INTERNATIONAL STANDARD

ISO/IEC/IEEE 8802-3

Third edition
2021-02

Telecommunications and exchange between information technology systems — Requirements for local and metropolitan area networks —

Part 3:
Standard for Ethernet

Télécommunications et échange entre systèmes informatiques —
Exigences pour les réseaux locaux et métropolitains —

Partie 3: Norme pour Ethernet

© IEEE 2018

iTeh Standards
(https://standards.iteh.ai)
Document Preview

COPYRIGHT PROTECTED DOCUMENT

Foreword

ISO (the International Organization for Standardization) and IEC (the International Electrotechnical Commission) form the specialized system for worldwide standardization. National bodies that are members of ISO or IEC participate in the development of International Standards through technical committees established by the respective organization to deal with particular fields of technical activity. ISO and IEC technical committees collaborate in fields of mutual interest. Other international organizations, governmental and non-governmental, in liaison with ISO and IEC, also take part in the work.

The procedures used to develop this document and those intended for its further maintenance are described in the ISO/IEC Directives, Part 1. In particular, the different approval criteria needed for the different types of ISO/IEC documents should be noted (see www.iso.org/directives or www.iec.ch/members_experts/refdocs).

IEEE Standards documents are developed within the IEEE Societies and the Standards Coordinating Committees of the IEEE Standards Association (IEEE-SA) Standards Board. The IEEE develops its standards through a consensus development process, approved by the American National Standards Institute, which brings together volunteers representing varied viewpoints and interests to achieve the final product. Volunteers are not necessarily members of the Institute and serve without compensation. While the IEEE administers the process and establishes rules to promote fairness in the consensus development process, the IEEE does not independently evaluate, test, or verify the accuracy of any of the information contained in its standards.

Attention is drawn to the possibility that some of the elements of this document may be the subject of patent rights. ISO and IEC shall not be held responsible for identifying any or all such patent rights. Details of any patent rights identified during the development of the document will be in the Introduction and/or on the ISO list of patent declarations received (see www.iso.org/patents) or the IEC list of patent declarations received (see http://patents.iec.ch).

Any trade name used in this document is information given for the convenience of users and does not constitute an endorsement.

For an explanation of the voluntary nature of standards, the meaning of ISO specific terms and expressions related to conformity assessment, as well as information about ISO's adherence to the World Trade Organization (WTO) principles in the Technical Barriers to Trade (TBT) see www.iso.org/iso/foreword.html. In the IEC, see www.iec.ch/understanding-standards.

ISO/IEC/IEEE 8802-3 was prepared by the LAN/MAN of the IEEE Computer Society (as IEEE Std 8802-3: 2018) and drafted in accordance with its editorial rules. It was adopted, under the "fast-track procedure" defined in the Partner Standards Development Organization cooperation agreement between ISO and IEEE, by Joint Technical Committee ISO/IEC JTC 1, *Information technology*, Subcommittee SC 6, *Telecommunications and information exchange between systems*.

This third edition cancels and replaces the second edition (ISO/IEC/IEEE 8802-3:2017), which has been technically revised. It also incorporates the Amendments ISO/IEC/IEEE 8802-3:2017/Amd 1:2017, ISO/IEC/IEEE 8802-3:2017/Amd 2:2017, ISO/IEC/IEEE 8802-3:2017/Amd 3:2017, ISO/IEC/IEEE 8802-3:2017/Amd 4:2017, ISO/IEC/IEEE 8802-3:2017/Amd 5:2017, ISO/IEC/IEEE 8802-3:2017/Amd 6:2018, ISO/IEC/IEEE 8802-3:2017/Amd 7:2017, ISO/IEC/IEEE 8802-3:2017/Amd 8:2018, ISO/IEC/IEEE 8802-3:2017/Amd 9:2018, ISO/IEC/IEEE 8802-3:2017/Amd 9:2018, ISO/IEC/IEEE 8802-3:2017/Amd 10:2019, ISO/IEC/IEEE 8802-3:2017/Amd 11:2019 and the Technical Corrigendum ISO/IEC/IEEE 8802-3:2017/Cor 1:2018.

A list of all parts in the ISO/IEC/IEEE 8802 series can be found on the ISO and IEC websites.

