
**Information technology —
Telecommunications and information
exchange between systems — Local and
metropolitan area networks — Specific
requirements —**

**Part 11:
Wireless LAN medium access control
(MAC) and physical layer (PHY)
specifications**

[ISO/IEC/IEEE 8802-11:2012](https://standards.iso.org/standards/sist/585d1c46-f43e-43db-aadd-2b9db47a5b9f/iso-iec-8802-11-2012)

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*Technologies de l'information — Télécommunications et échange
d'information entre systèmes — Réseaux locaux et métropolitains —
Exigences spécifiques —*

*Partie 11: Spécifications du contrôle d'accès du milieu sans fil (MAC) et
de la couche physique (PHY)*



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This first edition of ISO/IEC/IEEE 8802-11 cancels and replaces ISO/IEC 8802-11:2005, which has been technically revised. It also incorporates the Amendments ISO/IEC 8802-11:2005/Amd.4:2006, ISO/IEC 8802-11:2005/Amd.5:2006 and ISO/IEC 8802-11:2005/Amd.6:2006.

ISO/IEC/IEEE 8802 consists of the following parts, under the general title *Information technology — Telecommunications and information exchange between systems — Local and metropolitan area networks — Specific requirements*:

- *Part 11: Wireless LAN medium access control (MAC) and physical layer (PHY) specifications*
- *Part 15-4: Wireless medium access control (MAC) and physical layer (PHY) specifications for low-rate wireless personal area networks (WPANs)*

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Approved 6 February 2012

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Abstract: This revision specifies technical corrections and clarifications to IEEE Std 802.11 for wireless local area networks (WLANS) as well as enhancements to the existing medium access control (MAC) and physical layer (PHY) functions. It also incorporates Amendments 1 to 10 published in 2008 to 2011.

Keywords: 2.4 GHz, 3650 MHz, 4.9 GHz, 5 GHz, 5.9 GHz, advanced encryption standard, AES, carrier sense multiple access/collision avoidance, CCMP, channel switching, Counter mode with Cipher-block chaining Message authentication code Protocol, confidentiality, CSMA/CA, DFS, direct link, dynamic frequency selection, E911, emergency alert system, emergency services, forwarding, generic advertisement service, high throughput, IEEE 802.11, interface, international roaming, interworking, interworking with external networks, LAN, local area network, MAC, measurement, medium access control, media-independent handover, medium access controller, mesh, MIH, MIMO, MIMO-OFDM, multi-hop, multiple input multiple output, network advertisement, network discovery, network management, network selection, off-channel direct link, path-selection, PHY, physical layer, power saving, QoS, quality of service, PHY, physical layer, QoS mapping, radio, radio frequency, RF, radio resource, radio management, SSP, SSPN, subscriber service provider, temporal key integrity protocol, TKIP, TPC, transmit power control, tunneled direct link setup, wireless access in vehicular environments, wireless LAN, wireless local area network, WLAN, wireless network management, zero-knowledge proof

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Introduction

This introduction is not part of IEEE Std 802.11-2012, IEEE Standard for Information technology—Telecommunications and information exchange between systems—Local and metropolitan area network—Specific requirements—Part 11: Wireless LAN Medium Access Control (MAC) and Physical Layer (PHY) specifications.

This revision gives users, in one document, the IEEE 802.11 standard for wireless local area networks (WLANS) with all the amendments that have been published to date.

Incorporating published amendments

The original standard was published in 1999 and reaffirmed in 2003. A revision was published in 2007, which incorporated into the 1999 edition the following amendments: IEEE Std 802.11a™-1999, IEEE Std 802.11b™-1999, IEEE Std 802.11b-1999/Corrigendum 1-2001, IEEE Std 802.11d™-2001, IEEE Std 802.11g™-2003, IEEE Std 802.11h™-2003, IEEE Std 802.11i™-2004, IEEE Std 802.11j™-2004 and IEEE Std 802.11e™-2005.

The current revision, IEEE Std 802.11-2012, incorporates the following amendments into the 2007 revision:

- IEEE Std 802.11k™-2008: Radio Resource Measurement of Wireless LANs (Amendment 1)
- IEEE Std 802.11r™-2008: Fast Basic Service Set (BSS) Transition (Amendment 2)
- IEEE Std 802.11y™-2008: 3650–3700 MHz Operation in USA (Amendment 3)
- IEEE Std 802.11w™-2009: Protected Management Frames (Amendment 4)
- IEEE Std 802.11n™-2009: Enhancements for Higher Throughput (Amendment 5)
- IEEE Std 802.11p™-2010: Wireless Access in Vehicular Environments (Amendment 6)
- IEEE Std 802.11z™-2010: Extensions to Direct-Link Setup (DLS) (Amendment 7)
- IEEE Std 802.11v™-2011: IEEE 802.11 Wireless Network Management (Amendment 8)
- IEEE Std 802.11u™-2011: Interworking with External Networks (Amendment 9)
- IEEE Std 802.11s™-2011: Mesh Networking (Amendment 10)

As a result of publishing this revision, all of the previously published amendments and revisions are now retired.

