

## IEEE 802.16 Working Group on Broadband Wireless Access

<http://WirelessMAN.org>



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4 April 2001

Mr. Robert Jones  
Director of the Radiocommunication Bureau  
International Telecommunication Union  
Radiocommunication Sector  
Place des Nations  
CH-1211 Geneva 20  
Switzerland

Dear Mr. Jones,

In light of Resolution ITU-R 9-1 <<http://www.itu.int/itudoc/itu-r/res/63888.html>>, which we appreciate very much, I request that you please distribute the following liaison contribution to ITU-R JTG 4-7-8-9, ITU-R Working Party 7C, and ITU-R JRG 8A-9B.

Sincerely,

Roger Marks, Chair  
IEEE 802.16 Working Group on Broadband Wireless Access

cc: Jim Carlo, Chair, IEEE 802 LAN/MAN Standards Committee  
Vic Hayes, Regulatory Ombudsman, IEEE 802 LAN/MAN Standards Committee  
David C. Chauncey, Regulatory Liaison, IEEE Working Group 802.16  
José M. Costa, ITU-R Liaison, IEEE Working Group 802.16  
Judy Gorman, Managing Director, IEEE Standards Activities

Enclosure

**Liaison Contribution to ITU-R JTG 4-7-8-9, ITU-R WP 7C, and ITU-R JRG 8A-9B  
from IEEE 802.16 Working Group on Broadband Wireless Access\***  
**on**  
**Wireless High-Speed Unlicensed Metropolitan Area Network (WirelessHUMAN™) Standards**

This letter from the IEEE 802.16 Working Group on Broadband Wireless Access provides information relevant to the current ITU-R preparatory studies for the WRC-2003, Agenda Item 1.5, Resolution 736 (WRC 2000).

The IEEE 802.16 Working Group is developing a standard for fixed broadband wireless access systems operating in license-exempt 5 to 6 GHz bands. We call this the WirelessHUMAN™ (Wireless High-Speed Unlicensed Metropolitan Area Networks) standard. The project number is IEEE P802.16b.

Systems based on the WirelessHUMAN™ standard may share the bands that the 1997 World Radiocommunications Conference (WRC'97) allocated on a worldwide primary basis for Earth Exploration Satellite Services (EESS) and Space Research Services (SRS), including Synthetic Aperture Radar (i.e., SAR 1-4) active space-borne sensors in the 5 to 6 GHz band. The IEEE 802.16 Working Group is aware of coexistence issues and would welcome mutual efforts to address them.

The attached IEEE P802.16b Project Authorization Request describes the WirelessHUMAN™ project. Further information is available <<http://ieee802.org/16/tg4>>.

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# IEEE-SA Standards Board Project Authorization Request (PAR) Form

(2001-Rev 1)

<b>1. Sponsor Date of Request</b> <b>2001 Feb 09</b>	<b>2. Assigned Project Number</b> <b>P802.16b</b>	<b>3. PAR Approval Date (to be completed by staff)</b> <b>2001-03-17</b>
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Copyright release must be submitted with appropriate signatures by FAX (1-732-562-1571)

## 4. Project Title, Recorder and Working Group/Sponsor for this Project

Document type and title: {Place an X in only one option below}

- Standard for**{document stressing the verb "shall" }
- Recommended Practice for**{document stressing the verb "should" }
- Guide for** {document in which good practices are suggested, stressing the verb "may" }

Title: **Local and Metropolitan Area Networks — Amendment to Standard Air Interface for Fixed Broadband Wireless Access Systems — Media Access Control Modifications and Additional Physical Layer for License-Exempt Frequencies**

Name of Working Group (WG): **IEEE 802.16 Working Group on Broadband Wireless Access**

Name of Official Reporter (usually the WG Chair) who must be an SA member as well as an IEEE and/or Affiliate Member: **Roger B. Marks**

IEEE Standards Staff has verified that the Official Reporter (or Working Group Chair) is an IEEE and an IEEE-SA member:  (Staff to check box)

Contact Information:

Telephone **+1 303 497 3037** FAX: **+1 303 497 7828**

E-mail: **r.b.marks@ieee.org**

Name of Working Group Chair (if different than Reporter):

IEEE Standards Staff has verified that the Working Group Chair is an IEEE and an IEEE-SA member:  (Staff to check box)

Contact Information:

Telephone [...] FAX: [...]

E-mail: [...]

Name of Sponsoring Society and Committee: **Computer Society, LAN/MAN Standards Committee; Microwave Theory and Techniques Society**

Name of Committee Sponsor Chair: **Jim Carlo, Chair, LAN/MAN Standards Committee**

IEEE Standards Staff has verified that the Sponsor [ ] (Staff to check box)  
Chair is an IEEE and an IEEE-SA member:

Contact Information:

Telephone +1 214 340 8837 FAX: +1 214 853 5274

E-mail: jcarlo@ti.com

## 5. Type of Project

a. Is this an update to an existing PAR? [Yes]

If YES, indicate PAR Number/Approval Date [P802.16.1b-2000]

If YES, is this project in ballot now? [No]

[Indicate changes/rationale for revised PAR in Item #16. This should be no more than 5 lines.]

b. Choose one from the following:

[...] New standard

[...] Revision of existing standard {number and year} [...]

