MINUTES FOR THE MAC GROUP
IEEE 802.11 INTERIM - SEPTEMBER '94
SAN ANTONIO

CHRIS ZEGELIN
SYMBOL TECHNOLOGY
1101 S. WINCHESTER BLVD.
SAN JOSE, CA. 95128
(408) 249-9890
chrisz@psd.symbol.com

FIDDLED WITH THE LIGHTS FOR 10 MINUTES

PRESENTED AGENDA

MINUTES FROM JULY APPROVED UNANIMOUSLY

NO PAPERS FROM JULY TO PRESENT

SPENT TIME SORTING OUT THE PRESENTATION OF PAPERS

STRAW POLL, FRAME FORMATS FIRST, PASSED

PAPERS

94/180 LIFE WITHOUT RTS

DISCUSSION

CHANGE MPDU TO MSDU
QUESTIONED THE NEED FOR A DEFAULT VALUE THAT REQUIRES RTS/CTS BE ON FOR ALL FRAMES.
WOULD EXCEPT A FRIENDLY AMENDMENT TO STRIKE DEFAULT
POSSIBLE DIFFERENCE BETWEEN FRAGMENTED OR NOT. MSDU IS WHOLE FRAME, MPDU IS FRAGMENT OR UNFRAGED MSDU.

MOTION: THAT THE PROPOSED TEXT CHANGES IN 11-94/180 BE INCORPORATED INTO THE DRAFT

BARRY DOBYNS, 2ND: DAVE ROBERTS

MOTION TO AMEND: STRIKE THE LAST SENTENCE ABOUT DEFAULT.
WIM DIEPSTRATEN 2ND: MIKE FISHER

DISCUSSION

DO NEED A DEFAULT, SOME SAY NO.

PASSED BY MANY TO 1 (VOICE)

BACK TO MAIN MOTION
DISCUSSION

CLARIFICATION: MPDU IS THE NUMBER TO COMPARE WITH THRESHOLD.

MOTION TO AMEND: CHANGE ALL REFERENCES TO PAYLOAD TO MPDU
MIKE FISHER 2ND: CHRIS ZEGELIN

DISCUSSION
ALL MARK UP GOES INTO STANDARD.
ORIGINAL DOCUMENT USES MPDU DIFFERENTLY. SPEAKING AGAINST. MPDU IS USED TO DESCRIBE A SEQUENCE.
THE AMENDMENT USES MPDU CORRECTLY.

MOTION TO TABLE: NO SECOND.

BACK TO DISCUSSION
VOTE ON AMENDMENT: 22,1,4 PASSES

BACK TO DISCUSSION OF MAIN MOTION
MISSING A TERM, TEXT NOW BROKEN, MSDU LESS THAN MPDU SO NOW RTS MUST BE USED.

VOTE 14,6,3 PASSED MY MAJORITY

MOTION: FIX ONE 'MSDU' IN TEXT TO BE MPDU TO FIX PROBLEM. (THE SLIDE HAS THE DETAILS)
BARRY 2ND: MIKE FISHER

DISCUSSION
CAN WE USE -1 TO BE A SPECIAL NO RTS VALUE

MOTION: TO CALL THE QUESTION
BOB OHARA 2ND: MIKE FISHER

VOTE UNANIMOUS BY VOTE

BACK TO MOTION

VOTE: 19,0,5 PASSED

NEXT PAPER: 94/181 STANDARD RANDOMNESS

DISCUSSION
RANDOM NUMBER GENERATORS ARE DIFFICULT, LEAVE IT OPEN.

BREAK AT 3:00

BACK AT 3:25

OTHER WAYS TO DO THIS, DESIRABLE CHARACTERISTICS NEED TO BE IN DRAFT.
NO MOTION TO BE MADE.

NEXT PAPER: 94/170 FRAME FORMATS

DISCUSSION
1. re: sequence number

1.1. Wim points out that the sequence number without a qualifying address is not as reliable to tie the pieces of a multiway exchange together
1.2. Rick White mentions the much higher (with 8bit sequence number) to treat a sequence collision as acknowledging a frame that has not been received
2. re: elements
2.1. needed for PHY specific needs as well as MAC purposes
2.1.1. do not want to burden one type of PHY with information that is only useful in a different PHY type, elements are an excellent mechanism to accommodate this
2.2. must be uniformly organized for backward compatibility
2.3. every frame needs to be handled in a uniform manner
2.3.1. fields of the same type should always be in the same place
2.3.2. global things and PHY specific things should be located before any Type dependent fields

