

IEEE802.11 High Speed PHY PAR Study Group Minutes

Meeting at 8pm on 11/11/96
8pm-11pm

Meeting called to order by Naftali at 8:24pm

Richard Paine volunteered to take notes.

Attendees

Naftali (BreezeCom) - Study Group Chair
Richard Paine (Boeing) - Secretary of the meeting
Carl Andren (Harris)
Peter Ecclesine (cisco)
Roy Sebring (Intermec)
Jan Boer (Lucent)
Vic Hayes (Lucent)
Bill Rogers (ITT)
Ron Mahany (Norand)
Joe Kubler (Norand)
Nein Wei (AT&T)
William Robert (AMI)
Michael Drombauer (AIRONET)
Nathan Silberman (Philips)
Several others who came in and out

Agenda Set and Approved

overview of user needs
Overview of other standards activities
Discussion
Modulation methods
Frequency allocations
How the new PAR meets the 5 criteria for PAR processing
Set requirements for the higher speed

User Needs

Richard Paine presented for about 20 minutes

Lots of questions about Boeing requirements for wireless high bandwidth
Questions about the vendor position for customers such as Boeing-how many customers are there like Boeing. Shouldn't they be targeting consumer or small company customers rather than the Boeings.
Lots of questions about the Boeing intent on three dimensional CAD. The answer was that three dimensional CAD will be everywhere, including in the warehouses and factories.

Other Standards Activities

Vic Hayes gave a report on ETSI and Hiperlan

Hiperlan 1,2,3,&4

Hiperlan 1 is 5.1

Hiperlan 2 is 17

Hiperlan 3 is 60

ece.wpi.edu for Hiperlan information

Vic mentioned that ETSI did not go to the ITU and so the ITU is upset with ETSI and is refusing to do business with them since they have not worked with the ITU.

Discussion

Question about the PAR process

Vic Hayes - You have 6 months to make the move from an inform@study group to approval by the 802 committee for a new PHY.

Economic feasibility is one of the criteria for implementing

Carl Andren brought up the need to have a migration path for wireless LAN users 1-2-10-25, etc

Change is unavoidable except in vending machines

Requirements for Higher Speed

Requirements/Objectives

Interoperability - preferred but not required (with 802.11 specification)

frequency band - should we consider higher speeds in the 2.4GHZ band

Start with about 150MHZ band near the NI and Hiperlan bands

Data rate - 25Mbps, consider fallback

Sensitivity (Range) - study will be conducted on spectral efficiency vs sensitivity vs range vs immunity etc.

Transmit power - regulatory

Overlapping networks capability

Power consumption

Multipath immunity - methods more immune to multipath, ie work will be conducted on channel models and immunity to multipath

Interference immunity - (modulation, protocol)

Economics (complex/efficient vs low cost) - complex/efficient vs low cost

Power consumption - mechanisms for power conservation (sleep modes), baseline

Norand brought up that what kind of market would vendors want to provide for to support the higher speed wireless LANs

Modulation

Lots of discussion about how to approach the higher speed effort

Conclusion was that the modulation technique did not need to be discussed

Frequency Allocations

Naftali stated that it is not important to specify the band but a range, such as 150MHZ near NII frequencies

-80dbm is in the 802.11 standard, what will be the standard for the higher speed standard?

Meeting the five criteria for PAR processing

There are five criteria for a PAR

- Broad market potential
- Compatibility
- Distinct Identity
- Technical Feasibility
- Economic Feasibility

Broad Market Potential

Discussion about the growth in bandwidth potential

Conclusion was that there was going to be growth in bandwidth requirements and no stopping it

Compatibility

802.11 MAC, time scaled, will probably fit a new high speed PHY, one of the tasks should be to find out this limit.

Question about 1 PAR or 2

1 PAR might be about the extension of 802.11 with a new PHY

The second PAR might be about the new 802 effort (802.15?) if the higher speed wireless LAN also requires a new MAC as well as a new PHY.

The meeting was adjourned at 11pm.

Meeting at 8pm on 11/13/96 8pm-10pm

Meeting called to order by Naftali at 8:25pm

Attendees

- Naftali Chayat (BreezeCom)
- Richard Paine (Boeing)
- Carl Andren (Harris)
- Peter Ecclesine (cisco)
- Roy Sebring (Intermec)
- Jan Boer (Lucent)
- Nein Wei (AT&T)
- Simon Black
- Mike Trompower (Aironet)
- Waychi Doo (3COM)
- Bob Roth (BECOMM)
- Several others who came in and out

Agenda Set and Approved

- Review PAR 1 (extension of 802.11) proposal from Naftali
- Discussion
 - Modulation methods
 - Frequency allocations

PAR 1 Proposal

Naftali presented his proposal for the PAR (document 96/153).

He proposed using his 3Mbps wireless LAN as an example of Technical & Economic Feasibility.

Discussion

The proposal is to submit a PAR for a new PHY for 802.11. This PAR would be for the same MAC as is proposed in 802.11. It is proposed to be completed by 11/30/98. The PAR is given for two years. The question came up about why the present PAR can't go to 4.5Mbps since it is in the tables in the document. Also, if you don't go for at least 10Mbps, 802.11 will be left behind and out of the game. Akira Miura questioned the feasibility of having two parallel efforts (extensions to 802.11 PHY and future high speed PHY). He was replied that the effort of having an extension to 802.11 is probably justified as it strengthens the market position of 802.11 and it is a well defined effort.

Voting

A motion was made (Carl) and seconded (Jan) to have a PAR for an extension to the 802.11 standard in the ISM band. 6-1-0 was the vote. The proposed additions (Jan) are a minimum data rate for FH at 3Mbps and for DS is 8Mbps and the sensitivity drop of no more than 10db compared to current 802.11 at 2Mbps modulation methods for FH and DS, respectively. The completion date is targeted at 11/30/98. Carl seconded the motion. Passed 6-0-0. Motion to adjourn at 10:04.

Action Items

Naftali was tasked to find a senior 802 member and get some political and process advice on how to do the PAR.