IEEE P802.11
Wireless LANs

To: **Mr. Jan Kruys, Project Manager, ETSI Project BRAN**

Cc: **Jamshid Khun-Jush, ETSI BRAN PHY WG Chairman**
Mr. Furuya, MMAC
Jim Carlo, IEEE P802,Chairman
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Mary Shepherd, IEEE Standards Department, Intellectual Property Manager

Date: September 27, 1998

Reference: BRAN liaison statement, September 4, 1998
Enclosures: Draft Standard P802.11D1.4
Doc P802.11-98/329 – Channel Spacing Issues

Subject: **An Update and an offer to use Draft as base material**

Dear ETSI BRAN Officers and Members,

The IEEE P802.11 standards working group would like to inform you on the results of the September 1998 meeting and to ask you to consider the following in your coming meeting:

1) Contrary to the information which was provided to you at the BRAN#10 meeting, the Lucent+NTT proposal was given the Draft Standard status already at the July 98 meeting, but, as told, it was not forwarded to WG Letter Ballot yet. We did not forward it to WG Letter Ballot from September 98 interim meeting either, which is in concert with the suggestion as expressed in your liaison statement from September 4, 1998. However, our intent is to forward the draft to WG LB from the November 98 Plenary meeting, and we propose to work together to resolve as many issues as possible before that.

2) We realize that there may be subtle differences between the Physical Layer Specification required for HIPERLAN/2 and our own work. Therefore we offer our Draft Standard for consideration as base material for the Physical Layer of the HIPERLAN/2 standard. Our Draft is quite well aligned with the BRAN's consensus proposal and reflects the spirit of discussions we had during BRAN#10 meeting. Our feeling is that adoption of the basic elements of our draft will be a major contribution to alignment of our projects; will greatly reduce divergence; and finally, will help to bridge the schedule gap between the committees. Improvements contributed by BRAN and its members will be considered and incorporated through the mechanisms of Task Forces of the two committees, cross-participation and the joint January 1999 meeting.

3) The liaison person between 802.11 and BRAN, Jan Boer, informed us that he would not be able to carry that duty. The implication of that is that in the near future the liaison mechanism will be communication between the Task Forces of the committees. We consider this adequate in the near future, but if you would like to establish a different mechanism, e.g. appoint a liaison person, please inform us.

4) We made several technical decisions relevant to our co-operation, and we would like to inform you about those. The rationale for these decisions is detailed in an attached committee paper 98/329.

    a) The most significant is the channel spacing issue. Due to intermodulation problems, which would imply an excessive PA back-off, we decided to reduce the channel spacing to 18 MHz while retaining the sampling rate at 20 Msamples/s. The spacing of the outermost channel from band's edge is increased from 20 MHz to 23 MHz, and that makes a great difference in back-off requirements when US restricted-band regulations are considered. We would like to stress that the data rate in this solution is not compromised, and the data rates are 6/12/18/24/36 Mbit/s. Initial ACI (Adjacent Channel Interference) simulations show only a slight compromise. Our liaison person to MMAC provided an indication that such a solution can be acceptable to them. We would like you to consider this parameter change and provide your input.

    b) We added an optional 64QAM modulation which creates (in conjunction with ECC of rate R=2/3 or 3/4) data rates of 48 and 54 Mbit/s.

c) We tightened the oscillator accuracy to 20 PPM both clock and centre frequency.

d) We withdrew the time windowing specifications while retaining spectral mask and constellation accuracy test specifications instead. This enables use of both time-domain windowing or frequency-domain filtering approaches to implementation, as we discussed in BRAN#10 meeting.

e) We retained the 64 point FFT (20/64 MHz subcarrier spacing) while increasing the guard interval to 16 points (instead of 12) due to increased sampling rate. We were not able to verify the improvement promised by an increased (128) size FFT, when simulated in conjunction with preamble processing, while we've clearly seen the degradation in phase noise tolerance.

Attached you'll find a document P802.11aD1.4, the latest version of our Draft, and a paper 98/329 describing the rationale for some of the changes introduced in our last meeting. At 802.11 Chair's discretion permission is given hereby to distribute the documents to ETSI BRAN members through the password protected web server, while stressing that the Draft is a copyrighted material.

We are eagerly awaiting your response concerning convergence on the main parameters as described in our Draft Standard document, including the channel width of 18 MHz without compromising the data rate.

Sincerely,

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Attachments: IEEE 802.11a/D1.4
doc.: -98/329 TGa Channel Spacing