2.4. There are plenty of element types that have not yet been defined
2.5. Elements are parsable, so new and non understood element types can be ignored by recipients, whereas version number changes are inherently rejected by the older station receiving a newer version frame
2.5.1. this is especially a problem for ad hoc networks
2.5.2. the temporal extent of the element usage is another consideration
3. re: type dependent fields
3.1. things that we know are uniform in every frame of a given type should be a fixed field, not an element
3.1.1. example is the timestamp
4. re: CRC
4.1. is the 8 bit CRC for the control frame good enough?
4.2. NO, although some PHY work suggests that a 16 bit CRC is good enough for very short fields
4.3. suggests using 32 bit CRC in all MAC frames
5. re: parsing the frame
5.1. have a uniform, simple, consistent method of processing each frame type
5.2. need a way to handle the frame contents such that the frame contents are not relied upon until the CRC has been validated
6. preview of 94/171 (fixing the fields)
6.1. PHY specific elements
6.2. timestamp in beacon
6.3. removing ACF
6.4. fragmentation field only when needed
6.5. new "LOAD" element
6.6. restore "retry" bit
7. Discussion
7.1. Pablo: if we reject all frames with higher version numbers then we reject things like RTS and CTS that we probably want to process (for NAV updates, etc.) even if there are other version changes
7.2. Greg E: this is a critical reason to use elements wherever possible to add selective functionality upgrades rather than incrementing the version number at each change
7.3. (???): the MSDU exchanges listed in section 4.4 of the paper are incomplete
7.4. Dave B: asks for clarification on use of elements vs. versions
7.5. ... questions from the back of the room that I could not hear ...

NEXT PAPER: 94/230 FRAME FORMATS

DISCUSSION

HAVE YOU LOOKED AT 'FROM AP' BIT? NO

TIME STAMP DEFINITION MAY NOT BE UNDERSTOOD.
LENGTH OF AUTHENTICATION MESSAGE MAY NOT FIT IN MESSAGE
QUESTION ABOUT HASH
IS REASON TO DO HASH TO SAVE BITS
HASH DOESN'T HAVE NID ANYMORE
WHY IS DURATION IN EVERY FRAME?
DURATION DEFINITION NOT CONSISTENT BETWEEN FRAME TYPES
ELEMENTS IN DATA FRAMES?
DURATION INTENDED TO PROTECT BEYOND THE CURRENT FRAME
FRAG NUMBER IN ACK?
DO NOT NEED IT.
LOTS OF OTHER DISCUSSION. SECRETARY COULD NOT KEEP UP.

END AT 5:20

TUESDAY RECONVENE AT 8:45

REVIEW OF PAPERS TO BE PRESENTED, SOME SLIGHT MODS

PAPER 94/213 FRAME FORMATS

DISCUSSION

STA MEMBER OF AD HOC AND INFRASTRUCTURE AT SAME TIME
CTS DURATION NOT THE SAME VALUE AS RTS DURATION
SLIDES DO NOT SHOW BROADCAST CASE
ISN'T 2^16 ENOUGH PROTECTION AGAINST MSDU-ID MATCH PROBLEMS
DO YOU HAVE TO LOOK AT TYPE FIELD? NO
CASE 1 AND 3, DA IS HANDLED DIFFERENTLY
COULD NOT SEE HOW WIRELESS ACCESS POINT WORK
PEER TO PEER WITH INFRASTRUCTURE, WHAT IS THE VIA ADDRESS
B2 LENGTHS ARE THEY WITH CRC.
DID NOT USE TO AP BIT.
HOW DOES THIS WORK WITH OVERLAPPING AD HOC, SPECIAL PROBLEM WITH BROADCAST
GO PEER TO PEER IN INFRASTRUCTURE,
PROBE GOES OUT TO ALL ,BROADCAST, NEED SOMETHING TO DISTINGUISH THIS.

BREAK AT 10:15

BACK AT 10:35

B2 FUNCTIONALITY, WIRELESS ACCESS POINT
ACCESS POINT FILTER ON VIA ADDRESS, STA FILTERS ON DA.
FRAGMENTATION WITH WIRELESS ACCESS POINTS.
PROCESSING RECEIVE DATA, NAV REGARDLESS OF NID
NEED TO BETTER SPECIFY ESS-ID 'STRING'
WHY IS TO AP BIT STILL NEEDED? AP RELAY
TWO OVERLAPPING AD HOC NETWORKS. NEED UNIQUE ADDRESS
ID NEEDS TO ACCOMMODATE PROBLEMS WITH CHANNELS
TIM SHOWED SLIDE ON ADDRESSING
ADMIN OF AD HOC ADDRESS

PAPER 94/214 FRAME FIELD CONTENTS

DISCUSSION

WHY DO YOU NEED CF UP / DOWN IF THERE IS TO AP
MISSING REQUEST / RESPONSE
PROBE RESPONSE, NEED TO QUICKLY DEQUEUE OWN RESPONSE IF AD HOC
SPARE US THE DETAILS OF THE AUTHENTICATION DETAILS.
CF UP/DOWN BIT, USE TO AP BIT.

COMMENTS ON THE PAPERS

LOTS OF COMMENTS THAT THE SECRETARY WANTED TO LISTEN TOO.

BACK FROM LUNCH @ 1:15

MOTION: MOVED THAT ALL FRAMES USE A COMMON CRC AS DEFINED 94/230 AND 94/213 WITH THE EXTRA PAREN IN SECTION 2 REMOVED

TIM PHIPPS 2ND: BOB O'HARRA

DISCUSSION

WIM WANTS TO REMOVE ALL

MOTION: REMOVE THE WORD ALL

BOB O'HARRA 2ND: PABLO

DISCUSSION

DOES NOT PRECLUDE REMOVING IT FOR ACK WITH NEW MOTION.
SOME DESIRE AT FUTURE TIME TO REMOVE CRC ON ACK.
PARANOID LAWYER?

