

**IEEE P802.11
Wireless LANs**

PAR for Wireless Personal Area Network (WPAN)

Date: 10 March 1999

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Abstract

The Wireless Personal Area Network Study Group has prepared the following Project Authorization Request (PAR) for submission to our Sponsor, the IEEE 802.11 WG, and we look forward to their comments.

We have provided the following history and contact information to assist the PAR reader. Finally, we have also forwarded under separate cover our response to the Five Criteria -98/161r5, as called out in the IEEE PAR Submission Process, as well as provided a URL to the five (5) Medium Access Control and Physical Layer Protocol WPAN Proposals for your consideration: <ftp://ftp.flexipc.com/wearablesgroup/CFP/>.

At the March 1998 Plenary Meeting of IEEE's 802 LMSC, 802.11 established a Study Group for Wireless Personal Area Networks (WPAN) to support Wearable Computers.

The officers of the Study Group (SG) are:

Function: Chairman 802.11 SG WPAN Name: Dick Braley Phone #: +1 901 375 6535 Fax #: +1 901 375 6757 E-mail: rcbraley@fedex.com	Function: Vice-Chair 802.11 SG WPAN Name: Bob Heile Phone #: +1 617 873 4835 Fax #: +1 617 873 5470 E-mail: bheile@bbn.com	Function: Secretary/Tech Editor 802.11 SG WPAN Name: Ian Gifford Phone #: +1 978 442 4650 Fax #: +1 978 442 5442 E-mail: giffordi@amp.com
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The objectives for the Study Group are:

- Review WPAN/WLAN Requirements
- Determine Need for Standard
- If warranted draft a PAR for submittal
- Seek appropriate Sponsorship within 802

Revision History:

Revision 0 January 15, 1998, the Wearables Ad Hoc Committee drafts the first version of the IEEE PAR
Revision 1 April 9, 1998, SG at the Interim Meeting in Irvine, Discusses and hands off the PAR to Rich
Revision 2 May 4, 1998, Major Edits by Rich converting the old PAR to the new PAR
Revision 3 May 21, 1998, SG at the Interim Meeting in Irving, Minor Edits led by Rich
Revision 4 May 27, 1998, Minor Edits by Rich
Revision 5 May 28, 1998, Minor Edits by Rich
Revision 6 May 28, 1998, Minor Edits by Ian
Revision 7 October 26, 1998, Minor Edits by Ad Hoc SG
Revision 8 January 12, 1999, Minor Edits by the SG based on LB16 Comments -99/18 and January 29, 1999, Minor Edits & added Appendices by the SG Sub Group -99/7r1
Revision 9 March 10, 1999, Minor Edits & added Appendices by the SG -99/51

IEEE Standards Board Jan98 Project Authorization Request (PAR) Page1(Rev V9)

1. Sponsor Date 2. Assigned Project 3. PAR Approval
of Request Number DATE
[2-1-99] [P]

[] PAR Signature Page Received {IEEE Staff to check Box}

4. Project Title and Working Group/Sponsor for this Project
Document type : {Place an X in only one option below}
[X] Standard for {Document stressing the verb "SHALL"}
[] Recommended Practice for {Document stressing the verb "SHOULD"}
[] Guide for {Document stressing the verb "MAY"}

TITLE: [STANDARD FOR Telecommunications and Information Exchange Between Systems - LAN/MAN Specific Requirements - Part XX: Wireless Medium Access Control (MAC) and physical layer (PHY) specifications for Wireless Personal Area Networks (WPAN)]

{Copyright release at the end of this form must be submitted with appropriate signatures by postal mail or FAX (1-732-562-1571)}

Name of Working Group(WG) : [Sponsor: IEEE 802.11 WG for WLAN, Proposed Working Group: Wireless Personal Area Networks]

Name of Official Reporter (usually the WG Chair): [Bob Heile]
Title in WG: [802.XX Acting Chair] IEEE/Affiliate Memb # [01670801]
Organization: [GTE] Telephone: [+1 617 873 4835]
Address: [10 Moulton Street] FAX: [+1 508 222 0515]
City/State/Zip: [Cambridge, MA USA] EMAIL: [bheile@bbn.com]

