), presented by Bob O'Hara

Motion 4 Discussion (con't):

Motion #24: **to amend motion 4 from to adopt 290 to be to adopt 290r1 as presented.**

Moved by: Bob O'Hara
Seconded by: Dave Roberts

Motion 24 Discussion:
Why the duration field is first - the issue has never been what order the fields came in but that they always came in a uniform place, relative to the frame start, for frames that need to be processed in real time by the receiver. To make implementation easier.

This proposal adds a duration field to the poll which it didn't have before - this is high overhead for a PSP station, one poll for each data frame. Putting the SID field up into the duration field for a poll makes sense, moving it from the data area - this discussion is terminated because that correction can be suggested in a letter ballot.

Call the question: Michael Fischer, second Barry Dobyns (no nays)

Approved: 22 Opposed: 2 Abstain: 5 ***Motion #24 passes***

Motion 4 Discussion (con't):
Why does section 4.1.2.6 receiver address specifically exclude multicast and broadcast? This is used only in data frame, specifies the AP for which the frame is destined. Mutlicast is not appropriate because the DS is directing the data AP by AP to where it should go.

Motion #25: **to amend motion 4 to use the duration field in the poll frame format to carry the SID (station ID) information.**

Moved by: Jon Rosdahl
Seconded by: Sarosh Vesuna

Motion 25 Discussion:
The arguments against are: frame formats are organized with duration consistently in the same field. The duration is something that needs to processed real-time by every receiver. It could be copied simply into the NAV without this amendment (if it is left zero when meaningless as in the poll). With the amendment the receiver must verify that the frame is not poll first. Breaks consistency and simplicity of frame format; Differing frame formats increases implementation costs; it constrains SID length forever.

The arguments for are: the field cannot be a simply copied into the NAV - it may be copied real time somewhere but not directly into the NAV, so the decision to use it or not can be made non-real time; Can't conceive of more the 65,000 stations associated with one AP, so SID size is not a problem.

Approved: 10 Opposed: 14 Abstain: 10 ***Motion #25 fails***

Motion 4 Discussion (con't):
According to Chandos the purpose of 3rd and 4th address fields is to provide relay. Case 6 in the diagram is a redundant and unnecessary system configuration. If the DS does what it is defined to do this function is not necessary. Relay between 2 APs doesn't belong in the current protocol.

Motion #26: **to delete address fields a3 and a4 from frame format and delete reference to case 6 in 248 from consideration.**

Moved by: Chandos Rypinski

Motion #26 has no second

Motion 4 Discussion (con't):
With the constraint of no broadcast, if a broadcast is received from a station to DSS, the AP must send one copy to each other AP it knows on the DS.

Motion #27: **delete sentence 4.1.2.2.6 "the individual group bit shall always be transmitted as zero".**

Moved by: Pablo Brenner
Seconded by: Jon Rosdahl

Motion 27 Discussion:
There is a feeling that multicast/broadcast in a wireless AP grouping may cause problems. This problem needs attention and more thought. It is a good subject for letter ballot.
Call the question: Dave Roberts, second Simon Black (one nay)

Approved: 3 Opposed: 19 Abstain: 10 *Motion #27 fails*

Motion 4 Discussion (con't):
Call the question: Dave Roberts, second Simon Black (no nays)

Approved: 27 Opposed: 1 Abstain: 6 *Motion #4 passes*

6. PCF CF (con't)

PCF Time-Bounded Services, P802.11-94/269, by Tim Phipps

Motion #28: **to adopt paper 269v2 into the standard without the last 2 lines from page 3 "Constants... 500ms".**

Moved by: Tim Phipps
Seconded by: Frederic Bauchot

Motion 28 Discussion:
A lot of people are in favor of this. The text is good enough for the editors.
In Vancouver the group chose to have only one TBS, and if only one, it would be the DTBS. The things required to enable DTBS got rejected again today. To add this service results in one and a part TBS in the draft, which contradicts the previous decision. If this passes here, the MAC chairman believes that the plenary giving it 75% would change the previous decision. It would have to be pointed out to the plenary what excepting this means.
Call the question: Michael Fischer, second Carolyn Heide (no nays)

Approved: 15 Opposed: 1 Abstain: 8 *Motion #28 passes*

Motion #29: **To adjourn.**

Moved by: Simon black
Seconded by: Tim Phipps

Approved by consensus *Motion # 29 passes*

Meeting adjourned: 6:49 PM

Thursday AM, November 10, 1994

Meeting called to order at 8:41 AM, by chairman Dave Bagby. Carolyn Heide secretary.

12. New Functionality (con't)

Smart DIFS, P802.11-94/257, by Wim Diepstraten

Wim declines to continue with 257 because he believes there isn't much hope of success.

13. Goals for January

The letter ballot will still be open by the January meeting time. Some ballots may be in, but they won't be organized, looking at them first could result in a lot of duplicate effort. Also, the meeting is scheduled for 1 week after return to work from holidays. There are not many work weeks between now and the next meeting. The MAC chairman recommends canceling or delaying the next interim until after the letter ballot comments are in and organized. The latter is difficult to arrange and also pushes close to the March meeting.