MOVE TO CALL

JON 2ND: DAVE ROBERTS PASSED BY VOICE VOTE

VOTE 8,9,1 FAILED

VOTE 16,0,1 ON MAIN MOTION PASSED

REHASH OF SEQUENCE FOR PRESENTING PAPERS.

DISCUSSION

PROBLEM WITH SEQUENCE OF PAPERS, SOME NOT COMPLETE, NOT ABLE TO PRESENT. DISCUSSION ABOUT WHAT TO DO.

PAPER 94/172 A SIMPLE POWER MANAGEMENT PROPOSAL

DISCUSSION

FRAME MISS ORDERING ALLOWED
POWER UP OF SYNTH TAKES 3 TO 5 MS
ONLY REASON IS TO SOLVE MISS ORDERING OF FRAMES
MAJOR FUNCTIONALITY LOSS
TWO REASONS, COMPLEXITY AND REORDERING FRAMES. THIS SOLUTION DOES NOT SOLVE EITHER EFFECTIVELY.
TIME TO POWER UP A RADIO
DOES NOT SOLVE THE PROBLEM FOR THE EXAMPLES GIVEN
WOULD THIS PROPOSAL BE MADE IF FRAME MISORDERING NO A PROBLEM.

STRAW POLL: PASSED: NO INTEREST IN THE PROPOSAL
NO MOTION PUT FORWARD

NEED A DISCUSSION ON REORDERING

BREAK FOR 15 MINUTES @ 2:30

PEOPLE ARE NOT READY WITH THE PRESENTATIONS, CHAIR IS DOING THE BEST IT CAN TO GET PAPERS PRESENTED. RICK WHITE DECLINES TO PRESENT HIS PAPER WITHOUT THE OTHERS. WIM IS BACK.

THE MEETING FEES ARE $77.

PAPER 94/164 REQUIRED MAC FUNCTIONS TO SUPPORT MULIRATE PHY'S

DISCUSSION

THE PHY HAS A BASIC LENGTH FIELD. YES THIS DURATION IS DIFFERENT
THERE IS NO END DELIMITER IN THE FREQUENCY HOPPER PHY.
DO NOT WANT AN END DELIMITER ON A PHY
CANNOT ROUND OFF THE PHY LENGTH, NEEDED FOR CRC
RATE IS NOT AN INTEGER OF CURRENT RATE
CHANGING THE PHY LENGTH FIELD. NO ADVISORY ONLY
SCHEME AND FRAGMENTATION, DO NOT HEAR CCA, RELYING ON CCA, OLD RECEIVERS NEED TO EXTRACT NEW PHY CLOCK.
QUESTION ABILITY FOR CCA TO WORK FOR FUTURE PHY.
NEED TO DESIGN NEW PHY TO BE SENSITIVE TO OLD EQUIPMENT
CAN USED THE MECHANISMS TO AID CCA DETECTION
CAN EXTEND DIFS TO = 2*SIFS + ACK
IF CCA IS GOOD ENOUGH, THEN WHY NAV. RESERVES TIME, CCA AT ONE END, NAV AT OTHER.
DATA RATE BENEFITS ARE QUESTIONED.
WHY MUST THE MAC BE INVOLVED. TRYING TO CHANGE AS LITTLE AS POSSIBLE.
IF MAC WAS NOT TIME DRIVEN, THEN MULTI-BIT RATE WOULD BE MUCH EASIER
WHAT IS OPERATIONALLY DIFFERENT BETWEEN THIS AND 94/157. NO LONGER REQUIRE RTS/CTS.
DS AGREE WITH BASIC MECHANISM. IR WANTS THIS. HSFH DOES NOT THINK THAT THERE ARE ANY PROBLEMS. FH CAN ACCOMMODATE THIS.
GENERAL SENSE THAT STANDARD IS BASED ON CURRENT TECHNOLOGY, FUTURE TECHNOLOGY WILL ALLOW HIGHER RATES.
IF ONLY SINGLE RATE THEN FIXED RATE FOR WHOLE ESS.
HOW DOES THE RECEIVER GET THE RATE. ALWAYS START AT BASIC RATE.
PLCP RATE DIFFERENT FROM PREFERRED STATION RATE
TIME IN uS IS HARDER TO DO THAN TIME IN BITS. BASIC RATE BITS POSSIBLE
NEW RATE APPLIED TO ENTIRE MPDU
STA HAVE BASIC RATE AND MUST DO FOR ALL TIME? CAN RATCHET UP BASIC RATE.

STRAW POLLS TAKEN:

WANTED TO TABLE MOTION TO ANOTHER TIME. WILL BRING IT UP TO THE MAC/PHY MEETING.