Name of WG Chair (if different than Reporter): [Vic Hayes]
Title in WG: [802.11 Chair] IEEE/Affiliate Memb # [01550144]
Organization: [Lucent Technologies] Telephone: [+31 30 609 7528]
Address: [Zadelstede 1-10] FAX: [+31 30 609 7556]
City/State/Zip: [Nieuwegein, NL NL-3431JZ] EMAIL: [vichayes@lucent.com]

Name of Sponsoring Society and Committee: [IEEE 802 LAN/MAN Standards Committee]
Name of Sponsor Committee Chair: [Jim Carlo]
Relationship to Sponsor: [IEEE 802 LMSC Sponsor Chair]
Organization: [Texas Instruments] Telephone: [+1-214-480-2524]
Address: [9208 Heatherdale Drive] FAX: [+1-214-480-2611]
City/State/Zip: [Dallas, TX 76243-6332] EMAIL: [jcarlo@ti.com]

5. Describe this Project by answering each of four questions below:
- 5a. Update an existing PAR? {Yes/No} [No]
If Yes: Indicated PAR number/approval date []
If YES: Attach letter indicating changes/rationale for changes.
If Yes: Is this PAR in ballot now? [] {Yes/No}
- 5b. Choose one from the following:
b1 -[X] New Standard
b2 -[] Revision of existing standard {number and year} []
b3 -[] Supplement to existing standard {number and year} [802.11 1997]
- 5c. Choose one from the following:
c1 -[X] Full Use (5-year life cycle)
c2 -[] Trial Use (2-year cycle)
- 5d. Fill in Target Completion Date to IEEE RevCom [November 2000]

6. Scope of Proposed Project
[To define PHY and MAC specifications for wireless connectivity with fixed, portable and moving devices within or entering a Personal Operating Space (POS). A goal of the WPAN Group will be to achieve a level of interoperability (see -99/5) which could allow the transfer of data between a WPAN device and an 802.11 device.

The 802.11 PHY and MAC Standard has been reviewed to determine its suitability to meet the Functional Requirements of the WPAN Applications as specified in IEEE documents -98/295-298 and -98/352. Detailed suggestions on proposed changes to the IEEE 802.11 MAC & PHY Standard have been reported in documents -98/322r2, 323, 324.]

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7. Purpose of Proposed Project:

[To provide a standard for low complexity, low power consumption wireless connectivity to support interoperability among devices within or entering the POS. This includes devices (see 12c) that are carried, worn, or located near the body. The proposed project will address Quality of Service to support a variety of traffic classes.]

8. Intellectual Property {Answer each of the questions below}

8a. Are you aware of any patents relevant to this project?

[No] {Yes, with detailed explanation below/ No}

[] {Explanation}

8b. Are you aware of any copyrights relevant to this project?

[No] {Yes, with detailed explanation below/ No}

[] {Explanation}

8c. Are you aware of any trademarks relevant to this project?

[No] {Yes, with explanation below/ No}

[] {Explanation}

9. Are you aware of other standards or projects with a similar scope?

[Yes] {Yes, with explanation below/ No}

[Infrared Data Association (IrDA), Home Radio Frequency Working Group (HRFWG) Bluetooth Special Interest Group (SIG), Wireless Access Protocol (WAP) Forum. These groups are not standards organizations but they have similar charters and the Working Group intends to establish liaisons with these groups as appropriate]

10. International Harmonization

Is this standard planned for adoption by another international organization?

[Yes] {Yes/No/?? if you don't know at this time}

If Yes: Which International Organization [ISO/IEC JTC1/SC6]

If Yes: Include coordination in question 13 below

If No: Explanation []

11. Is this project intended to focus on health, safety or environmental issues?

[No] {Yes/No/?? if you don't know at this time}

If Yes: Explanation? []

12. Proposed Coordination/Recommended Method of Coordination

12a. Mandatory Coordination

SCC 10 (IEEE Dictionary) by DR

IEEE Staff Editorial Review by DR

SCC 14 (Quantities, Units and Letter symbols) by DR

12b. Coordination requested by Sponsor and Method:

[ISO/IEC JTC1/SC6] by [DR] {circulation of DRafts/LIaison memb/COMmon memb}

[] by [] {circulation of DRafts/LIaison memb/COMmon memb}

[] by [] {circulation of DRafts/LIaison memb/COMmon memb}

[] by [] {circulation of DRafts/LIaison memb/COMmon memb}

{Choose DR or LI or CO for each coordination request}

12c. Coordination Requested by Others:

[] {added by staff}

Additional Explanation Notes: {Item Number and Explanation}

[] {If necessary, these can be continued on additional pages}

6 Scope:

A Personal Operating Space (POS) is the space about a person or object that typically extends up to 10 meters in all directions and envelops the person whether stationary or in motion.

