

**IEEE P802.11
Wireless LANs**

***PAR 802.11b as approved**



**IEEE Standards Board:
Project Authorization Request (PAR) Form**

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1. Sponsor Date of Request:
1997-10-23

2. Assigned Project Number:
802.11b

3. PAR Approval Date:
9 Dec. 1997

4. Project Title, Copyright Agreement, and Working Group for this Project

I will write/revise a Standards Publication with the following TITLE: **STANDARD [FOR] Information Technology-Telecommunications and information exchange between systems-Local and Metropolitan networks-Specific requirements-Part 11: Wireless LAN Medium Access Control (MAC) and Physical Layer (PHY) specifications: Higher speed Physical Layer (PHY) extension in the 2.4 GHz band**

I hereby acknowledge my appointment as Official Reporter (usually the W.G. Chair) to the **IEEE P802.11, Working Group for Wireless LANs**

In consideration of my appointment and the publication of the Standards Publication identifying me, at my option, as an Official Reporter, I agree to avoid knowingly incorporating in the Standards Publication any copyrighted or proprietary material of another without such other's consent and acknowledge that the Standards Publication shall constitute a "work made for hire" as defined by the Copyright Act, and, that as to any work not so defined, I agree to and do hereby transfer any right or interest I may have in the copyright to said Standards Publication to the IEEE

Signature of Official Reporter: was signed on _____ Date: Oct 23, 1997 *

Name of Working Group Chair: **Vic Hayes**

Title: **Chair, IEEE P802.11**

Company: **Lucent Technologies Nederland B.V.**
1-10 Zadelstede
Nieuwegein 3431 JZ
the Netherlands

IEEE Member No: **01550144**
Telephone: **+31 30 609 7528**
FAX: **+31 30 609 7556**
email: **vichayes@lucent.co**

</P>5. Describe This Project:

- I. Update an existing PAR Yes No
(Indicate PAR Number/Approval Date.)
Is this project in ballot now? Yes No

- II. NEW STANDARD
REVISION of an existing standard. (Indicate Standard Number and Year):
 SUPPLEMENT to an existing standard (Indicate Standard Number and Year): **IEEE Std 802.11-1997**

III. FULL USE (5-year life cycle)
TRIAL USE (2-year life cycle)

IV. TARGET COMPLETION DATE for submittal to IEEE Standards Review Committee (REVCOM): 31 December 1999

6. Scope of Proposed Project: To develop a higher speed PHY extension to 802.11 operating in the 2.4 GHz band. Refer to the attachment for the complete scope

7. Purpose of Proposed Project: To extend the performance and the range of applications of the 802.11 compatible networks in the 2.4 GHz band by increasing the data rate achievable by such devices. This technology will be beneficial for improved access to fixed network LAN and internetwork infrastructure (including access to other wireless LANs) via a network of accesspoints, as well as creation of high performance ad-hoc networks. See the attachment for for a note.

8. Sponsor: Computer Society

Society/Committee: Computer Society/LMSC

9.

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- *(a.1) Are you aware of any patents relevant to this project? Yes (Attach Expl.)
No
- *(a.2) Are you aware of any copyrights relevant to this project? Yes (Attach Expl.)
No
- *(a.3) Are you aware of any trademarks relevant to this project? Yes (Attach Expl.)
No
- *(b) Are you aware of any other standards or projects with a similar scope? Yes (Attach Expl.)
No
- *(c) Is this standard intended to form the basis of an international project? Yes
No (Attach Expl.)
Do not know
- *(d) Is this project intended to focus on health, safety or environmental issues? Yes (Attach Expl.)
No
Do not know

10. Proposed Coordination/Recommended Method of Coordination

- I. **Mandatory Coordination**
SCC 10 (IEEE Dictionary) and IEEE Staff Editorial Review by Circulation of Drafts
SCC 14 (Quantities, Units and Letter symbols) by Circulation of Drafts

II. IEEE Coordination requested by Sponsor: *
COORDINATION

METHOD OF COORDINATION

US TAG for JTC1/SC6/WG1&3

Circ./drfts liais. memb. com. memb.

- **Additional Coordination Requested by Others:**
*Leave Blank -- to be completed by staff **

COORDINATION

METHOD OF COORDINATION

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Circ./drfts liais. memb. com. memb.

11. Submitted By:

*

Signature of Submitter: was signed on _____

Date: 30 Oct 97 _____

IEEE Member No: **05572953**

Name: **Jim Carlo**

Title: **IEEE 802/LMSC Spons
Chair**

Telephone: **+1 214 480 2524**

FAX: **+1 214 480 2611**

email: **jcarlo@ti.com**

Company: **Texas Instruments**
9208 Heatherdale Drive
Dallas TX 76243-6332
USA

DO NOT WRITE BELOW THIS LINE

Signature IEEE Officer: was signed by Don Loughry on _____ Date: 9 Dec. 1997

Title: V.P. Standards _____

Revised: _____

Attachments

Scope of the Project

The scope of this project is to develop a higher speed PHY extension to 802.11 operating in the 2.4 GHz band.

The project will evaluate the possibility of taking advantage of the provisions for rate expansion that are in place on the current standard PHYs.

The 802.11 MAC defines a mechanism for operation of stations supporting different data rates in the same area. The current 802.11 standard already defines the basic rates of - 1 Mbit/s and 2 Mbit/s for both Frequency Hopping (FH) and Direct Sequence (DS) PHYs. The two rates are supported by having same header for both rates with length and rate information passed in the header at the lowest ("basic") rate; then the body of the packet is transmitted at the rate chosen and with the corresponding modulation method.

The header structure of the two PHYs already supports passing rate information up to 4.5 Mbit/s (in 0.5 Mbit/s increments) for FH and up to 25.5 Mbit/s (in 0.1 Mbit/s increments) for DS. The proposed PAR targets further developing the provisions for enhanced data rate capability of 802.11 networks.

The 802.11 MAC incorporates already the interpretation of this information and the computation of expected packet duration even if the specific station does not support the rate at which the packet was sent.

The 802.11 MAC is compatible and will accommodate the higher PHY rates.

Compatibility with 802.11 MAC

The 802.11 PAR mentions that the MAC will be capable of operation in the 1-20 Mbit/s range. The 802.11 MAC will be reviewed for its capability to support rates up to about 10 Mbit/s targeted by the extended modulation methods.

Data rate

The data rates targeted by this project are at least 3 Mbit/s for FH PHY and at least 8 Mbit/s for DS PHY.

Radio Spectrum Availability

The proposed extensions will operate in the already allocated 2.4 GHz ISM band, in which 802.11 is already defined.

IEEE P802.11 will correspond with regulatory bodies worldwide in order to try to assure that the proposed extension will be applicable geographically as widely as possible.

Purpose

The purpose of project 802.11a is also for higher data rates, however, that project is for operation in the 5 GHz band, whereas this project is for operation in the 2.4 GHz band

Patents

The Working Group will adhere to the IEEE patent policy.