MAC FRAME FORMAT MEETING THIS EVENING @ 7:30

ADJOURN @ 5:10 PM

WEDNESDAY START @ 8:45

PRESENTED THE WORK FROM PREVIOUS EVENING

MOTION: CLOSE THE ISSUE

94/215, 94/228 WILL NOT BE PRESENTED THIS MEETING

PROPOSAL: TO UPDATE 94/236 TO SPECIFY THAT THE FIELDS COMPRISING THE FRAME BODY CONTENTS, WHEN PRESENT, OF A FRAME SHALL BE IN A FIXED ORDER.
MOVED JON, 2ND RICK

STRAW POLL: GO AHEAD WITH PROPOSAL

DISCUSSION
PREFER NOT TO TAKE THIS STEP AT THIS MOMENT
WOULD LIKE TO SEE THIS HAPPEN

VOTE: 11,4,3 PASSED

PAPER 94/171 FIXES TO THE FRAME FIELDS

DISCUSSION

Take Minutes for Chris while he presents:
Presentation 171a for paper 171:
Presenter Chris:
Fixes to fields and Misc issues:
This paper was needed clearly because we are missing several Phy Dependent stuff needed in the MAC frames.
This is a partial Set of those things I noticed missing.
Related Different Types of information that was missing from the current description.
The group needs to talk to their PHY guys to get a sense of what is really needed.
Motion: Add the PHY dependent ELEMENTS to the List. Do So by adding the relevant Text from 94/171: 2nd: GREG
Dave Bagby: asked some question for clarification. We need the PHY guys to bring their proposals to the Official Draft to know what PHY stuff we need to have listed.
Chris: Fair Comment and Agreed, but This list is partially from Dean, and he has contributed this part of the list.
Dave B: We need the Phy stuff in order to do this
Greg: There is lots of Stuff in the PHY's when they finally come out, and the aspects that are here are not controversial to the PHY guys, and I second this motion.
Dave B: what do I get with Geography element?
Chris: IN Spain, depending on where you are the set of frequencies is different. In Japan, The set is different. In places like Japan, They want to know that it is Japan.

Mark D: There are regulations that are required by different countries. i.e. if you are using a certain freq, the need to have a call signal sent out periodically. I would not want to look at this at this time, the Geographically implication is not defined at this time.

Arthur Coleman: I don't know what we will actually need. I can see this as a great difficulty to be set by the Manufacturer.

Chris: This is more or less a requirement from the Regulator agencies rather than functionality.

Bob: This shows up as an information set?

Chris: We anticipate that this only has to be in the Associate frames, Probes, Possibly in the Beacons.

Rick: The Information as far as the Probe, it is also be needed in the Beacons, because not all stations use a Probe/Probe Response.

Bob: The other question: Do these need to be a set of independent Elements, or can they be delivered to the PHY. Can we have a PHY specific Element that can be used to pass all them to the PHY as one and the structure can not be known to the MAC at this time.

Chris: .... The set of PHY specific stuff Some is used by some PHYS and others are not used by others. I think I did provide some grouping for some of the elements.

WIM: When you have these PHY sets that are not sufficient to be able to encode them into one Element. We won't be able to extend the specification....

Dave B.: If you would change the Geography name to say Regulatory Boundaries the argument may go away.

Dave R.: The text is too short on detail, and I don't know why, when, and how this information is used. I am not against the idea, but I am against the paper due to the lack of detail.

Tim P: What do you get .....

Chris: There is a mapping between the Channel you are on and the Channel ID, and the mapping has to be between the ID and the Freq set. If you have bleed through, you may be on the wrong channel, and only as long as it continues are you OK.

Bob: These sets are a list of freq that have a hopping sequence, this is actually an index into the set.

Rick: Unfortunately the paper says channel, But it would be better to have it be called index.

Chris: If I have only sensitized the group to the issue then I have achieved a good thing.

Dave B: Further Discussion:

Pablo: I support this motion as something that was needed.

Dave B: I would support this motion if there was a change to the geographical to regulatory domain.

Chris: I would be willing to do this.

DAVE b: I would like you to assure me that you are taking upon you the action item to have the fleshed out description for each of the elements.

Chris : There is about a page to do coupled with the large number of pages that the PHY group is providing.

Dave R: Why do we need these in the MAC, I want to know what is really needed in the MAC as aposed to having some of this

in the PHY layer only. I don't want the PHY stuff in the ELEMENTS just because we have a nice structure to use.

Chris: it is not the .....

Tim: I have the unofficial Paper from the FH doc 94/68r3 page 15 that says somewhere above the PLE layer has to set the request to get the channel, and it is an index. There is something above the PLE layer that has to have this information, I think that is the MAC?

Rick: No there is several Layers inside the PHY that will need to have control of this information.

Dave B: Agreed to have the Geographical location changed to Regulatory domain.

Vote 16:2:4 the motion Passed.

Continue on Presentation:

Chris: The Time Stamp has some problems, and I would like to point this out and leave it for a work in progress.
The Time Stamp doesn't have sufficient information to get the sync to happen between stations.

Rick: What do you mean that it is late.

Tim: It can't be stamped wrong, it is stamped just prior to deliver.

Dave R: It is a problem that you don't know if the beacon is really late or not.

Chris: This is kind of broken, and I wanted to have people point this out.

Rick: Is this a problem with the DS only:

Chris: This is a general Problem for all PHY's.

Dave b: Can we not dwell here if there is not going to be a motion here:

Chris: I wanted to raise the sensitivity of the group to this, and if they would talk to me about this off line.

WIM: I have some text to solve some of this.

TIM: The Super-Frame is tied to the Hop Dwell time and to the (another timer) the Beacon timer is not tied to a particular place in the Super-Frame.