The proposed WPAN Standard will be developed to ensure coexistence with all 802.11 Networks.

7 Purpose:

Examples of devices, which can be networked, include Computers, Personal Digital Assistants (PDAs)/Handheld Personal Computers (HPCs), printers, microphones, speakers, headsets, bar code readers, sensors, displays, pagers, and cellular & Personal Communications Service (PCS) phones.

PAR Copyright Release and Signature Page

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1. Sponsor Date of Request [2-1-99] 2. Assigned Project Number [P] Title []

I hereby acknowledge my appointment as Official Reporter (usually the WG Chair) to the [WPAN Study Group] {Name of Working Group} 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 defined, I agree to and do hereby transfer any right or interest I may have in the copyright to said Standards Publication to IEEE.

Signature of Official Reporter _____ Date _____ Name of Official Reporter (usually the WG Chair): [Bob Heile] Title in WG: [802.XX Acting Chair] IEEE/Affiliate Memb # [01670801] Organization: [GTE] Telephone: [+1 617 873 4835] Address: [10 Moulton Street] FAX: [+1 508 222 0515] City/State/Zip: [Cambridge, MA USA] EMAIL: [bheile@bbn.com]

Submitted by: (This MUST be the Sponsor Chair or the Sponsor's Liaison Representative to the IEEE Standards Board)

Signature of Submitter _____ Date _____

Name of Sponsor Committee Chair: [Jim Carlo] Relationship to Sponsor: [IEEE 802 LMSC Sponsor Chair] Organization: [Texas Instruments] Telephone: [+1-214-480-2524] Address: [9208 Heatherdale Drive] FAX: [+1-214-480-2611] City/State/Zip: [Dallas, TX 76243-6332] EMAIL: [jcarlo@ti.com]

The submitter must be the sponsoring committee's liaison to the IEEE Standards Board or the chair of the sponsoring committee. The PAR will not be submitted to the Standards Board without the signature of the Official Reporter and the Sponsor Committee Chair. Once the PAR is completed, it shall be forwarded to the person designated by the sponsor as responsible for submitting it to the Standards Board New Standards Committee/NESCOM (normally the sponsoring committee's liaison to the IEEE Standards Board). Be certain to include all

attachment sheets and supporting correspondence. The submitter will be notified in writing when the PAR is received and when the PAR will be considered for approval by the Standards Board. After the Standards Board meeting, the submitter and official reporter will be notified in writing of the action taken.

Signature by IEEE Officer: _____ Date: _____

Title: _____

Appendix A

Wireless Personal Area Networking Study Group Document Archive

Web Browser:

<ftp://ftp.flexipc.com/wearablesgroup/Index.htm>

FTP:

<ftp://ftp.flexipc.com/wearablesgroup/>

*Appendix B*Wireless Personal Area Networking Study Group Definition of WPAN
Interoperability Classes

