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American National Standard

IEEE Std 1802.3-1991

Conformance Test Methodology for
IEEE Standards for Local and Metropolitan Area Networks:

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

Currently Contains
**Attachment Unit Interface (AUI) Cable
(Section 4)**

Sponsor

**Technical Committee on Computer Communications
of the
IEEE Computer Society**

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Abstract: Methods for conformance testing to satisfy requirements arising from the ISO/IEC 8802-3 [ANSI/IEEE Std 802.3] standard are defined. The conformance test suite is intended to detect incorrect implementations of the ISO/IEC 8802-3 [ANSI/IEEE Std 802.3] standard. It is comprised of two categories of test groups. The first category relates to basic interconnection testing and the second to capability and behavior testing. The test setups, adapters, and instruments used are described.

Keywords: AUI, compliance, conformance testing, MAC, MAU, PICS, PIXIT, PLS

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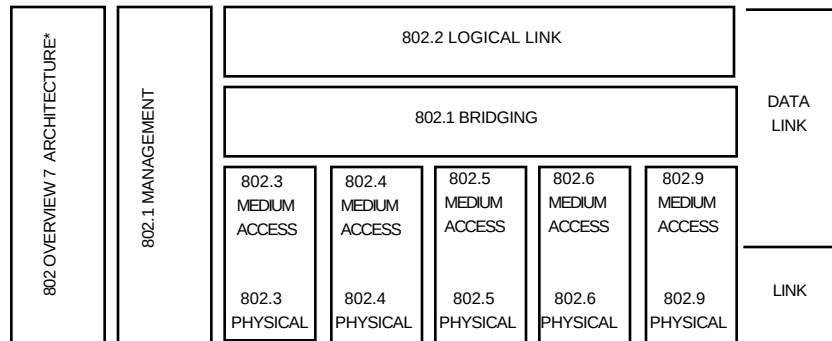
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Foreword

(This Foreword is not a part of IEEE Std 1802.3-1991.)

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 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[†] : 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 802.1D: MAC Bridging. Specifies an architecture and protocol for the interconnection of IEEE 802 LANs below the MAC service boundary.

[†] 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.

- 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
- 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

In addition to the family of standards are technical advisory groups as follows:

- IEEE Std 802.7: Broadband Technical Advisory and Physical Layer Topics and Recommended Practices
- P802.8: Fiber Optic Technical Advisory and Physical Layer Topics

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

Conformance Test Methodology

A new standards series 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.

This standard, IEEE 1802.3-1991, was balloted and approved as 802.3g, before the establishment of the new series. Its number has been changed to reflect this. While a number of conformance test methodology documents are under preparation, the AUI cable conformance test document was the first to be completed. All the 802.3 conformance tests will ultimately become part of one volume. Additional conformance tests will be published as supplements to 1802.3 and folded into the base document (IEEE 1802.3) at the appropriate time.

This standard contains state-of-the-art material. The area covered by this standard is undergoing evolution. Revisions are anticipated to this standard within the next few years to clarify existing material, to correct possible errors, and to incorporate new related material. Information on the current revision status of this standard may be obtained by contacting

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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**

***Currently contains*
Attachment Unit Interface (AUI) Cable
(Section 4)**

1. Introduction

1.1. Purpose. This document defines abstract methods for the conformance testing of 802.3 implementations in order to satisfy conformance requirements arising from the ISO/IEC 8802-3:1990 [ANSI/IEEE Std 802.3-1988 Second Edition] specification [3].¹ Such methods will form the basis for any subsequent development of executable test cases.

1.2 Scope. The conformance test suite is intended to detect incorrect implementations of the ISO/IEC 8802-3 [ANSI/IEEE Std 802.3] [3] standard. The test suite should demonstrate conformance to the ISO/IEC 8802-3 [ANSI/IEEE Std 802.3] standard. However, the user should be made aware of Section 1.3, paragraph 2, of the *IEEE Standards Manual*, December 1990 edition (Conformance of Products or Systems to IEEE Standards):

“IEEE Standards may contain testing procedures useful in determining whether products or systems are in compliance with the standards. Compliance in itself does not necessarily imply quality or guarantee proper use. Where IEEE Standards are used as the basis of examination and/or testing of products or systems by laboratories or other agencies in the process of determining their suitability for their intended use and safe operation, the IEEE assumes no responsibility for the use or interpretation of its standards or the adequacy of the testing or certification.”

The test setups and procedure described in this document are designed to provide the implementor with a methodology for obtaining repeatable results by which conformance can be judged. However, these methodologies are by no means unique. This document does not preclude the use of alternative methodologies provided that an equivalence between the prescribed methodology and the alternative methodology can be demonstrated.

¹The numbers in brackets correspond to those of the references in 1.8.