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IEEE Std 802.3u-1995
(Supplement to ISO/IEC 8802-3: 1993
[ANSI/IEEE Std 802.3, 1993 Edition])

IEEE Standards for Local and Metropolitan Area Networks:

Supplement to Carrier Sense Multiple Access with Collision Detection (CSMA/CD) Access Method and Physical Layer Specifications

Media Access Control (MAC) Parameters, Physical Layer, Medium Attachment Units, and Repeater for 100 Mb/s Operation, Type 100BASE-T (Clauses 21–30)

Sponsor

**LAN MAN Standards Committee
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2nd Printing, Corrected Edition

Abstract: The ISO/IEC CSMA/CD Media Access Control (MAC) is given an additional set of parameters for 100 Mb/s operation. A repeater and added Physical Layers, known collectively as 100BASE-T, as well as significant additional supporting material for a Media Independent Interface (MII), management, and automatic configuration, are specified. This includes 100BASE-T4, which uses four pairs of Category 3, 4, or 5 generic twisted, balanced cable; 100BASE-TX, which uses two pairs of Category 5 balanced cable or 150 Ω shielded balanced cable; and 100BASE-FX, which uses two multi-mode fibers. Fibre Distributed Data Interface (FDDI) media interface specifications are referenced to provide the 100BASE-TX and 100BASE-FX physical signaling channels, defined under the subcategory 100BASE-X.

Keywords: 100BASE-FX, 100BASE-T, 100BASE-T4, 100BASE-TX, 100BASE-X, Auto-Negotiation, Fast Ethernet, management, Media Independent Interface (MII), repeater

The Institute of Electrical and Electronics Engineers, Inc.
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Corrected Edition, June 1996

The following corrections have been made to this edition:

Page 23: The designation of reference [A5] has been corrected to ANSI/EIA/TIA 526-14-1990. *[Note that further updates to annex A can be found in ISO/IEC 8802-3: 1996.]*

Page 32: In the last line of text on the page, the word “fourth” has been corrected to “sixth.”

Page 174: In figure 24-11, the “BAD SSD” box text has been corrected. “RXD<3.0> \Leftarrow 1110” now reads “RXD<3:0> \Leftarrow 1110”.

Page 234: The page, containing subclauses 27.7.4.11 and 27.7.4.12, was inadvertently omitted from the first printing. It is now included.

Page 286: Under list item a), notes 2 and 3 were misnumbered and have been corrected. Also, references in notes 2 and 3 to table 29-2 have been corrected to table 29-3.

Page 301: In table 30-1d, “aAutoNegAdvertisedTechnologyAbilit” has been corrected to “aAutoNegAdvertisedTechnologyAbility”.

Page 312: In subclause 30.4.1.1.2, the reference to 20.2.2.3 for “other” has been corrected to 30.2.5.

Page 323: In subclause 30.5.1.1.2, the reference to 20.2.2.3 for “other” has been corrected to 30.2.5.

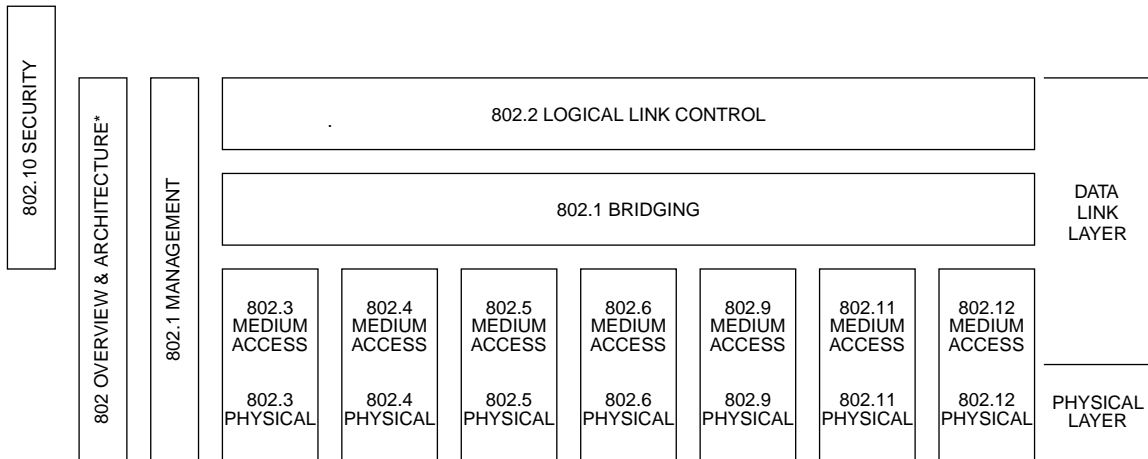
Note that additional corrections are under consideration, and that some reference documents have been updated. These will be included in future maintenance documents.

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Introduction

(This introduction is not part of IEEE Std 802.3u-1995.)

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.)



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 the technologies noted above are as follows:

- IEEE Std 802¹: 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.
- ANSI/IEEE Std 802.1B [ISO/IEC 15802-2]: 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.
- ANSI/IEEE Std 802.1D [ISO/IEC 10038]: MAC Bridging. Specifies an architecture and protocol for the interconnection of IEEE 802 LANs below the MAC service boundary.
- ANSI/IEEE Std 802.1E [ISO/IEC 15802-4]: 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.

¹The 802 Architecture and Overview standard, 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.

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