

## DRAFT INTERNATIONAL STANDARD ISO/IEC DIS 8802-3 ANSI/IEEE Std 802.3

Attributed to ISO/IEC JTC 1 by the Central Secretariat (see page iii)

Voting begins on 2003-06-19

Voting terminates on 2003-11-19

INTERNATIONAL ORGANIZATION FOR STANDARDIZATION • МЕЖДУНАРОДНАЯ ОРГАНИЗАЦИЯ ПО СТАНДАРТИЗАЦИИ • ORGANISATION INTERNATIONALE DE NORMALISATION INTERNATIONAL ELECTROTECHNICAL COMMISSION • МЕЖДУНАРОДНАЯ ЭЛЕКТРОТЕХНИЧЕСКАЯ КОММИСИЯ • COMMISSION ÉLECTROTECHNIQUE INTERNATIONALE

## **FAST-TRACK PROCEDURE**

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

Part 3:

## Carrier sense multiple access with collision detection (CSMA/CD) access method and physical layer specifications

[Revision of sixth edition (ISO/IEC 8802-3:2000)]

PRF

Technologies de l'information Télécommunications et échange d'information entre systèmes — Réseaux locaux et métropolitains — Prescriptions spécifiques \_iteh.ai)

Partie 3: Accès multiple par surveillance du signal et détection de collision (CSMA/CD) et spécifications pour la couche physique **ISO/IEC DIS 8802-3** 

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ICS 35.110

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## NOTE FROM ITTF

This draft International Standard is submitted for JTC 1 national body vote under the Fast-Track Procedure.

In accordance with Resolution 30 of the JTC 1 Berlin Plenary 1993, the proposer of this document recommends assignment of ISO/IEC 8802-3 to JTC 1/SC 6.

#### "FAST-TRACK" PROCEDURE

**1** Any P-member and any Category A liaison organization of ISO/IEC JTC 1 may propose that an existing standard from any source be submitted directly for vote as a DIS. The criteria for proposing an existing standard for the fast-track procedure are a matter for each proposer to decide.

**2** The proposal shall be received by the ITTF which will take the following actions.

**2.1** To settle the copyright and/or trade mark situation with the proposer, so that the proposed text can be freely copied and distributed within JTC 1 without restriction.

**2.2** To assess in consultation with the JTC 1 secretariat which SC is competent for the subject covered by the proposed standard and to ascertain that there is no evident contradiction with other International Standards.

**2.3** To distribute the text of the proposed standard as a DIS. In case of particularly bulky documents the ITTF may demand the necessary number of copies from the proposer.

**3** The period for combined DIS voting shall be six months. In order to be accepted the DIS must be supported by 75 % of the votes cast (abstention is not counted as a vote) and by two-thirds of the P-members voting of JTC 1.

**4** At the end of the voting period, the comments received, whether editorial only or technical, will be dealt with by a working group appointed by the secretariat of the relevant SC.424e-8593-

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**5** If, after the deliberations of this WG, the requirements of 3 above are met, the amended text shall be sent to the ITTF by the secretariat of the relevant SC for publication as an International Standard.

If it is impossible to agree to a text meeting the above requirements, the proposal has failed and the procedure is terminated.

In either case the WG shall prepare a full report which will be circulated by the ITTF.

6 If the proposed standard is accepted and published, its maintenance will be handled by JTC 1.

## **802.3**<sup>™</sup>

IEEE Standard for Information technology—

Telecommunications and information exchange between systems—

Local and metropolitan area networks-

Specific requirements

# Part 3: Carrier sense multiple access with collision detection (CSMA/CD) access method and physical layer specifications

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## Part 3: Carrier sense multiple access with collision detection (CSMA/CD) access method and physical layer specifications

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Abstract: The media access control characteristics for the Carrier Sense Multiple Access with Collision Detection (CSMA/CD) access method for shared medium local area networks are described. The control characteristics for full duplex dedicated channel use are also described. Specifications are provided for MAU types 1BASE5 at 1 Mb/s; Attachment Unit Interface (AUI) and MAU types 10BASE5, 10BASE2, FOIRL (fiber optic inter-repeater link), 10BROAD36, 10BASE-T, 10BASE-FL, 10BASE-FB, and 10BASE-FP at 10 Mb/s; Media Independent Interface (MII) and PHY types 100BASE-T4, 100BASE-TX, 100BASE-FX, and 100BASE-T2 at 100 Mb/s; and the Gigabit MII (GMII) and 1000BASE-X PHY types, 1000BASE-SX, 1000BASE-LX, and 1000BASE-CX, which operate at 1000 Mb/s (Gigabit Ethernet) as well as PHY type 1000BASE-T. Repeater specifications are provided at each speed. Full duplex specifications are provided at the Physical Layer for 10BASE-T, 10BASE-FL, 100BASE-TX, 100BASE-T2, and Gigabit Ethernet. System considerations for multisegment networks at each speed and management information base (MIB) specifications and additions to support Virtual Bridged Local Area Networks (VLANs) as specified in IEEE P802.1Q are also provided. Also specified is an optional Link Aggregation sublayer which multiple physical links to be aggregated together to form a single logical link.

