PAR FORM

PAR Status: Revision of Amendment
PAR Approval Date: 0000-00-00
PAR Signature Page on File: Yes

1. Assigned Project Number: 802.16e

2. Sponsor Date of Request: 2004-06-29

3. Type of Document: Standard for

4. Title of Document:
Draft: Amendment to IEEE Standard for Local and Metropolitan Area Networks - Part 16: Air Interface for Fixed and Mobile Broadband Wireless Access Systems - Amendment for Physical and Medium Access Control Layers for Combined Fixed and Mobile Operation in Licensed Bands

5. Life Cycle: Full-Use

6. Type of Project:
6a. Is this an update to an existing PAR? Yes
If Yes: Indicated PAR number/approval date: 802.16e - 2002-12-11
If Yes: Is this Project in Ballot now? No
6b. The Project is a: Amendment to Std IEEE 802.16-2004

7. Working Group Information:
Name of Working Group: IEEE 802.16 Working Group on Broadband Wireless Access
Approximate Number of Expected Working Group Members:200

8. Contact information for Working Group Chair:
Name of Working Group Chair: Roger B Marks
Telephone: 303-497-3037 **FAX:** 303-497-7828
Email: r.b.marks@ieee.org

9. Contact information for Co-Chair/Official Reporter, Project Editor or Document Custodian if different from the Working Group Chair:
Name of Co-Chair/Official Reporter, Project Editor or Document Custodian:
Telephone: FAX:
Email:

10. Contact information for Sponsoring Society or Standards Coordinating Committee:
Name of Sponsoring Society and Committee: Computer Society Local and Metropolitan Area Networks
Name of Sponsoring Committee Chair: Paul Nikolich
Telephone: 857-205-0050 **FAX:** 781-334-2255
Email: paul.nikolich@att.net
Name of Liaison Rep. (if different from the Sponsor Chair):
Telephone: FAX:
Email:

Name of Co-Sponsoring Society and Committee: Microwave Theory and Techniques Society Standards Coordinating Committee
Name of Co-Sponsoring Committee Chair: Jeffrey Jargon
Telephone: 303-497-3596 **FAX:**
Email: jargon@boulder.nist.gov
Name of Liaison Rep. (if different from the Sponsor Chair):
Telephone: FAX:

Email:

11. The Type of ballot is: Individual Sponsor Ballot

Expected Date of Submission for Initial Sponsor Ballot: 2004-10-01

12. Fill in Projected Completion Date for Submittal to RevCom: 2004-12-31

Explanation for Modified PAR that completion date is being extended past the original four-year life of the PAR:

13. Scope of Proposed Project:

This document provides enhancements to IEEE Std 802.16-2004 to support subscriber stations moving at vehicular speeds and thereby specifies a system for combined fixed and mobile broadband wireless access. Functions to support higher layer handoff between base stations or sectors are specified. Operation is limited to licensed bands suitable for fixed/mobile use below 6 GHz. Fixed 802.16-2004 subscriber capabilities shall not be compromised (See Item #19).

Is the completion of this document contingent upon the completion of another document? No

14. Purpose of Proposed Project:

This amendment enhances IEEE Standard 802.16-2004 by providing additional specifications required to support mobile as well as fixed terminals.

14a. Reason for the standardization project:

This standard will increase the market for broadband wireless access solutions by taking advantage of the inherent mobility of wireless media. It will fill the gap between very high data rate wireless local area networks and very high mobility cellular systems. It will support fixed and mobile services for both enterprise and consumer markets.

15. Intellectual Property:

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

Is the sponsor aware of copyrights relevant to this project? No

Is the sponsor aware of trademarks relevant to this project? No

Is the sponsor aware of possible registration of objects or numbers due to this project? No

16. Are there other documents or projects with a similar scope? Yes

(a) ITU-R Working Party 8F, in conjunction with 3GPP and 3GPP2, is developing air interfaces for IMT-2000 and systems beyond IMT-2000 for both mobile and fixed applications. (b) IEEE P802.20 project targets systems optimized for high mobility and IP transport.

Similar Scope Project Information:

Sponsor: (a) ITU-R (b) IEEE 802
Project Number: (a) ITU-R Working Party 8F; (b) IEEE P802.20
Project Date: (a) ? (b) ?
Project Title: (a) IMT-2000 and systems beyond IMT-2000; (b) Mobile Broadband Wireless Access

17. Is there potential for this document (in part or in whole) to be adopted by another national , regional or international organization? Yes

If yes, please answer the following questions:

Which International Organization/Committee? ITU

International Contact Information?

Jose M Costa
Nortel Networks
3500 Carling Ave., P.O. Box C-3511
Ottawa, Ontario K1Y 4H7
Canada
613-763-7574
613-765-1225
costa@nortelnetworks.com

18. If the project will result in any health, safety, or environmental guidance that affects or applies to human health or safety, please explain in five sentences or less.

19. Additional Explanatory Notes: (Item Number and Explanation)

Item #6: This PAR is being modified to replace obsolete references to the base standard and to provide for scalable Fast Fourier Transform (FFT) sizes in the following ways: (a) In Item #6, the year of base standard was updated due to approval of the 2004 revision; (b) the target dates in Items #11 & 12 were updated to reflect the revised schedule; (c) Item #14 and #14a are non-substantive edits required by changes to the PAR form; (d) Item #16 eliminated references to distantly-related standards and added a reference to the P802.20 project that has since been established. In addition, the following changes were made to the Scope:

- replacement of obsolete references to the base standard
- removal of the 2 GHz lower limit; this change was made to reflect the removal of this limit during the revision of the base standard
- changed the restriction “suitable for mobility” to “suitable for fixed/mobile use” to clarify the distinction with respect to fully mobile standards

The following changes were made to the Additional Notes regarding Item #13:

- replacement of obsolete references to the base standard
- expanded the description of interoperability and introduced the possibility of additional FFT sizes; this change was made to allow for improved operation given the range of channel bandwidths available in worldwide allocations while continuing to provide a backward-compatible mobile upgrade path to all systems conforming to IEEE Standard 802.16-2004

Item #13 - Subscriber stations and base stations specified herein shall be interoperable with existing physical layer specifications in IEEE Std 802.16-2004 except when using one of their extensions with scaled down FFT sizes (1024, 512, 128). For OFDM (256 FFT)/OFDMA (2048 FFT) implementations as specified in IEEE Std 802.16-2004, there shall be no changes or additions to the mandatory features and backward compatibility shall be maintained. Because the standard will utilize the 802.16-2004 medium access control layer, it will support multimedia services requiring differentiated Quality of Service, and it will support adaptive physical link control so that subscriber stations can receive higher-rate service when they move more slowly, include more effective antennas, or are otherwise in better link conditions.