Wim: I think we need a specification for the beacon interval similar to the super frame interval specification.

Chris: I think that due to the Size used by the Novell Network that the size of the packet is usually small less than 600 bytes.

Jon: I want to point out that the small size is a minimum maximum for legacy system for traversing older Routers.

Chris: I thank you for the extra information I work on the system at Symbol, and see only small packets on the Novell network.

Dave B: I see much larger packets and I don't want to get into an argument of who has smaller or larger packets on their networks, and would like to see the consistency in the headers.

Chris: I think that,.....

Tim: I wouldn't want the Fragment number in the ACK. I think that I want to have the frame format more consistent.

Rick: I think this is something like yesterday, It is saving a few bits at the expense of complexity. A few more bits overall, but it is more consistent.

Sarosh: If you have only short packets you will save 3 bytes over the 90% of the time. .....You get your frame as is, and there are no fragment ....

Dave B: I would stick a pad byte to get it back on a 32-bit boundary.

.....

Chris: I don't want to put it in the Elements.

Chris: The best way to do this is to have a bit then you have t....

Dave B: I don't like this. This disturbs what we agreed to last night. There is a difference here in deciding on the value of a field in deciding to parse the rest of the header. Uniformity is a good thing after functionality and efficiency. We need to have these things be a consistent and have this field to be consistently there. I want to solve this problem by simply not doing fragmentation.

Chris: If the Size of the First Fragment is the largest fragment that will be sent for the particular MSDU, then

Tim: If you leave out the Fragment Num in 170 then you save 6 bytes, in the 213 paper you only save 1 byte.

MARK D: I think we had the option for dynamic fragmentation in order to have the optimization to have the fragments fit into the end of the Dwell Time.

Chris: No, This in only a maximum MPDU size that is set by the first fragment.

MARK: Then if the we start to send....Do you assume that you know how many frags you will have.

Chris: if you are doing this totally dynamically, then this won't work, I didn't see this as a possibility, I saw the TX station would break this into a fixed number of frags.

Dave b: The discussion of how to change the MPDU size by use of the MANAGEMENT MIB was concluded without consensus. The current Draft doesn't specify the upper or lower bound of the fragment size will be.

Chris: The text Subsequent fragments will not be larger than the first fragment sent will take care of your concern.

....

Rick: You are looking for efficiency when you are doing fragmentation, you are not using the buffers wisely if you have to preallocate the buffers and then wait for the rest of the frags that may never arrive. This would say that allocating as they arrive is a better solution.

Chris: I want to try to achieve a more contiguous block of memory to reassemble the MSDU on the RX station.

WIM: I would like to look at the whether or not we can make the fragmentation fields dedicated or not. The total calculation of efficiency is ..... I am sensitive for instance length increase especially in the bytes that show up in every frame especially in the ack, the improvement is not transmitting the CRC in the ACK where only the Address is their. In a Data Frame and in the ACK, the data is duplicated, especially that I see good possibility to make some efficiency in the future....

John: We need to guarantee that fragments are never sent out of order.

Chris: I don't see that I

Jon: the need to have contiguous buffers is really a nice thing when you are moving data off the adapter into a buffer in the host that is also contiguous. I think that you don't know how large the entire packet is then you have to allocate sufficient space for the largest frame for every frame. Then you have to maintain a pool of links to keep them separated for reassembly on the rx side. This is a rather complicated set of parameters.

Chris: In terms of Memory allocation in the station is not very important in the Lap top machines, but in the PDA types the Buffers are not as easily to come bye.

Jon: The memory we are talking about is on the adapter,

Chris: that is implementation dependent

Dave b; if you are saying that is a implementation detail then you can't say that memory management is not.

Chris: it is a difference, and the Silicon vendors I would think that it is a important:

Motion: Make the Fragmentation field a Present when needed Field. 2nd: Sarosh. 5:11:4 Fails.

Break for 10 Minutes: 10:40

Continues:

Chris: This is a long standing request that people look at the network issues and that a new element be added to give the station to tell which access point it really wants to associate with. This is not the only information/criteria to select the AP. The Load Element is a relative number of determining how busy the AP is.

Mark: Wouldn't this be appropriate to be in the Beacon also to allow others see the load on the AP.

Chris: This may be something that would be in different Frames to and from stations.

Jon: Wouldn't it be better to use a 0-100 as a relative number that corresponds to a Percentage of available load.

Chris: I would like to not change it at this time.

Dave B: I am concerned that this is yet another example of not enough detail. I like the percentage as amore uniform set of how to keep uniform across stations what is meant by load.

Tim : I sympathize with what you are trying to get, but I don't think that this is going to work. It is not useful if you haven't identified the actual correspondence to the number you stuff in there.

Chris: I don't know what the parameters are needed to choose, because there are a lot of Implementation dependent stuff that would need to go into this and is not.. if you are back ending the AP with serial line then the load is going to be dependent on the Serial line and not on the wireless side.

Dave B: Maybe we need to have you take a small number and go off and look at this and then come back in November and decide on the details.

Chris: I think that this agreeable.....

Arthur: I think that this is a good idea, but the details are needed prior to adopting it.

Sarosh: I agree, But we need to determine where this is to go. Elements are able to go in any frame where it is necessary.