**Keywords:** Aggregated Link; Aggregator; Auto Negotiation; Category 5; copper; data processing; Ethernet; gigabit; information interchange, Link Aggregation; local area networks, management; MASTER-SLAVE; medium dependent interface; mode of data transmission; models; network interconnection; physical coding sublayer; Physical Layer; physical medium attachment; repeater; type field; VLAN TAG

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<sup>&</sup>lt;sup>1</sup>Interpretations provided by 802.3 since November 1996 are available at http://www.ieee802.org/3/interp/index.html

## Introduction to IEEE Std 802.3-2002

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.<sup>1</sup>)



\* Formerly IEEE Std 802.1A

## Teh STANDARD PREVIEW

This family of standards deals with the Physical and Data Link layers as defined by the International Organization for Standardization (ISO) Open Systems Interconnection (OSI) Basic Reference Model (ISO/IEC 7498-1: 1994). The access standards define seven types of medium access technologies and associated physical media, each appropriate for particular applications or system objectives. Other types are under investigation

under investigation. https://standards.iteh.ai/catalog/standards/sist/b15d2a71-d3e8-424e-8593-4e75715d8289/iso\_iec\_dis\_8802-3

4e75715d8289/iso-iec-dis-8802-The standards defining the technologies noted above are as follows:

- IEEE Std 802 *Overview and Architecture*. This standard provides an overview to the family of IEEE 802 Standards.
- IEEE Std 802.1B<sup>™</sup>
  *LAN/MAN Management*. Defines an OSI management-compatible architecture, and services and protocol elements for use in a LAN/MAN [ISO/IEC 15802-2]
   *LAN/MAN Management*.
- IEEE Std 802.1D<sup>™</sup> *Media Access Control (MAC) Bridges*. Specifies an architecture and protocol for the interconnection of IEEE 802 LANs below the MAC service boundary.
- IEEE Std 802.1E<sup>™</sup> 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.
- IEEE Std 802.1F<sup>™</sup> Common Definitions and Procedures for IEEE 802 Management Information
- IEEE Std 802.1G<sup>™</sup> Remote Media Access Control (MAC) Bridging. Specifies extensions for the [ISO/IEC 15802-5] Remote Media Access Control (MAC) Bridging. Specifies extensions for the interconnection, using non-LAN communication technologies, of geographically separated IEEE 802 LANs below the level of the logical link control protocol.
- IEEE Std 802.1H<sup>™</sup> Media Access Control (MAC) Bridging of Ethernet V2.0 in Local Area [ISO/IEC TR 11802-5] Networks.

<sup>&</sup>lt;sup>1</sup>The IEEE standards referred to in the above figure and list are trademarks of the Institute of Electrical and Electronics Engineers, Inc.

- IEEE Std 802.2 Logical Link Control. [ISO/IEC 8802-2]
- IEEE Std 802.3 CSMA/CD Access Method and Physical Layer Specifications.
- IEEE Std 802.4 Token Passing Bus Access Method and Physical Layer Specifications. [ISO/IEC 8802-4]
- IEEE Std 802.5 Token Ring Access Method and Physical Layer Specifications. [ISO/IEC 8802-5]
- IEEE Std 802.6 Distributed Queue Dual Bus Access Method and Physical Layer
  [ISO/IEC 8802-6] Specifications.
- IEEE Std 802.10 Interoperable LAN/MAN Security.
- IEEE Std 802.11 Wireless LAN Medium Access Control (MAC) and Physical Layer [ISO/IEC DIS 8802-11] Specifications.
- IEEE Std 802.12 Demand Priority Access Method, Physical Layer and Repeater [ISO/IEC 8802-12] Specifications.
- IEEE Std 802.15 Wireless Medium Access Control (MAC) and Physical Layer (PHY) Specifications for: Wireless Personal Area Networks.
- IEEE Std 802.16

## iTeh STANDARD PREVIEW

Standard Air Interface for Fixed Broadband Wireless Access Systems.

In addition to the family of standards, the following is a recommended practice for a common Physical Layer technology: (standards.iteh.ai)

• IEEE Std 802.7<sup>™</sup> *IEEE Recommended Practice for Broadband Local Area Networks*. https://standards.iteh.ai/catalog/standards/sist/b15d2a71-d3e8-424e-8593-

4e75715d8289/iso-iec-dis-8802-3

## Conformance test methodology

An additional standard, IEEE Std 1802.3™ provides conformance test information for 10BASE-T.

## IEEE Std 802.3-2002

IEEE Std 802.3-2002 has been divided into three sectionss. The division is as follows:

Section One — Includes Clause 1 through Clause 20 and Annexes A through H. Section Two—Includes Clause 21 through Clause 33 and Annexes 22A through 32A. Section Three—Includes Clause 34 through Clause 43 and Annexes 36A through 43C.

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. Details on the contents of this standard are provided on the following pages.

## **Participants**

The following members of the balloting committee voted on this revision of the standard. Balloters may have voted for approval, disapproval, or abstention.

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The final conditions for approval of this standard were met on 14 January 2002. This standard was conditionally approved by the IEEE-SA Standards Board on 7 December 2001, with the following membership:

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## Past participants

#### Working group members

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