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IEEE Standard for Air Interface for Broadband Wireless Access Systems

IEEE Computer Society
and the
IEEE Microwave Theory and Techniques Society

Sponsored by the
LAN/MAN Standards Committee

IEEE
3 Park Avenue
New York, NY 10016-5997
USA

IEEE Std 802.16™-2012
(Revision of
IEEE Std 802.16-2009)

17 August 2012

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Approved 8 June 2012
IEEE-SA Standards Board

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Abstract: This standard specifies th e 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 pr oviding multiple services. The MAC is structured to support the WirelessMAN-SC, WirelessMAN-OFDM, an d WirelessMAN-OFDMA PHY specifications, each suited to a particular operational environment. The standard enables rapid worldwide deployment of innovative, cost-effective, an d interoperable multivendor broadband wireless access products, facilitates co mpetition in broadband access by providing alternatives to wireline broadband access, encourages consistent worldwide spectrum allocation, and accelerates the commercialization of broadband wireless access systems.

Keywords: broadband wireless access, BWA, cellular layer, fixed broadband wireless access, IEEE 802.16, IMT- 2000, MAN, mana gement information base, MIB, microwave, mobile broadband, mobile broadband wireless access, OF DM, OFDMA, radio, standard, WAS, wireless access systems, WirelessMAN ®, wireless metropolitan area network

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IEEE Std 802.16m™-2011 (amendment)	March 2011	**Roger B. Marks,** *Working Group Chair* **Jose Puthenkulam, Rakesh Taori,** *Working Group Vice Chairs* **Herbert Ruck, Scott Probasco, Erik Colban,** *Working Group Secretaries*

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Introduction

This introduction is not part of IEEE Std 802.16-2012, IEEE Standard for Air Interface for Broadband Wireless Access Systems.

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. The 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.

This standard is a revision of IEEE Std 802.16-2009 and consolidates material from IEEE Std 802.16j-2009 and IEEE Std 802.16h-2010. This standard also incorporates IEEE Std 802.16m-2011, with the exception of the WirelessMAN-Advanced Air Interface, which is now specified in IEEE Std 802.16.1™-2012. This revision supersedes and makes obsolete IEEE Std 802.16-2009 as well as IEEE Std 802.16j-2009, IEEE Std 802.16h-2010, and IEEE Std 802.16m-2011.

Conformance test methodology

The multipart conformance test documents for IEEE Std 802.16 are designated by “IEEE Standard 802.16/ConformanceXX.”

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