WPAN Interoperability Classes

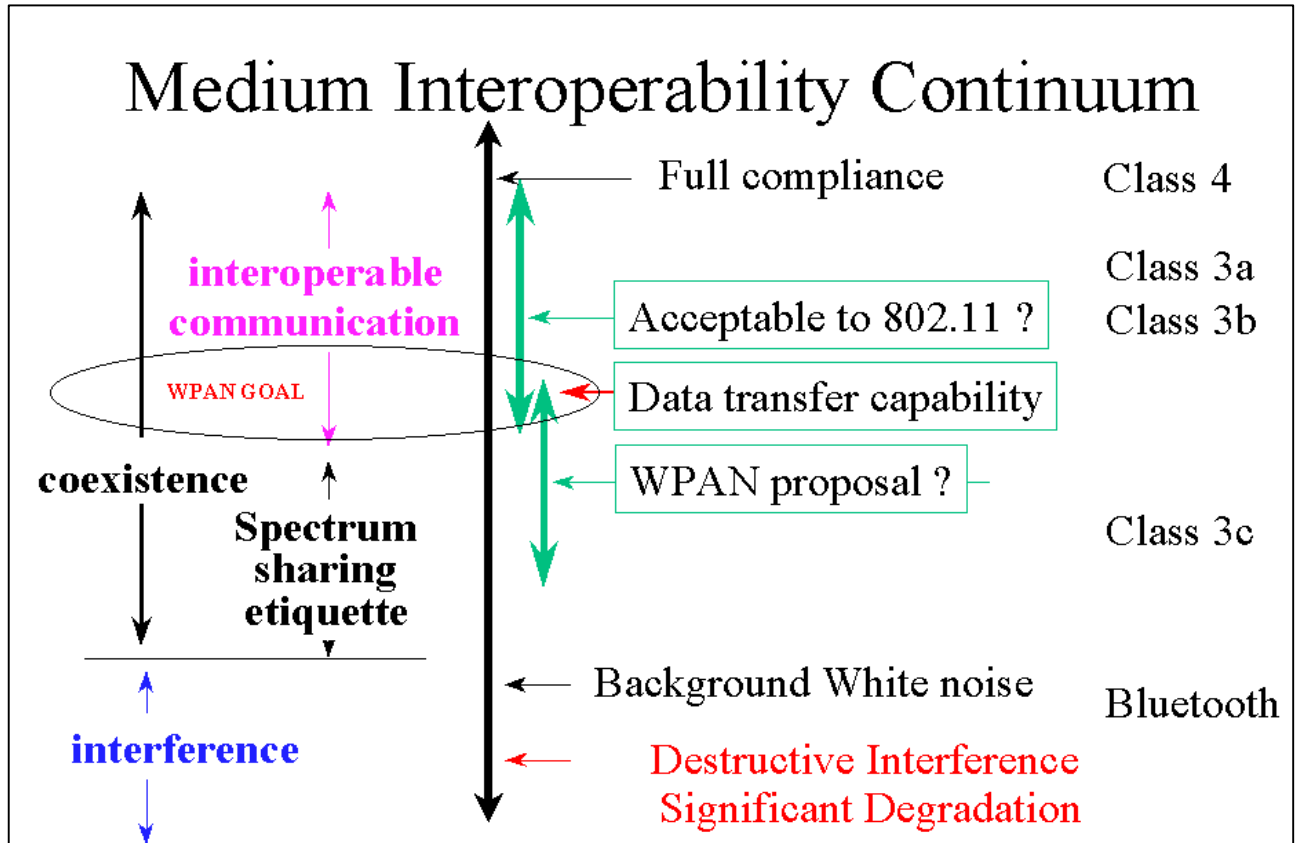
- Class 4 - Full Compliance to the 802.11 MAC & PHY PICS
- **Class 3 - Partial Interoperability: there is a way on the medium to exchange data without an intermediate device**
 - Class 3a Transmit and Receive
 - Class 3b Receive Only
 - Class 3c Detect Energy
- Class 2 - Bridge-like (1 MAC/2 PHYs)
- Class 1 - Gateway-like (> 1 MAC)
- Class 0 - Non Interoperable

Source: doc.: IEEE 802.11-99/5r1

The above graphic was presented, courtesy Pat Kinney, Intermec to the IEEE P802.11 Working Group on January 13, 1999 during the Interim Meeting in Orlando, FL USA doc.: IEEE 802.11-99/5r1. The purpose of the graphic is to provide a "communication device" between the P802.11 Members such that the WPAN SG interoperability goal is clearer. The WPAN Standard will fall into Class 3 denoted above.

Appendix C

Wireless Personal Area Networking Study Group Definition of WPAN Medium Interoperability Continuum



Source: doc.: IEEE 802.11-99/5r1

The above graphic was presented, courtesy Bruce Kraemer, Harris, to the IEEE P802.11 Working Group on January 13, 1999 during the Interim Meeting in Orlando, FL USA doc.: IEEE 802.11-99/5r1. The purpose of the graphic is to provide a "communication device" between the P802.11 Members such that the WPAN SG interoperability goal is clearer. The WPAN Standard will fall into the "WPAN Goal" circle denoted above.