

## NPRM Response for Wireless LANs

### NPRM Conceptual Outline Draft 9/14/92

#### 1. References and header (reference 92/67)

#### 2. Background and summary (reference 92/67)

#### 3. Introduction (see 92/67) to the IEEE, IEEE 802.11

- expertise
- Focus on WLANs

#### 4. Brief synopsis of 802.11 requirements

- key technical requirements (70-140 MHz, low BER, channels, etc)
- market goals, parity with international data allocations )  
) (requirements document 92/91)
- largely in harmony with Data PCS petition RM 7618 )
- unlicensed )

#### 5. Areas of full agreement with Proposed Rulemaking

- rulemaking explicitly anticipates operation of wireless computer devices
- rulemaking grants unlicensed status for categories of devices mentioned in § 15.253
- rulemaking provides explicit exemption from protecting Part 94 operations as proposed in § 15.5
- rulemaking affords the use of instrumentation which measures peak radiated power for devices or systems operating above 1000 MHz as proposed in § 15.215
- rulemaking encloses all data and voice services under a common PCS operation within the 1850-1990 MHz frequency allocation along with other short range wireless communications devices. This will enhance design, component and manufacturing economies significantly

#### 6. Areas of qualified endorsement

- With regard to § 15.253 para (d) (4); while we endorse judicious use of transmitted power, we seek an equivalent rule which we believe accomplishes the goals of this rule and further reduces cost and complexity of the equipment.

*We recommend that a threshold power level, such as 10 dB below the maximum authorized power level be selected, above which adaptive power control is required, and below the threshold, adaptive power control is not required.*

- In principle we support the measurement method of out-of-band emissions to be based upon the intentional radio's spectral emission characteristics, measured as close to the band edge as possible, as proposed in § 15.253 (b) (1) (ii).

*We recommend for practical, technical and cost considerations the following amendments:*

- a. specify the out-of-band emission attenuation relative to maximum authorized peak (mid-band) envelope power*
- b. specify the out-of-band emissions to be the greater of an absolute power level (e.g. current Part 15 unintentional radiator limit) or attenuation referred to the mid-band peak envelope power.*

- We agree with the minimum occupied bandwidth specification and an associated maximum power spectral density as appears to be the intent of section § 15.253 (b), and precise emission standards.  
*We recommend a more uniform power spectral density throughout the 1910 - 1930 MHz independent of the frequency band segments within the 1910 - 1930 MHz band[track WINForum].*  
*We recommend an explicit means of numerically smoothing the inevitable measurement peak (or correspondingly, allow a peak to average ratio to compensate for natural peakedness in the fundamental emission envelope).*  
*We recommend that the frequency tolerance be allowed to increase over that specified in 15.253 (c) provided that the fundamental emission meet the final out-of-band emission specification. We believe that a  $\pm 0.0001$  percent frequency tolerance is for virtually all portable devices too costly and possibly infeasible.*
- We agree in principle with a normative spectral efficiency requirement as proposed § 15.215 (d) (3).  
*We want to reinforce the spacial utilization of spectrum*  
*We recommend a an efficiency definition based upon the units of Mbit/s/ha/floor/Hz rather than power per bit (or correspondingly bit/W) be adopted and specified for all parts of the 1910-1930 band.*

### 7. Item of disagreement with Proposed Rulemaking.

- Wireless LAN services as contemplated by the industry and 802.11 standards require substantial allocated bandwidth by virtue of their unique types of information flows, the potential number of concurrent users, and, in the case of some services, strict maximum delay times requirements between successively transmitted data packets. Our prior FCC comments related to this proposed rulemaking have consistently requested 70 - 140 MHz. This request is justified by the above technical requirements which in turn is driven by the intended applications, and is further supported by other international frequency allocations for the same class of services (see table B).

The lack of sufficient bandwidth will limit incentives for suppliers, thus reducing competition due to the limited spectrum allocation. The utility of WLAN devices operating in this limited amount of spectrum will result in their performance levels well below conventional local area network standards.

### 8. Conclusions

(Fundamentally agree with the thrust of the proposed rulemaking and seek sufficient spectrum allocation to accomplish the wireless LAN performance and application requirements. Further we seek certain technical modifications as addressed above.)

# For Informtion

Letter Ballot of the 802.11 Working Group on the

## Resolution to prepare and file comments on FCC's Notice of Proposed Rule Making and Temporary Decision docket 90-314

(see next page)

Please return this ballot NO LATER THAN October 9, 1992 (by FAX)

\_\_\_\_\_ Approve (Affirmative), the resolution; comments on the attached

\_\_\_\_\_ Disapprove (Negative) the resolution for reasons given on the attached.

Please accompany this vote with specific reasons in sufficient detail that the wording changes that will cause the negative voter to change the vote to "Approve" can readily be determined)

An abstention vote must be accompanied with the reason for abstaining; without a reason, an abstention will be classified as an unreturned ballot.

\_\_\_\_\_ Abstain for lack of time to review the document

\_\_\_\_\_ Abstain for lack of expertise

\_\_\_\_\_ Abstain for \_\_\_\_\_

Voter name: (Please type) \_\_\_\_\_ Date: \_\_\_\_\_

Signature: \_\_\_\_\_

Phone no.: \_\_\_\_\_

Address: \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

Return this original ballot (and comments) to

Vic Hayes

NCR Wireless Communications & Networking Division

Zadelstede 1- 10

phone +31 3402 76528

3431 JZ Nieuwegein

fax + 31 3402 39125

The Netherlands

Please send by a service that would deliver this ballot before Monday, October 12, 1992.

(if you are late, please send a fax so we know your position)

## IEEE P802.11

### Resolution to prepare and file comments on FCC's Notice of Proposed Rule Making and Temporary Decision docket 90-314

Whereas, The FCC has issued an NPRM with many requests for input regarding the main business of IEEE P802.11;

Whereas, The deadline for filing comments is on the first day of the following IEEE P802 plenary meeting thus not allowing sufficient time for a decision at that meeting;

Whereas, the preparation of input to the FCC by an ad-hoc group with consultancy from attorneys has been prepared successfully in the past;

Whereas, subject matter has the highest attention of the government, thus providing opportunities with short notice;

Working Group P802.11 and the Executive Committee P802.0

Resolve, That doc: IEEE P802.11-92/115 is the basis for Comments to FCC's Notice of Proposed Rule Making docket 90-314 (and 92-100);

Resolve, That the ballot closes on Sunday 11 October: faxes or e-mail dated on or before October 11 or received via the post on October 12, 1992 are valid;

Resolve, That an ad-hoc committee of Messrs Rich Lee, Jim Lovette, Vic Hayes, Larry van der Jagt and Chandos Rypinski (with the help of attorneys) receive the mandate to:

- interpret the ballot result,
- expand the contents of doc: IEEE P802.11-92/115 into a comment document,
- decide whether filing of certain paragraphs is still appropriate or needs to be delayed due to circumstances outside 802's control After delay, if adjustment of the comment is required, the November meeting has to approve further action;

Resolve, That, if filing is required, the final review is made by Messrs. Don Loughry and Vic Hayes and, after their approval, the filing of the result is executed and filed, and

Resolve, That the chairman of IEEE P802.11 gets the mandate to defer inclusion of certain elements from the comments to reply comments or to deferred filing as permitted by the FCC.