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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
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New York, NY 10016-5997
USA

**IEEE Std 802.16™-2017**
(Revision of
IEEE Std 802.16-2012)

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Approved 6 December 2017
**IEEE-SA Standards Board**




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**Abstract:** 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 multi-vendor 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.

**Keywords:** broadband wireless access, BWA, cellular layer, fixed broadband wireless access, IEEE 802.16™, IMT-2000, MAN, management information base, MIB, microwave, mobile broadband, mobile broadband wireless access, OFDM, OFDMA, radio, standard, WAS, wireless access systems, WirelessMAN®, wireless metropolitan area network

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**Ronald Murias,** *Technical Editor*

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| IEEE Std 802.16-2012 | August 2012 | **Roger B. Marks,** Working Group*Chair*<br>**Rakesh Taori,** *Working Group Vice Chair*<br>**Erik Colban,** *Working Group Secretary*<br>**Harry Bims,** *Working Group Secretary*<br>**Zheng Yan-Xiu ( 鄭延修 ),** *Maintenance Task Group Chair and Technical Editor* |



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# Introduction

This introduction is not part of IEEE Std 802.16-2017, 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 multi-vendor 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 802.16-2012 and consolidates material from IEEE Std 802.16p-2012, IEEE Std 802.16n-2013, IEEE Std 802.16q-2015, and IEEE Std 802.16s-2017.



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