



**International
Standard**

**ISO/IEC/IEEE
8802-A**

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

**Part A:
Overview and architecture**

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

Partie A: Présentation et architecture

**Second edition
2026-08**



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IEEE Std 802®-2024

(Revision of IEEE Std 802-2014 as amended by
IEEE Std 802d™-2017, IEEE Std 802c™-2017,
and IEEE Std 802f™-2023)

IEEE Standard for Local and Metropolitan Area Networks: Overview and Architecture

Developed by the

LAN/MAN Standards Committee
of the
IEEE Computer Society

Approved 11 December 2024

IEEE SA Standards Board

Abstract: An overview to the family of IEEE 802[®] standards is provided in this standard. It describes the reference models for the IEEE 802 standards and explains the relationship of these standards to the higher layer protocols; it specifies the structure of IEEE 802 MAC addresses; it specifies identification of public, private, prototype, and standard protocols; it specifies an object identifier hierarchy used within IEEE 802 for uniform allocation of object identifiers used in IEEE 802 standards; and it specifies a method for higher layer protocol identification.

Keywords: BANs, body area networks, EtherTypes, IEEE 802[®], IEEE 802 architecture, IEEE 802 reference model, LANs, local area networks, MANs, metropolitan area networks, object identifiers, PANs, personal area networks, RANs, regional area networks, protocol identifiers, protocol types

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PDF: ISBN 979-8-8557-1960-4 STD27775
Print: ISBN 979-8-8557-1961-1 STDPD27775

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Introduction

This introduction is not part of IEEE Std 802-2024, IEEE Standard for Local and Metropolitan Area Networks Overview and Architecture.

This document is the third major revision of the IEEE 802[®] overview and architecture. This revision integrates into the previous revision of the standard, IEEE Std 802-2014, the three subsequent amendments:

- IEEE Std 802d[™]-2017, which specifies a Uniform Resource Name (URN) root identifier for YANG data models
- IEEE Std 802c[™]-2017, which specifies an optional local medium access control (MAC) address space structure
- IEEE Std 802f[™]-2023, which specifies a YANG module that contains EtherType information

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IEEE Standard for Local and Metropolitan Area Networks: Overview and Architecture

1. Overview

1.1 Scope

This standard contains descriptions of the IEEE 802[®] standards published by the IEEE for frame-based data networks as well as a reference model (RM) for protocol standards. A specification for the identification of public, private, and standard protocols is included.

1.2 Purpose

This standard serves as the foundation for the family of IEEE 802 standards published by IEEE for local area networks (LANs), metropolitan area networks (MANs), personal area networks (PANs), and regional area networks (RANs), etc.

1.3 Word usage

The word *shall* indicates mandatory requirements strictly to be followed in order to conform to the standard and from which no deviation is permitted (*shall* equals *is required to*).

The word *should* indicates that among several possibilities one is recommended as particularly suitable, without mentioning or excluding others; or that a certain course of action is preferred but not necessarily required (*should* equals *is recommended that*).⁶

The word *may* is used to indicate a course of action permissible within the limits of the standard (*may* equals *is permitted to*).⁷

The word *can* is used for statements of possibility and capability, whether material, physical, or causal (*can* equals *is able to*).

⁶The use of the word *must* is deprecated and cannot be used when stating mandatory requirements, *must* is used only to describe unavoidable situations.

⁷The use of *will* is deprecated and cannot be used when stating mandatory requirements, *will* is only used in statements of fact.

2. Normative references

The following referenced documents are indispensable for the application of this document (i.e., they must be understood and used; therefore, each referenced document is cited in text and its relationship to this document is explained). For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments or corrigenda) applies.

IEEE Std 802.1Q™, IEEE Standard for Local and Metropolitan Area Networks—Bridges and Bridged Networks.^{8,9}

IEEE Std 802.1AC™, IEEE Standard for Local and Metropolitan Area Networks—Media Access Control (MAC) Service Definition.

IETF RFC 2578, Structure of Management Information Version 2 (SMIv2).¹⁰

IETF RFC 3406, Uniform Resource Names (URN) Namespace Definition Mechanisms, October 2002.

IETF RFC 8069, URN Namespace for IEEE, February 2017.

ISO/IEC/IEEE 8802-2:1998, International Standard for Information technology—Telecommunications and information exchange between systems—Local and metropolitan area networks—Specific requirements—Part 2: Logical link control.¹¹

ITU-T Recommendation X.660, Information technology—Procedures for the operation of object identifier registration authorities: General procedures and top arcs of the international object identifier tree.¹²

⁸The IEEE standards referred to in Clause 2 are trademarks owned by The Institute of Electrical and Electronics Engineers, Incorporated.

⁹IEEE publications are available from The Institute of Electrical and Electronics Engineers (<https://standards.ieee.org/>).

¹⁰IETF documents (i.e., RFCs) are available the Internet Engineering Task Force (<https://www.rfc-archive.org/>).

¹¹ISO/IEC publications are available from the International Organization for Standardization (<https://www.iso.org/standards.html>) and the International Electrotechnical Commission (<https://www.iec.ch/>). ISO/IEC publications are also available in the United States from the American National Standards Institute (<https://www.ansi.org/>).

¹²ITU-T publications are available from the International Telecommunications Union (<https://www.itu.int/>).