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Third edition
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**Telecommunications and information
exchange between systems —
Specific requirements for local and
metropolitan area networks —**

Part 11:

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

*Télécommunications et échange entre systèmes informatiques —
Exigences pour les réseaux locaux et métropolitains —*

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



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ISO/IEC/IEEE 8802-11 was prepared by the LAN/MAN of the IEEE Computer Society (as IEEE 802.11-2020) and drafted in accordance with its editorial rules. It was adopted, under the “fast-track procedure” defined in the Partner Standards Development Organization cooperation agreement between ISO and IEEE, by Joint Technical Committee ISO/IEC JTC 1, *Information technology*, Subcommittee SC 6, *Telecommunications and information exchange between systems*.

This third edition cancels and replaces the second edition (ISO/IEC/IEEE 8802-11:2018), which has been technically revised. It also incorporates the Amendments ISO/IEC/IEEE 8802-11:2018/Amd 1:2019, ISO/IEC/IEEE 8802-11:2018/Amd 2:2019, ISO/IEC/IEEE 8802-11:2018/Amd 3:2020, ISO/IEC/IEEE 8802-11:2018/Amd 4:2020, ISO/IEC/IEEE 8802-11:2018/Amd 5:2020.

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IEEE Std 802.11™-2020
(Revision of IEEE Std 802.11-2016)

**IEEE Standard for 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

Developed by the

LAN/MAN Standards Committee
of the
IEEE Computer Society

Approved 3 December 2020

IEEE SA Standards Board

Abstract: 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 are specified in this revision. Amendments 1 to 5 published in 2016 and 2018 have also been incorporated into this revision.

Keywords: 2.4 GHz, 256-QAM, 3650 MHz, 4.9 GHz, 5 GHz, 5.9 GHz, 60 GHz, advanced encryption standard, AES, audio, beamforming, carrier sense multiple access/collision avoidance, CCMP, channel switching, clustering, contention based access period, Counter mode with Cipher-block chaining Message authentication code Protocol, confidentiality, CSMA/CA, DFS, direct link, directional multi-gigabit, dynamic allocation of service period, dynamic extension of service period, dynamic frequency selection, dynamic truncation of service period, E911, EDCA, emergency alert system, emergency services, fast session transfer, forwarding, GCMP, generic advertisement service, high throughput, IEEE 802.11™, international roaming, interworking, interworking with external networks, LAN, local area network, MAC, management, measurement, medium access control, media-independent handover, medium access controller, mesh, MIS, millimeter-wave, MIMO, MIMO-OFDM, multi-band operation, multi-hop, multi-user MIMO, multiple input multiple output, network advertisement, network discovery, network management, network selection, noncontiguous frequency segments, OCB, path-selection, personal basic service set, PHY, physical layer, power saving, QoS, quality of service, quality-of-service management frame, radio, radio frequency, RF, radio resource, radio management, relay operation, spatial sharing, SSPN, subscriber service provider, television white spaces, TPC, transmit power control, video, wireless access in vehicular environments, wireless LAN, wireless local area network, WLAN, wireless network management, zero-knowledge proof

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