

INTERNATIONAL
STANDARD

ISO/IEC
10038

ANSI/IEEE
Std 802.1D

First edition
1993-07-08

**Information technology — Telecommunications and
information exchange between systems — Local
area networks — Media access control (MAC)**

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*Technologies de l'information — Télécommunications et échange d'informations
entre systèmes — Réseaux locaux — Contrôle d'accès au milieu (MAC) — Ponts*
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Reference number
ISO/IEC 10038:1993 (E)
ANSI/IEEE
Std 802.1D, 1993 Edition

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Printed in the United States of America

ISBN 1-55937-325-3

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Foreword to International Standard ISO/IEC 10038 : 1993

This standard is part of a family of standards for Local and Metropolitan Area Networks. This family of standards deals with the Physical and Data Link layers as defined by the ISO Open Systems Interconnection Basic Reference Model (ISO 7498 : 1984). The access standards define several types of medium access technologies and associated physical media, each appropriate for particular applications or system objectives. Other types are under investigation.

The standards defining these technologies are as follows:

- (1) ISO/IEC 8802-3 [ANSI/IEEE Std 802.3, 1992 Edition], a bus utilizing CSMA/CD as the access method,
- (2) ISO/IEC 8802-4 [ANSI/IEEE Std 802.4-1990], a bus utilizing token passing as the access method,
- (3) ISO/IEC 8802-5 [ANSI/IEEE Std 802.5-1992], a ring utilizing token passing as the access method,
- (4) ISO 8802-7, a ring utilizing slotted ring as the access method.

ISO 8802-2 [ANSI/IEEE Std 802.2-1989], *Logical Link Control protocol*, is used in conjunction with the medium access standards.

ISO/IEC 10038 [ANSI/IEEE Std 802.1D, 1993 Edition], *Media access control (MAC) bridges*, specifies an architecture and protocol for the interconnection of IEEE 802 LANs below the MAC service boundary.

The reader of this document is urged to become familiar with the complete family of standards.

The main body of this standard serves for both the ISO/IEC 10038 and the IEEE Std 802.1D standards. ISO and IEEE each have unique foreword sections. The Annexes contain normative and informative material to both standards.

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**International Standard ISO/IEC 10038 : 1993
ANSI/IEEE Std 802.1D, 1993 edition**

(This edition contains ANSI/IEEE Std 802.1D-1990,
ANSI/IEEE Std 802.1i-1992, and IEEE Std 802.5m-1993)

**Information technology—
Telecommunications and information exchange
between systems—Local area networks—
Media access control (MAC) bridges**

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Abstract: An architecture for the interconnection of IEEE 802 Local Area Networks (LANs) below the level of the MAC Service, which is transparent to logical link control (LLC) and higher layer protocols, is defined. Transparent Bridging between Fibre Distributed Data Interface (FDDI) LANs and between FDDI LANs and IEEE 802 LANs is included. The operation and management of the connecting Bridges is specified. A Spanning Tree Algorithm and Protocol ensures a loop-free topology and provides redundancy. The Bridging method is not particular to any MAC Type; criteria for additional MAC-specific Bridging methods are defined. Source-Routing Transparent (SRT) Bridges are defined in an annex, and the protocols for the operation of source routing in an SRT Bridge are specified.

Keywords: data processing, information interchange, local area networks, metropolitan area networks, fibre distributed data interface (FDDI), mode of data transmission, network interconnection, models, source routing, Source-Routing Transparent (SRT) Bridge



Adopted as an International Standard by the
International Organization for Standardization
and by the



International Electrotechnical Commission



Published by
The Institute of Electrical and Electronics Engineers, Inc.



International Standard ISO/IEC 10038 : 1993

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In 1992, ANSI/IEEE Std 802.1D-1990 was adopted by ISO/IEC JTC 1, as draft International Standard ISO/IEC/DIS 10038. A further revision was subsequently approved by ISO/IEC JTC 1 in the form of this new edition, which is published as International Standard ISO/IEC 10038 : 1993.