I don't think you need to specify which frame it goes in because the elements can go into any frame.

Dave B: I think that if you pose the question now, you will get a no from the group.

Chris: I am getting a lot of good feedback on the ideas of how the group feels that this is going to be useful. and I would like to have 5 minutes more to get more useful information from the group.

Dave R: I disagree with Sarosh, I think that if we add this functionality, it would be a fixed field in wherever it should be. It may be useful

Michael F: I agree with Dave, It may be useful, but It may not be sufficient to get a good management sense of what the problem in getting access to the AP. There is a different issue that if this indication is identified where I am locked out where the load is too heavy as aposed to being locked out due to the AP not having an open logical board to assign it.

Chris: There is a problem where as you are roaming that would allow you to have a black spot where you get no active feedback to determine why.

Michael F: We have seen this problem and there is something that had to be done to correct it.

Chris: Agreed,.....

Mark D: There is not sufficient information in the value. it is a problem of what is the past history, but it doesn't give any idea of what the actual load will be in the future.

Chris: I have a system where a truck is moving around and is switching from AP and we have need to switch very quickly. I have enough information for now, I will take this as work in progress and try to get some of this done on the reflector.

BEACON AND PROBE RESPONSE ARE THE SAME?

DISCUSSION

PHY DEPENDENT STUFF IN PROBE RESPONSE
SOME FIELDS ARE IN ONE AND NOT IN THE OTHER

PAPER 94/178 HOW LONG IS LONG ENOUGH?

DISCUSSION

REFERENCE SHOULD BE 20B2
MIB DOESN'T CONTAIN ANY PHY VARIABLES
RATIONAL SEAMS TO IMPLY HEADING TO LARGE FRAMES. NO NOT INTENDED.
DURATION IN TERMS OF MS FOR BEACON INTERVAL.

NO MOTION TO BE MADE: PAPER IS MOOT DUE TO FRAME FORMAT PAPERS

TOO MUCH WORK, NOT ENOUGH TIME.
SUGGEST AN EVENING SESSION START AT 8:00 - B2 REVIEW

ADJOURNED AT 11:40

WEDNESDAY EVENING

August 31, MAC Meeting Minutes.
Wednesday Evening:

Jon: Would like the Request/Response set on page four to start at zero and move the first 3 down below the Request/Response set.

Change the Word Via to BSSID.

A Sentence on Page 6 needs to be copied to page 10 to make the Source address be consistent.

Presentation:

Michael Fisher: Removed some of the stuff from the original paper that have been covered previously.

Definition of "Association":

the term is used as "Association with a AP" and then is also used as a station to station in an AD-Hoc LAN.

We need to modify the definition to allow it or add a new term such as registration to mean the authentication and privacy service activities that are part of establishing wireless communication, as distinguished from the activities that are part of

Mike F: There are places where association may occur where you have not changed AP's, but have need to change some settings in getting the communication Indication. If you have already gone through authentication, do you need to have to go through the authentication stages again just to turn on the Contention free usage.

Dave b: Described the history of the usage and didn't see a functionality problem. You don't need to go through the Authentication algorithm when needed, not due to reassociation.

Greg: IN the Infrastructure case there is an extra handshake needed when compared to the AD-Hoc case.

Dave B: We need to just clarify the English

Tim: Can you authenticate before you associate?

Dave b: Yes, this takes it out of the time critical path.

Definition of Association -- Part 2

Problem: The Term association is defined in a self-referential manner ("...service which enables the establishment of an initial association...")

Location: Definitions (Sections 1,2)

Proposed Solution: Provide definitions of "associate" (a verb) and "associate" (a noun).

a) Associate (Verb) -- To establish an initial Association between a pair of stations, one of which may be a station that includes access point functionality.

b) association (Noun) the state in which another station

(typically an AP) possesses sufficient information regarding the address and physical locus of this station to be able to conduct directed communication therewith.

short discussion that I missed.

.....

Mike f: Services from the AP or PCF once you are in communication should be a formal part of the management function.

.....

Mike F: you are needing a term to say we are joining the PCF.

Dave b: you have been associated prior to being able to be on the Polling list.

Tim: if you want to get on the Polling list you generate traffic you get noticed.

Mike f: No, 5.3.5.2 it says that you have to join explicitly.

Tim: this is the ability to do Contention free, but does not put you on the polling list. If you want to get the Poll, it is up to the AP that determines when it will send it to you.

Mike F: do you believe that you have to reassociate in order to change the setting.

Bob O: One thing to note, it may help. Jim S. has indicated by the italics in 5.3 that some function was implied, but not explicitly in DOC 190. This is one person's opinion, and hasn't been challenged until tonight.

Mike f: we want means that controls Mode settings that are per station at the AP such as being on the Poll list, and perhaps others like power management. In contention free area is where the problem lies.

Tim: There are 2 types of stations, those that can do it and those that never can. The little bit in Italics is saying that if I want to change a station from one of those stations that can do CF to one of those that hate CF is a reasonable thing to do in a Reassociation.

Greg: The ..... The PCF can on its own initiative can put a station on the polling list. We need to decide if this is useful.

Mike F: If 236 is adopted, there is no reason that any station can't receive a CF data, but some may not be able to send a CF frame.....I don't know why you want to turn this on or off.