Canceling causes a problem for those who must attend to be able to vote.

The ballot processing mechanism merges and sorts all comments so they are grouped by section number, which probably won't be done until all ballots are in. It would be inconvenient to try to address individual comments prior to this. Also, it may be against rules to look at votes before voting time is closed.

A lot of people would like to work on conformance testing issues. Some say compliance against what since the standard is out at ballot?

Rick White quotes Vic's actual schedule: Dec 5-9 distribute draft; Dec 12-16 mail ballot, 40 day response period; Jan 23-27 response deadline; Jan 30 - Feb 10 tabulate responses. Feb 13-17 distribute results. Vic's schedule also specifically says the Jan meeting must not the address draft standard due to the letter ballot.

Straw poll: how many think it does not make sense to hold the January meeting? (a lot). How many just want to have a meeting (some, not many).

It is believed that the PHY groups have decided to meet, they feel there is a lot of work to do. Additional work can begin on conformance, informative annex, etc.

Motion #30:	**resolved that the MAC group recommends that the Jan meeting be:** **1) held as scheduled;** **2) canceled;** **3) abstain.**
Moved by:	Barry Dobyns
Seconded by:	Carolyn Heide

Motion 30 Discussion:
What do we have to produce as far as conformance testing goes? Dave doesn't know. A lot of people feel that in January the group could start thinking about what that might be.

Motion #31:	**to table motion 30.**
Moved by:	Jon Rosdahl
Seconded by:	Simon Black

Motion 31 Discussion:
In favor - we have to sort out what we have to do before we decide whether to do it.

Against - this just says we don't care. No more information about what needs to be done will arise in the next few hours. We have to decide, let's decide now.

Approved: 10 Opposed: 14 Abstain: 9 ***Motion #31 fails***

Motion 30 Discussion:
What else do we need to do? Dave doesn't know - has been too focused on getting this to letter ballot. Dave apologizes for this failing on his part.
There is a suspicion that the first draft conformance test letter ballot is supposed to go out in July.
Call the question: Tom Baumgartner, second Rick White (no nays)

Vote: 1-22 , 2-3 , 3-8 ***Motion #30 = hold Jan MAC meeting as scheduled***

6. PCF CF (con't)

Simplified CF-Async, P802.11-94/252, by Michael Fischer

Why did Michael specify that management frames not be sent in the CF period? Thought it was simpler and will work. There is speculation as to whether we gain anything by allowing it - nothing is broken if they are allowed. Possibly beacons must be sent during the CF period - the longer the CF the more desirable to send a beacon during it. If that is so and this gets adopted, it can always be fixed by letter ballot comment.

Motion #32: **To adopt the changes to contention free asynchronous operation including frame types/subtypes, usage rules, IFS durations, etc., as defined in doc 252: and to modify the updates to section 4.1.2.1.2 to designate the "reserved" frame type (type code=11) as "time bounded" frame type.**

Moved by: Michael Fischer
Seconded by: Greg Ennis

Motion 32 Discussion:
Is there a need for poll frame type, if data type with no payload has the same function? Michael is worried about informing the LLC - is it consistent with 802 to not inform the LLC of a null payload MSDU. But if there is no LLC header then there is nothing to indicate to the LLC. Michael says mac.data.indicate means notify LLC, header or not.

There is a discussion about whether a SIFS is too small for a PCF to decide that the ACK it got to a data frame is good or not, and therefore decide whether the retx or tx a new data. Michael feels this is irrelevant to this proposal.

Approved: 18 Opposed: 2 Abstain: 12 ***Motion #32 passes***

10. Miscellaneous Subjects

Outcome of MIB Ad-hoc Meeting, P802.11-94/293, by Tim Phipps

Motion #33: **to accept MIB changes rec from the Monday MIB meeting.**

Moved by: Tim Phipps
Seconded by: Simon Black

Motion 33 Discussion:

Approved: 28 Opposed: 0 Abstain: 6 ***Motion #33 passes***

Motion #34: **The following element should be added to section 4.4 of the draft standard:**

Hop dwell time
This field shall indicate the duration of the dwell period. It is two octets in length and represents the dwell period in milliseconds.

Moved by: Greg Ennis
Seconded by: Mark Demange

Motion Discussion:
There is a discussion about using milliseconds instead of microseconds. It is inconsistent with other fields, but sensible.
This is already in section 4.4.2 .

Motion #34 withdrawn

14. MAC group report review

The chairman reviews the report he will make to the plenary.

There is concern about the motion which instructed Wim to do stuff and bring back the results - what happens if Wim comes back with great stuff (the probability of failure minuscule and we want to adopt the MID concept in frame format)? The group will vote at the time as on anything else.

There are no objections to the report.

There is a request for security related information to be put onto the reflector. Dave says he can put information on the reflector pointing toward the places to find it.

Motion #35: **To adjourn.**

Moved by: Jon Rosdahl
Seconded by: Glen Sherwood

Approved: by consensus ***Motion #35 passes***

Meeting adjourned: 11:15 AM