Any feedback or questions on this document should be directed to the user's national standards body. A complete listing of these bodies can be found at www.iso.org/members.html and www.iec.ch/national-committees.

iTeh Standards
(https://standards.iteh.ai)
Document Preview

Abstract: Ethernet local area network operation is specified for selected speeds of operation from 1 Mb/s to 400 Gb/s using a common media access control (MAC) specification and management information base (MIB). The Carrier Sense Multiple Access with Collision Detection (CSMA/CD) MAC protocol specifies shared medium (half duplex) operation, as well as full duplex operation. Speed specific Media Independent Interfaces (MIIs) allow use of selected Physical Layer devices (PHY) for operation over coaxial, twisted pair or fiber optic cables, or electrical backplanes. System considerations for multisegment shared access networks describe the use of Repeaters that are defined for operational speeds up to 1000 Mb/s. Local Area Network (LAN) operation is supported at all speeds. Other specified capabilities include: various PHY types for access networks, PHYs suitable for metropolitan area network applications, and the provision of power over selected twisted pair PHY types.

iTeh Standards
(https://standards.iteh.ai)
Document Preview

ISO/IEC/IEEE 8802-3:2021
https://standards.iteh.ai/catalog/standards/iso/5730621b-17bb-4ae7-aa0b-2ccf3a34f70c/iso-iec-ieee-8802-3-2021

Important Notices and Disclaimers Concerning IEEE Standards Documents

IEEE documents are made available for use subject to important notices and legal disclaimers. These notices and disclaimers, or a reference to this page, appear in all standards and may be found under the heading "Important Notices and Disclaimers Concerning IEEE Standards Documents." They can also be obtained on request from IEEE or viewed at http://standards.ieee.org/IPR/disclaimers.html.

Notice and Disclaimer of Liability Concerning the Use of IEEE Standards Documents

IEEE Standards documents (standards, recommended practices, and guides), both full-use and trial-use, are developed within IEEE Societies and the Standards Coordinating Committees of the IEEE Standards Association ("IEEE-SA") Standards Board. IEEE ("the Institute") develops its standards through a consensus development process, approved by the American National Standards Institute ("ANSI"), which brings together volunteers representing varied viewpoints and interests to achieve the final product. IEEE Standards are documents developed through scientific, academic, and industry-based technical working groups. Volunteers in IEEE working groups are not necessarily members of the Institute and participate without compensation from IEEE. While IEEE administers the process and establishes rules to promote fairness in the consensus development process, IEEE does not independently evaluate, test, or verify the accuracy of any of the information or the soundness of any judgments contained in its standards.

IEEE Standards do not guarantee or ensure safety, security, health, or environmental protection, or ensure against interference with or from other devices or networks. Implementers and users of IEEE Standards documents are responsible for determining and complying with all appropriate safety, security, environmental, health, and interference protection practices and all applicable laws and regulations.

IEEE does not warrant or represent the accuracy or content of the material contained in its standards, and expressly disclaims all warranties (express, implied and statutory) not included in this or any other document relating to the standard, including, but not limited to, the warranties of: merchantability; fitness for a particular purpose; non-infringement; and quality, accuracy, effectiveness, currency, or completeness of material. In addition, IEEE disclaims any and all conditions relating to: results; and workmanlike effort. IEEE standards documents are supplied "AS IS" and "WITH ALL FAULTS."

Use of an IEEE standard is wholly voluntary. The existence of an IEEE standard does not imply that there are no other ways to produce, test, measure, purchase, market, or provide other goods and services related to the scope of the IEEE standard. Furthermore, the viewpoint expressed at the time a standard is approved and issued is subject to change brought about through developments in the state of the art and comments received from users of the standard.

In publishing and making its standards available, IEEE is not suggesting or rendering professional or other services for, or on behalf of, any person or entity nor is IEEE undertaking to perform any duty owed by any other person or entity to another. Any person utilizing any IEEE Standards document, should rely upon his or her own independent judgment in the exercise of reasonable care in any given circumstances or, as appropriate, seek the advice of a competent professional in determining the appropriateness of a given IEEE standard.

IN NO EVENT SHALL IEEE BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO: PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE PUBLICATION, USE OF, OR RELIANCE UPON ANY STANDARD, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE AND REGARDLESS OF WHETHER SUCH DAMAGE WAS FORESEEABLE.

Translations

The IEEE consensus development process involves the review of documents in English only. In the event that an IEEE standard is translated, only the English version published by IEEE should be considered the approved IEEE standard.

Official statements

A statement, written or oral, that is not processed in accordance with the IEEE-SA Standards Board Operations Manual shall not be considered or inferred to be the official position of IEEE or any of its committees and shall not be considered to be, or be relied upon as, a formal position of IEEE. At lectures, symposia, seminars, or educational courses, an individual presenting information on IEEE standards shall make it clear that his or her views should be considered the personal views of that individual rather than the formal position of IEEE.

Comments on standards

Comments for revision of IEEE Standards documents are welcome from any interested party, regardless of membership affiliation with IEEE. However, IEEE does not provide consulting information or advice pertaining to IEEE Standards documents. Suggestions for changes in documents should be in the form of a proposed change of text, together with appropriate supporting comments. Since IEEE standards represent a consensus of concerned interests, it is important that any responses to comments and questions also receive the concurrence of a balance of interests. For this reason, IEEE and the members of its societies and Standards Coordinating Committees are not able to provide an instant response to comments or questions except in those cases where the matter has previously been addressed. For the same reason, IEEE does not respond to interpretation requests. Any person who would like to participate in revisions to an IEEE standard is welcome to join the relevant IEEE working group.