Tim: The ability to participate make sense

Mike F: I think that we are going to get to a state where we can receive either a CF data or data, but not send CF

Dave B: I see a null set that.....

Mike R: This is the exact case that needs to ability to determine if the station can in fact receive

a poll frame. i.e. if I tell a system not to send me EMAIL while I go to sleep, it is useless to send to me during the CF time if I am asleep.

Dave b: We have a history .... that has got us to where were are now. We never made the .....

Tim: It is possible to say that I am not CF capable, and then I won't get CF traffic at all.

Mike F: if you say you are not CF capable, the AP will not every send you stuff during the CF period. Different Temporal things one is a state, one is a

The text in lines 21 and 23 in section 5.3.5.2 that the sentence in italics are in fact appropriate . that stations desire to participate is done at the association time. You don't want to poll stations that are not wanting it.

Tim: See point a and b, there is no where else a poll request is defined.....

missed a chunk of the discussion.

The management type we are talking about.....

Dave b: Add a CF capable definition in the Association.
Add a CF Management type to take us on and off the Poll List.

Mike f: The idea of joining a poll list you are there till you asked to be removed.

Tim: The Asynch traffic is bursty and you would not want to use that .

Mike F: If you have a 10 Meg file to send, use the open traffic to send it.

Greg: Dave you need to include the definition of association in 1.2 to remove the circularity.

Motion to have Dave fix CF capable vs. poll (see report).
moved by Greg.
2nd by Mike
vote: 7,0,3

Mike F: Reassociation is defined in section 1.2 as association with a different than usage in the body of the text.

.....

Greg: we need to have the error responses in the replies that need to be defined.

Mike f: We need to at least get the error code to reassociate with a new AP to be an error.

Mike F: If we are going to have element Codes, we need

to define them differently.
Dave B: can we wait to talk about this till we have the encoding discussion.
Mike F: Number of Stations per BSS
StationID is a 2-octet value, however the current maximum is 840 per BSS. This is due to the TIM is an element that may need 8 octets per block group, hence up to 15 block groups per tim. giving the 840. I can see that we will need to have more than 840 per bss.
Possible solutions.
1) we need to do one of 2 things, Allow the length field in the link field to an 8-bit value and move the m-bit to the code octet. This allows 31 block groups, for up to 1736 power saving stations per BSS.
2) Explicitly say the limit is 840.
3) add codes to permit more than one TIM per frame.
4) Send the TIM as a portion of a management frame rather than as an element.
Tim: the reason you are limited is the More bit in the way.
Mike F: I think that 840 is too low. I think we can provide at least the 1736 stations.

Jon: I don't see that we have a real problem, but this is not where I want to discuss this.
Mike F: I see that 2 bytes is a enough, but we need to look at this,
Dave b: I agree with Jon, this is a coding type issue, lets resolve that this needs to be addressed as we revisit the encoding part.
Mike F: Resolved that the encoding of the TIMS and elements be changed to not restrict the number stations per BSS.
Greg: I want to know if the resolution is causing the solution to be chosen for us.
Mike F: Today you can only have one 8 bit Coded TIM. and it limits you.
Dave b: Move that encoding combinations for TIMS and Elements limits the number of Stations for BSS.
Fix it.
Mike F: Next slide:
Frames in which Elements may be included.
Mike.
Dave B: this is to be talked about later.
Mike F: I want to talk about it.
Dave B: will it be in your paper
TIM : Why not now.
Dave B: We are not going to deal with Encoding.
Mike F: I wanted to talk about Fragmentation.

Dave B: You are starting down the Encoding
Mike F: I don't have anything else that doesn't touch on some Encoding Issues.
Dave b: I am sorry if I have scared you off.
Mike F: Well, I am tired too....

;;;;

Mike F: The MSDU is what is given to us by the LLC, and most framing and other definitions, the discussion of having a maximum MSDU length, then you need a limit on the variable length headers to be expanded to prevent being too large for the Fragment numbers to handle. This needs to be specified. That is all I have. Please read the paper that will be stuffed tomorrow.
Dave B: This is the end of 185 and 209.

Wim's Comments on B2 94/229
See Wim's Slides for which were clerical, (v) previously discussed. (P) postpone till later.

Section 4.10 needs to have optional element field in section 4.1.10.1 dropped in B2 from B1, it used to have the Elements fields. We have lost some functionality.
Greg: I see it is covered in figure 4.1, but 236 uses the consistent use of elements fields, the elements field is now missing.
Bob O: 236 has the Elements in the Frame Body and not needed to be listed in the overview necessarily. We need to describe this in more detail when we get in to the Encoding.
Dave b: Wim is stating that he wants to have elements in any frame. I think that have that stated explicitly, we need to wait till after the discussion of the encoding.
Greg: Any new encoding that might come from future discussions, and on that the picture needs to be drawn.
Dave B: I see 2 things, 1. Something is missing. 2. something are not completely defined.....
Greg: ...There is a problem
Dave B:: these are exactly the same as B@
Greg: Never mind

....
Wim: Specifying the Duration in MicroSeconds .. Next one. With out the relation between the beacon and the TimeStamp. As pointed out this afternoon, we need to specify as we do for the superframe, we need to show the beacon interval and the time. I suggest that specifying that the TSF timer works as in Modulo of the Beacon interval, and the timestamp range to be specified between 0 and n* beacon interval.
Tim: I like your first two points, and the Beacon interval timer should start at 0 and that you need what happens to a beacon when it is scheduled to occur at the start of a CF period. We need to say

what makes sense.
Greg: I think you are right that you need to say something, but we need to say we pick..
Tim: Can I make point at the bottom, the superframe and the superframe is not relevant, you will need to know the absolute time.
The Superframe and the Hop timer is already connected.