Technical corrections, clarifications, and enhancements

In addition, this revision specifies technical corrections and clarifications to IEEE Std 802.11 as well as enhancements to the existing medium access control (MAC) and physical layer (PHY) functions. Such enhancements include incorporated interpretation requests.

Revised clause and annex numbering

In IEEE Std 802.11-2012, the order of clauses and annexes has also been revised. The result of this revised order on the numbering of clauses and annexes is summarized in Figure A.

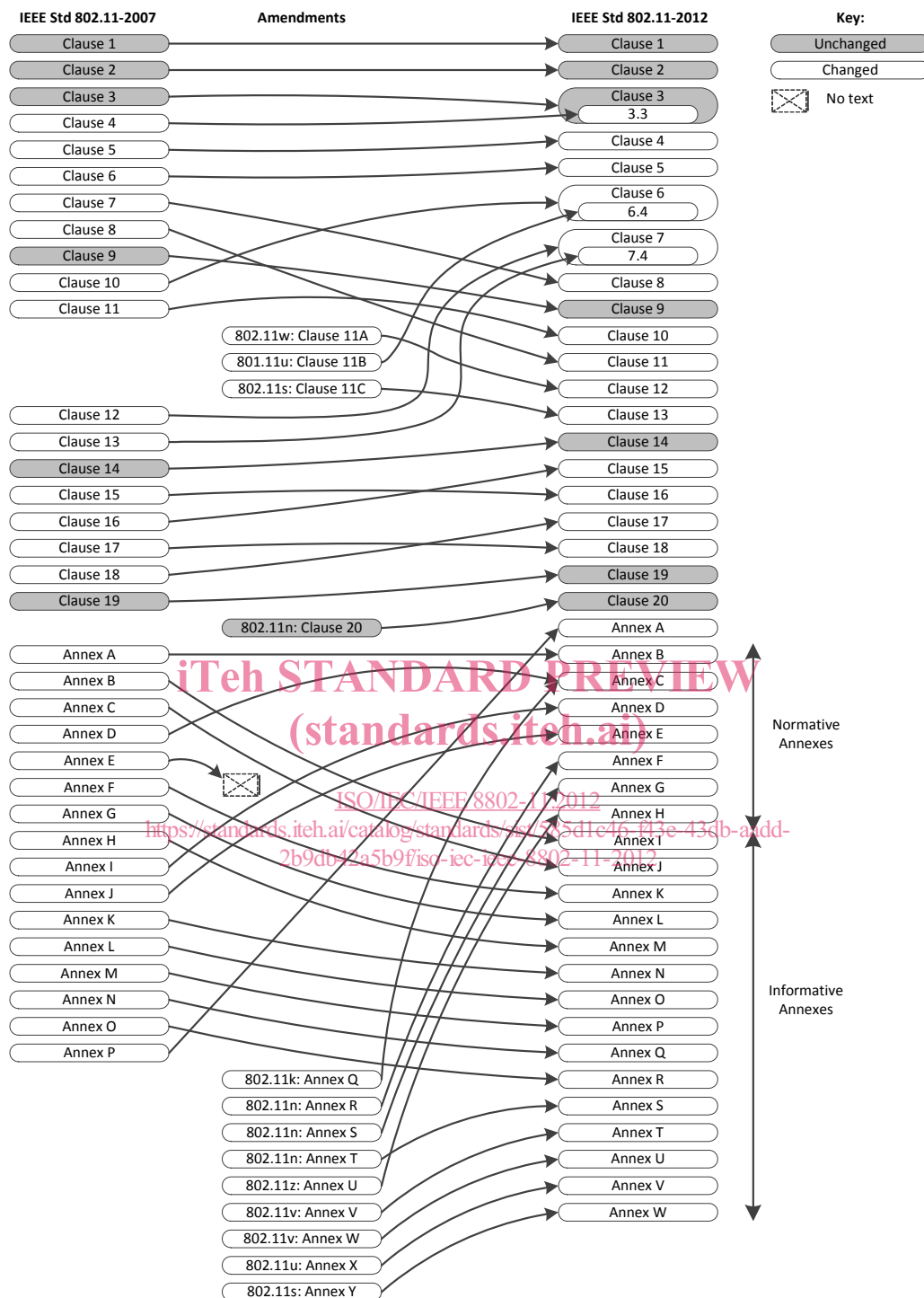


Figure A—Changes in clause numbers and annex letters from 2007 revision to 2012 revision

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