
IEEE P802.11
Wireless LANs

To: Mr. Jamshid Khun-Jush, Chairman, ETSI Project BRAN
Mr. Masaaki Mitani, Chairman, MMAC 5 GHz Project

Cc: Mr. Tomoki Ohsawa, Chairman of MMAC Wireless Ethernet WG
Jim Carlo, IEEE P802, Chairman
Howard Frazier, IEEE P802, Recording Secretary
Mary Shepherd, IEEE Standards Department, Intellectual Property Manager

Date: July 8, 1999

Enclosures: Draft Standard P802.11a/D6.2

Subject: An update on 802.11 OFDM PHY status after July 1999 meeting

Dear BRAN and MMAC officers and members,

We would like to bring you an update on the status of the 802.11a physical layer and on the changes, which were incorporated or discussed during the July 1999 meetings.

- 1) Following a request from BRAN, we adopted a different short training sequence carrier values. Those were brought initially to BRAN's attention by Masahiro Morikura from NTT and adopted by BRAN. In addition, we implemented BRAN's recommendation to increase the amplitude of those subcarriers in order to reflect the exact number of subcarriers in the short preamble. The second change was implemented by changing the $\sqrt{2}$ factor in equation 6 of our draft to $\sqrt{13/6}$.
- 2) We discussed a comment submitted by BRAN regarding the harmonization of bit patterns used for signalling the data rate used for the payload part of the packet. After discussing the issue with Jamshid Khun-Jush and the MMAC members present at the meeting we came to the conclusion that this harmonization is of a minor importance. The bit combinations are used in the different standards in different layers. In 802.11a the bit patterns are used in the PHY layer, while in BRAN and MMAC/WATM this bit patterns are used in the MAC/DLC layer. In addition, we had specific technical reasons for our current patterns. In particular, two of the bits R1-R2 are indicative of the modulation type used (this rule was not followed in the proposal brought to us), the bit R3 is indicative of the coding rate and the bit R4 is set to 1 in order to improve the peak-to-average ratio properties of the SIGNAL OFDM symbol. Given all those considerations we decided not to change the bit combinations used to describe the rate. We would like to propose BRAN and MMAC to consider adopting our values of those bit fields. In addition we would like you to consider allocating an additional reserved bit, just as 802.11a has in its SIGNAL field, so that future enhancements can be coordinated between the committees.

We received a letter from BRAN informing us of adoption of some of the changes we introduced, notably the pilot carrier scrambling, the interleaver structure and aligning the BPSK along the I axis. Together with the suggestions from BRAN which we adopted in this meeting, we feel that we are in an excellent state regarding the coordination of the 802.11a, BRAN and MMAC physical layers. As 802.11a nears its completion, we would like to thank the BRAN and MMAC members for their participation and their contributions along the process.

You will find all these changes incorporated in the draft standard 802.11a/D6.2, which is enclosed. This draft will be sent to a second recirculation ballot shortly after the meeting, and given that no objections arise, to the approval of the Revision Committee of the IEEE Standards Activities Board.

With the adoption of 802.11a by the MMAC Wireless Ethernet Working Group we would like to restate our hope that we will gain the support of BRAN and of ETSI for introduction of 802.11 networks, based on 802.11a PHY, in Europe, as well as throughout the rest of the world.

Sincerely,

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