WIM: There are editorial things to fix.
1.2 Definitions: MPDU
2.7.4 The Direction should be STA to AP
3.1 The indentation level needs fixing
3.1 There is no section on the general description of the Async Services.
4.1 Figure 4-1 b2 and b3 in Type field does not match the description in 4.1.3.
5.1 Line 32. Remove the call setup and tear down support. Adoption of the DTBS service as the only time bounded service, this is hang over info.
5.1.4 The use of Min_Full_MPDU is not a PHY parameter...Missing the MPDU_Floor parameter and the implication of the MIN_FULL_MPDU. Change to a editorial thing.
5.2 Mismatch in the names between section 5.1.5 (RTS_Threshold) and the NoRTS parameter on line 26.
5.2 line 43, Change reference into 5.2.6.4
5.2.6.3 line 9 and 13 need to be adjusted.
5.2.6.5 lines 12 and 13 can be deleted.
5.2.9 line 26 "via" -> "to"

The following need further checking:
4.1.10 The optional Element field is missing in section 4.1.10.1
5.1.4 Check the value names against the OSHWA and ORLANDO meeting minutes.
5.2.10 line 31: Ack only on unicast Req, Resp, Poll, ATIM frames.
5.2.11 Lines 14-17 do also apply to Multicast/Broadcast to an AP.
5.2.11 lines 19-21 Should only be limited to transmission procedure by a station, not an AP.
5.2.11 lines 33-34 do also apply to Multicast/Broadcast to an AP
5.2.12 lines 7-11 Does apply for "Fast Response Possibility" on a Poll.
Last 2 pages didn't discuss 10:40 endtime.•

BACK AT 8:35 THURSDAY MORNING

PAPER 94/176 CONCERNS WITH THE PRIORITY ASSERTION SIGNAL

DISCUSSION

DISAGREE ABOUT RELIABILITY OF PAS DETECTION
WIM STATES THAT ONLY ISSUE IS RELIABILITY OF DETECTING PAS WITH A COLLISION.
HAVE SAME PROBLEM IN CONTENTION WINDOW WITH COLLISIONS

NO MOTION OFFERED

PAPER 94/150 HOW TO PROCEED WITH TBS

DISCUSSION

CAN MEET THE PAR WITH TBS AS AN OPTION
MUST ALL PHY'S HAVE SOME TYPE OF PRIORITY MECHANISM. NO? CAN SELECT ONE OF TWO PRIORITY METHODS IF VIABLE.
USE OF PRIORITY ON INSTALLATION BASIS?
LETS MAKE THIS AN OPTION PER PHY.
PAS IS MORE EFFICIENT FOR ASYNCH TRAFFIC.
MUST SPECIFY THE DEFAULT PRIORITY
25% WANT TBS ALL PHY'S
25% UNDECIDED
50% OPTIONAL PER PHY

BREAK AT 10:00 AM

BACK AT 10:15

STARTED TO ELIMINATE CHOICES
SELECT A PrP MECHANISM
STRAW POLE: MOST WANT OPTIONAL BY PHY, 1 MECHANISM
CONFUSION ABOUT CAPABILITIES WHEN PrP IMPLEMENTED, GET OTHER METHOD FOR FREE.

MOTION: THAT NOT ALL PHYS WILL BE REQUIRED TO SUPPORT THE OPTIONAL MAC DTBS FUNCTIONALITY. EACH PHY WILL SPECIFY IF IT SUPPORTS THIS OR NOT AS PART OF ITS SPECIFICATION.

TIM PHIPPS, 2ND WIM

VOTE: 14,5,1

MOTION: THERE SHALL BE ONLY ONE MECHANISM TO SUPPORT DTBS WITHIN EACH PHY.
BOB OHARRA 2ND: WIM

VOTE: 15,2,1

MOTION: THERE SHALL BE ONE COMMON MAC MECHANISM TO SUPPORT DTBS ACROSS ALL PHYS.
TIM PHIPPS, 2ND DAVE ROBERTS

VOTE: 5,9,5

MOTION: THAT THE MAC PROVIDE ONLY DTBS MECHANISM OF PARAMETERIZED ACTIVE / PASSIVE PER PHY, AS DESCRIBED IN 94/150d.

BOB O'HARA 2ND: FREDERIC

VOTE: 7,6,2

ACTION: WIM TO BRING DETAILED TEXT TO SUPPORT THE ABOVE MOTIONS TO THE NOVEMBER MAC GROUP.

MAC REPORT TO THE PLENARY WAS PRESENTED.

POSITIVE AFFIRMATION OF THE MAC REPORT

MAC ADJOURNED AT 11:45

END OF MINUTES