

P802.16q

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Type of Project: Amendment to IEEE Standard 802.16-2009

PAR Request Date: 20-Jul-2012

PAR Approval Date: 30-Aug-2012

PAR Expiration Date: 31-Dec-2016

Status: PAR for an Amendment to an existing IEEE Standard

Root Project: 802.16-2009

1.1 Project Number: P802.16q

1.2 Type of Document: Standard

1.3 Life Cycle: Full Use

2.1 Title: IEEE Standard for Air Interface for Broadband Wireless Access Systems
Amendment for Multi-tier Networks

3.1 Working Group: Broadband Wireless Access Working Group (C/LM/WG802.16)

Contact Information for Working Group Chair

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None

3.2 Sponsoring Society and Committee: IEEE Computer Society/LAN/MAN Standards Committee (C/LM)

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3.3 Joint Sponsor: IEEE Microwave Theory and Techniques Society/Standards Coordinating Committee (MTT/SCC)

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4.1 Type of Ballot: Individual

4.2 Expected Date of submission of draft to the IEEE-SA for Initial Sponsor Ballot: 03/2014

4.3 Projected Completion Date for Submittal to RevCom: 02/2015

5.1 Approximate number of people expected to be actively involved in the development of this project: 30

5.2.a. Scope of the complete standard: This standard specifies the air interface, including the medium access control layer (MAC) and physical layer (PHY), of combined fixed and mobile point-to-multipoint broadband wireless access (BWA) systems providing multiple services. The MAC is structured to support the WirelessMAN-SC, WirelessMAN-OFDM, and WirelessMAN-OFDMA PHY specifications, each suited to a particular operational environment.

Changes in scope: This standard specifies the air interface, including the medium access control layer (MAC) and physical layer (PHY), of combined fixed and mobile point-to-multipoint broadband wireless access (BWA) systems providing multiple services. The MAC is structured to support ~~multiple~~ the **WirelessMAN-SC, WirelessMAN-OFDM, and WirelessMAN-OFDMA** PHY specifications, each suited to a particular operational environment.

5.2.b. Scope of the project: This amendment specifies MAC/PHY protocol enhancements for cooperation among base stations in multi-tier networks to enhance interference mitigation, mobility management, and base station power management. Enhanced base stations shall support legacy mobile stations. PHY changes to any mobile stations are out of scope.

In addition, these protocol enhancements include management messaging between base stations, and between base stations and mobile stations.

This amendment shall comply with IEEE Std 802, IEEE Std 802.1D, and IEEE Std 802.1Q.

5.3 Is the completion of this standard dependent upon the completion of another standard: No

5.4 Purpose: This standard enables rapid worldwide deployment of innovative, cost-effective, and interoperable multivendor broadband wireless access products, facilitates competition in broadband access by providing alternatives to wireline broadband access, encourages consistent worldwide spectrum allocation, and accelerates the commercialization of broadband wireless access systems.

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5.5 Need for the Project: As the spectral efficiency of wireless links approaches its theoretical limits, and with the data traffic requirements continuing to grow rapidly, cell density and cooperation among base stations must increase in order to further improve network capacity and efficiently manage radio resources. Multi-tier access network architecture consisting of macrocells and a variety of overlaid smaller cells provides an approach towards solving the problem, allowing low cost per bit and efficiently utilizing all spectral resources in the system. The current IEEE Std 802.16 and the amendments under development do not address the requirements for radio resource management based on cooperation among base stations in a multi-tier access network architecture. This project will address these needs, enabling cost-effective improvements in system capacity and user quality of service with interoperable and efficient management of network resources, mobility, and spectrum.

5.6 Stakeholders for the Standard: Vendors developing IEEE 802.16 products, carriers using IEEE 802.16 products, the WiMAX Forum(TM), ARIB, TTA, and participants in ITU-R Working Party 5D.

Intellectual Property

6.1.a. Is the Sponsor aware of any copyright permissions needed for this project?: No

6.1.b. Is the Sponsor aware of possible registration activity related to this project?: No

7.1 Are there other standards or projects with a similar scope?: No

7.2 Joint Development

Is it the intent to develop this document jointly with another organization?: No

8.1 Additional Explanatory Notes (Item Number and Explanation): [5.5] The "variety of overlaid smaller cells" includes micro cells, pico cells, and femto cells.

[5.2.b] A "multi-tier network" is a wireless Metropolitan Area Network (MAN) comprised of macro cells, micro cells, pico cells, and femto cells, typically controlled by the same operator.

[5.2.b] The enhancements specified by this amendment are limited to licensed-band operation.