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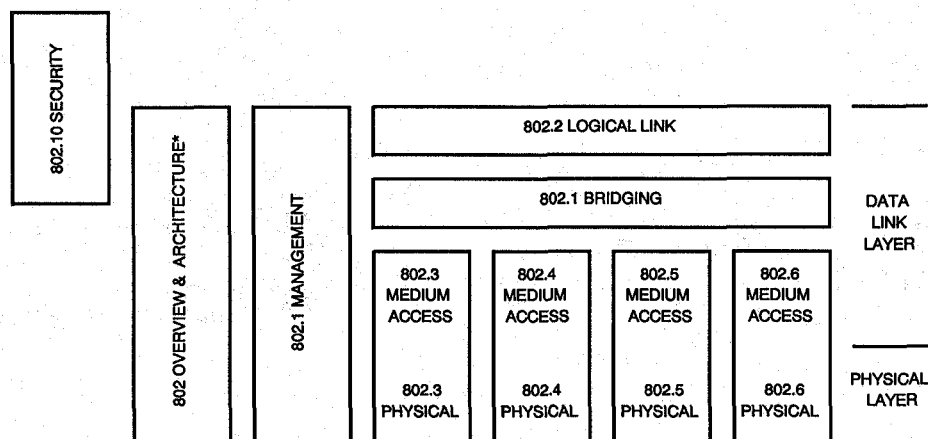
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Foreword to ANSI/IEEE 802.1D, 1993 Edition
(This edition contains ANSI/IEEE Std 802.1D-1990,
ANSI/IEEE Std 802.1i-1992, and IEEE Std 802.5m-1993)

(This Foreword is not a part of this International Standard or of ANSI/IEEE 802.1D, 1993 Edition.)

This standard is part of a family of standards for local and metropolitan area networks. The relationship between the standard and other members of the family is shown below. (The numbers in the figure refer to IEEE standard numbers.)



* Formerly IEEE Std 802.1A.

This family of standards deals with the Physical and Data Link layers as defined by the International Organization for Standardization (ISO) Open Systems Interconnection Basic Reference Model (ISO 7498 : 1984). The access standards define several types of medium access technologies and associated physical media, each appropriate for particular applications or system objectives. Other types are under investigation.

The standards defining these technologies are as follows:

- IEEE Std 802[†]: <https://standards.ieee.org/catalog/standard/802513484611-PT1-1993>
 Overview and Architecture. This standard provides an overview to the family of IEEE 802 standards. This document forms part of the 802.1 scope of work.
- IEEE Std 802.1B: LAN/MAN Management. Defines an Open Systems Interconnection (OSI) management-compatible architecture, and services and protocol elements for use in a LAN/MAN environment for performing remote management.
- ISO/IEC 10038 : 1993 [ANSI/IEEE Std 802.1D]: MAC Bridging. Specifies an architecture and protocol for the interconnection of IEEE 802 LANs below the MAC service boundary.
- IEEE Std 802.1E: System Load Protocol. Specifies a set of services and protocol for those aspects of management concerned with the loading of systems on IEEE 802 LANs.
- ISO 8802-2 [ANSI/IEEE Std 802.2]: Logical Link Control
- ISO/IEC 8802-3 [ANSI/IEEE Std 802.3]: CSMA/CD Access Method and Physical Layer Specifications
- ISO/IEC 8802-4 [ANSI/IEEE Std 802.4]: Token Bus Access Method and Physical Layer Specifications

[†] The 802 Architecture and Overview Specification, originally known as IEEE Std 802.1A, has been renumbered as IEEE Std 802. This has been done to accommodate recognition of the base standard in a family of standards. References to IEEE Std 802.1A should be considered as references to IEEE Std 802.

- ISO/IEC 8802-5 [ANSI/IEEE Std 802.5]: Token Ring Access Method and Physical Layer Specifications
- IEEE Std 802.6: Metropolitan Area Network Access Method and Physical Layer Specifications
- IEEE Std 802.10: Interoperable Local Area Network (LAN) Security, *Currently Contains Secure Data Exchange (SDE)*

In addition to the family of standards, the following is a recommended practice for a common technology:

- IEEE Std 802.7: IEEE Recommended Practice for Broadband Local Area Networks

The reader of this document is urged to become familiar with the complete family of standards.

Conformance Test Methodology

Another standards series, identified by the number 1802, has been established to identify the conformance test methodology documents for the 802 family of standards. This makes the correspondence between the various 802 standards and their applicable conformance test requirements readily apparent. Thus the conformance test documents for 802.3 are numbered 1802.3, the conformance test documents for 802.5 will be 1802.5, and so on. Similarly, ISO will use 18802 to number conformance test standards for 8802 standards.

Participants

The following is an alphabetical list of participants in the IEEE Project 802.1 Working Group at the time it approved IEEE Std 802.1D-1990:

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ANSI/IEEE Std 802.1D-1990 was approved by the American National Standards Institute (ANSI) on October 18, 1990.

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ANSI/IEEE Std 802.1i-1992 was approved by the American National Standards Institute (ANSI) on October 12, 1992.

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