[ x ] Amendment to an existing standard {number and year} [P802.16-2001]

[...] Corrigendum to an existing standard {number and year} [...]

## 6. Life Cycle

[ x ] Full Use (5-year life cycle)

[...] Trial Use (2-year life cycle)

## 7. Balloting Information

Choose one from the following:

[ x ] Individual Sponsor Balloting

[...] Entity Sponsor Balloting

[...] Mixed Balloting (combination of Individual and Entity Sponsor Balloting)

Expected Date of Submission for Initial Sponsor Ballot: 2001 Nov 30

8. Fill in Projected Completion Date for Submittal to RevCom: 2002 Mar 31

## 9. Scope of Proposed Project:

This standard specifies the medium access control layer and physical layers of the air interface of interoperable fixed point-to-multipoint broadband wireless access systems. The specification enables transport of data, video, and voice services. Physical layers are specified for both licensed and license-exempt bands.

This Amendment expands the scope of the original project by extending it to license-exempt bands (thereby defining the Wireless High-Speed Unlicensed Metropolitan Area Network [WirelessHUMAN™] Standard). It specifies the physical layer and medium access control layer of the air interface of interoperable fixed broadband wireless metropolitan area network systems, including point-to-multipoint. The standard enables access to data, video, and voice services with quality of service in unlicensed (i.e., license-exempt) bands designated for public network access. It will focus on the 5-6 GHz range and may be applied to unlicensed bands between 2 and 11 GHz. It will address strategies for coexistence with other unlicensed applications. The

project will utilize or modify applicable elements from the following:

- MAC: IEEE 802.16
- PHY: IEEE 802.11a; ETSI BRAN HIPERLAN/2

## 10. Purpose of Proposed Project:

To enable rapid worldwide deployment of innovative, cost-effective, and interoperable multivendor broadband wireless access products. To facilitate competition in broadband access by providing alternatives to wireline broadband access. To facilitate coexistence studies, encourage consistent worldwide allocation, and accelerate the commercialization of broadband wireless access spectrum.

This Amendment enhances the original project by extending it to license-exempt bands. It will identify techniques to tolerate interference in the unlicensed bands and facilitate strategies for coexistence with other unlicensed band systems such as 802.11 and 802.15. It will encourage consistent worldwide spectrum allocation and accelerate the commercialization of unlicensed broadband wireless access spectrum. Utilization of unlicensed frequencies will address a market that includes residences, small office-home office (SOHO), telecommuters, and small and medium enterprises (SME).

## 11. Intellectual Property {Answer each of the questions below}

Has the sponsor reviewed the IEEE patent policy with the group? **Yes**

Are you aware of the possibility of any copyrights relevant to this project? **Yes**

Are you aware of the possibility of any trademarks relevant to this project? **Yes**

Are you aware of possible registration of objects or numbers due to this project? **Yes**

## 12. Are you aware of any other standards or projects with a similar scope?

**Yes**

Explanation:

IEEE 802.11, ETSI HIPERLAN/2, and IEEE 802.15 standards and projects address primarily short range WLAN and WPAN applications, respectively. PACS-UA and PACS-UB address unlicensed operation in the unlicensed personal communication services (UPCS) bands at 1910-1930MHz and 2390-2400MHz. This Amendment is specifically directed towards wireless point-to-multipoint MAN/WAN systems that provide access to core public networks using the unlicensed band spectrum. These systems typically serve large numbers of dispersed subscribers.

## 13. International Submissions

Will this standard (in part or in whole) be submitted to an international organization for consideration/adoption?

**Yes**

If Yes, please answer the following questions:

Which International Organization/Committee **ITU-R**

International Contact Information:

Name: **Dr. José M. Costa**

Address: **P.O. Box 3511, Station C, Ottawa, ON K1Y 4H7 Canada**

Phone: **+1 613 763 7574**

FAX: **+1 613 763 1225**

Email: **costa@nortelnetworks.com**

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

No

#### 15. Mandatory Coordination

SCC 10 (IEEE Dictionary)	by <b>DR</b> {Circulation of <b>DR</b> afts}
IEEE Staff Editorial Review by	by <b>DR</b>
SCC 14 (Quantities, Units and Letter symbols)	by <b>DR</b>

Additional communication and input from other organizations or other IEEE Standards Sponsors should be encouraged through participation in the working group or the balloting pool.

#### 16. Additional Explanatory Notes: {Item Number and Explanation}

##### 8) The intended timetable is:

Nov 2000:	Issue Call for Proposals for PHY and MAC <ul style="list-style-type: none"><li>• PHY: Modifications of 802.11a and/or HIPERLAN/2</li><li>• MAC: Modifications of 802.16</li></ul>
Jan 2001:	Review proposals
Feb 2001:	Select Candidate Proposals at Interim Meeting
Mar 2001:	Decision on specific modifications
May 2001:	First Tentative Draft Standard submitted for review
July 2001:	Comment Resolutions
Sep 2001:	Second Tentative Draft Standard submitted for Letter Ballot
Nov 2001:	Initiate Sponsor Ballot
Mar 2002:	Submit to RevCom

5a) This revision renumbers the PAR from “802.16.1b” to “802.16b” to reflect renumbering of the base project from 802.16.1 to 802.16. The title is also simplified, and the PAR is also brought into the current format.