PROJECT	IEEE P802.16 Broadband Wireless Access Working Group
TITLE	Draft Coexistence PAR Adopted on May 11, 1999
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DIST	IEEE P802.16 Working Group
ABSTRACT	This document contains the wording for the PAR on "Coexistence of Broadband Wireless Access Systems" as agreed to by members of the IEEE 802.16 Coexistence Task Group on 11 May 1999. It is presented for acceptance as wording of the document to be submitted to the IEEE 802 Sponsor Executive Committee (SEC) for approval at the 802 SEC meeting on July 8, 1999. [Note: a vote of 12 May 1999 authorized the 802.16 Working Group Chair to submit this document, with suitable editorial revisions, to the IEEE 802 Sponsor Executive Committee (SEC) by 4 June 1999, requesting SEC approval at its meeting of 8 July 1999.]
NOTICE	

Project Authorization Request (PAR) for Coexistence

1. Sponsor Date of Request:
July, 1999

2. Assigned Project Number:
TBD

3. PAR Approval Date:
TBD

Project Title and Working Group/Sponsor for this Project:

Document Type: Recommended Practice

Title:

Recommended Practice for Telecommunications and Information Exchange Between Systems - LAN/MAN Specific Requirements – Coexistence of Broadband Wireless Access Systems.

Name of Working Group (WG):

IEEE 802.16 Working Group on Broadband Wireless Access

Name of Official Reporter:Dr. Roger B. Marks

Title in WG:Chair

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Name of WG Chair

(if different than Reporter): [ ]

IEEE/Affiliate Memb # [ ]{Required}

Company: [ ]

Address: [ ]

City/State/Zip: [ ]

Telephone: [ ]

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EMAIL: [ ]

Name of Sponsoring Society and Committee:

[Computer Society, LAN/MAN Standards Committee;

Microwave Theory and Techniques Society]

Name of Sponsoring Committee Chair:

[Jim Carlo, LAN/MAN Standards Committee]

Company: **[Texas Instruments]**

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5. Describe this Project by answering each of four questions below:

5a. Update an existing PAR? {Yes/No} **[No]**

If YES: Indicate PAR number/approval date **[ ]**

If YES: Is this project in ballot now? **[ ]**

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}[ ]

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 **[30 June 2000]**

6. Scope of Proposed Project

This project covers development of a Recommended Practice for the design and coordinated deployment of BWA systems to minimize interference so as to maximize system performance and/or service quality. This practice will provide for coexistence using frequency and spatial separation and will cover three areas. First, it will recommend limits of in-band and out-of-band emissions from BWA transmitters through parameters including radiated power, spectral masks and antenna patterns. Second, it will recommend receiver tolerance parameters, including noise floor degradation and blocking performance, for interference received from other BWA systems as well as from other terrestrial and satellite systems. Third, it will provide coordination

parameters, including band plans, separation distances and power flux density limits, to enable successful deployment of BWA systems with tolerable interference. The scope includes interference between systems deployed across geographic boundaries in the same frequency band, and systems deployed in the same geographic area in different frequency bands (including different systems deployed by a single licence-holder in sub-bands of the licencees authorized bandwidth). The scope does not cover coexistence issues due to intra-system frequency re-use within the operator's licensed band, and does not consider the impact of interference created by BWA systems on non-BWA terrestrial and satellite systems.

7. Purpose of Proposed Project

The purpose of this recommended practice is to provide coexistence guidelines to license holders, service providers, deployment groups and system integrators. The equipment parameters contained within this practice will benefit equipment and component vendors and industry associations by providing design targets. The benefits of this practice will include:

Coexistence of different systems with higher assurance that system performance objectives will be met.

Minimal need for case-by-case interference studies and coordination between operators to resolve interference issues.

Preservation of a favorable electromagnetic environment for deployment and operation of BWA systems, including future systems compliant to the 802.16 interoperability standard.

Optimize coverage and spectrum utilization.

Cost-effective system deployment.

Intellectual Property {Answer each of the questions below}

8a. Are you aware of any patents relevant to this project? {Yes/No} [Yes]

{If yes, provide detailed explanation below}

{Some companies within the group have indicated that they may have IP interest.}

8b. Are you aware of any copyrights relevant to this project? {Yes/No} [No]

{If yes, provide detailed explanation below}

{Explanation}

8c. Are you aware of any trademarks relevant to this project? {Yes/No} [No]

{If yes, provide detailed explanation below}

{Explanation}

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

Administrations are developing general coordination criteria and procedures to allow BWA operators to deploy systems. Detailed co-existence guidance, such as described in this PAR, is in its early stages of development in other regional and international standards bodies. Studies addressing certain aspects of the coexistence issues are being developed by or have been completed by organizations such as:

ITU-R JRG 8A/9B, ITU-R 9B

ETSI-TM4

CITEL PCC-III

ARIB

NSMA

RABC

We will coordinate with these groups as appropriate.

International Harmonization

Is this standard planned for adoption by another international organization? {Yes/No}
[Yes]

If Yes: Which International Organization?
[ITU-R]

If Yes: Include coordination in question 13 below.

If No: Explanatio
[ ]

11. Is this project intended to focus on health, safety or environmental issues? {Yes/No}
[No]

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:

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

[ITU-R, including Joint Working Group 8A/9B (Wireless Access Systems)] by [LI]
{circulation of Drafts/Liaison member/Common member}

[ETSI TM4] by [LI]

{circulation of Drafts/Liaison Member Common member}

[{Others TBD}] by [DR]

{circulation of Drafts/Liaison Member/ Common member}

12c. Coordination Requested by Others: [ ] {Added by staff}

Proposed Responses to 802's Five Criteria

Broad Market Potential

The PAR approved for the 802.16 interoperability standard justified the market potential for BWA systems. It should be noted, however, that successful deployment of BWA systems compliant to the future 802.16 interoperability standard will depend, in part, on a defined electromagnetic interference environment. As such, the guidelines developed in this project, which can be applied to existing systems in advance of the interoperability standard, will benefit the future success of systems compliant to that standard in the market.

Compatibility with IEEE802 Architecture

This recommended practice will cover both existing BWA systems and systems compliant to a future 802.16 interoperability standard. As these latter systems will be compliant to the IEEE802 architecture, this practice is applicable to 802.

There will be nothing in this practice which contradicts or forces any deviation from IEEE802 architecture in compliant systems.

Distinct Identity

The 802.16 interoperability standard will cover interoperability of hub and subscriber stations. This practice covers coexistence of BWA systems that may or may not be capable of interoperation. As such, the subject is distinct from the interoperability project.

Technical Feasibility

The 802.16 interoperability PAR addressed technical feasibility of BWA systems. A recommended coexistence practice is also technically feasible. There are precedents in cross-border coordination procedures, e.g. Radio Advisory Board of Canada has drafted a report regarding LMDS/LMCS cross border sharing. Another precedent is the FCC part 15 spectral "etiquette" for unlicensed systems in the band 1910-1930 MHz.

Economic Feasibility

The 802.16 inteoperability PAR addressed economic feasibility of BWA systems. This recommended coexistence practice will enhance economic feasibility by reducing the need for case-by-case interference analysis that would otherwise add to the deployment cost of BWA systems. As well, identification of equipment performance parameters will help focus component suppliers on design criteria which promotes lower deployment cost.

END OF DOCUMENT