Comments on standards should be submitted to the following address:

Secretary, IEEE-SA Standards Board
445 Hoes Lane
Piscataway, NJ 08854 USA

Laws and regulations

Users of IEEE Standards documents should consult all applicable laws and regulations. Compliance with the provisions of any IEEE Standards document does not imply compliance to any applicable regulatory requirements. Implementers of the standard are responsible for observing or referring to the applicable regulatory requirements. IEEE does not, by the publication of its standards, intend to urge action that is not in compliance with applicable laws, and these documents may not be construed as doing so.

Copyrights

IEEE draft and approved standards are copyrighted by IEEE under U.S. and international copyright laws. They are made available by IEEE and are adopted for a wide variety of both public and private uses. These include both use, by reference, in laws and regulations, and use in private self-regulation, standardization, and the promotion of engineering practices and methods. By making these documents available for use and adoption by public authorities and private users, IEEE does not waive any rights in copyright to the documents.

Photocopies

Subject to payment of the appropriate fee, IEEE will grant users a limited, non-exclusive license to photocopy portions of any individual standard for company or organizational internal use or individual, non-commercial use only. To arrange for payment of licensing fees, please contact Copyright Clearance Center, Customer Service, 222 Rosewood Drive, Danvers, MA 01923 USA; +1 978 750 8400. Permission to photocopy portions of any individual standard for educational classroom use can also be obtained through the Copyright Clearance Center.

Updating of IEEE Standards documents

Users of IEEE Standards documents should be aware that these documents may be superseded at any time by the issuance of new editions or may be amended from time to time through the issuance of amendments, corrigenda, or errata. A current IEEE document at any point in time consists of the current edition of the document together with any amendments, corrigenda, or errata then in effect.

Every IEEE standard is subjected to review at least every ten years. When a document is more than ten years old and has not undergone a revision process, it is reasonable to conclude that its contents, although still of some value, do not wholly reflect the present state of the art. Users are cautioned to check to determine that they have the latest edition of any IEEE standard.

In order to determine whether a given document is the current edition and whether it has been amended through the issuance of amendments, corrigenda, or errata, visit the IEEE-SA Website at http://ieeexplore.ieee.org/xpl/standards.jsp or contact IEEE at the address listed previously. For more information about the IEEE-SA or IEEE's standards development process, visit the IEEE-SA Website at http://standards.ieee.org.

Errata

Errata, if any, for all IEEE standards can be accessed on the IEEE-SA Website at the following URL: http://standards.ieee.org/findstds/errata/index.html. Users are encouraged to check this URL for errata periodically.

Patents

Attention is called to the possibility that implementation of this standard may require use of subject matter covered by patent rights. By publication of this standard, no position is taken by the IEEE with respect to the existence or validity of any patent rights in connection therewith. If a patent holder or patent applicant has filed a statement of assurance via an Accepted Letter of Assurance, then the statement is listed on the IEEE-SA Website at http://standards.ieee.org/about/sasb/patcom/patents.html. Letters of Assurance may indicate whether the Submitter is willing or unwilling to grant licenses under patent rights without compensation or under reasonable rates, with reasonable terms and conditions that are demonstrably free of any unfair discrimination to applicants desiring to obtain such licenses.

Essential Patent Claims may exist for which a Letter of Assurance has not been received. The IEEE is not responsible for identifying Essential Patent Claims for which a license may be required, for conducting inquiries into the legal validity or scope of Patents Claims, or determining whether any licensing terms or conditions provided in connection with submission of a Letter of Assurance, if any, or in any licensing agreements are reasonable or non-discriminatory. Users of this standard are expressly advised that determination of the validity of any patent rights, and the risk of infringement of such rights, is entirely their own responsibility. Further information may be obtained from the IEEE Standards Association.

Participants

The following individuals were officers and members of the IEEE 802.3 working group at the beginning of the IEEE 802.3cj working group ballot.

David J. Law, *IEEE 802.3 Working Group Chair*
Adam Healey, *IEEE 802.3 Working Group Vice-Chair*
Pete Anslow, *IEEE 802.3 Working Group Secretary*
Steven B. Carlson, *IEEE 802.3 Working Group Executive Secretary*
Valerie Maguire, *IEEE 802.3 Working Group Treasurer*

Adam Healey, *IEEE P802.3 (IEEE 802.3cj) Task Force Chair* and *Editor-in-Chief*
Pete Anslow, *IEEE P802.3 (IEEE 802.3cj) Task Force Section Editor*
Marek Hajduczenia, *IEEE P802.3 (IEEE 802.3cj) Task Force Section Editor*

Historical participants

The following individuals participated in the IEEE 802.3 working group during various stages of the standard's development. Since the initial publication, many IEEE standards have added functionality or provided updates to material included in this standard. Included is a historical list of participants who have dedicated their valuable time, energy, and knowledge to the creation of this material:

IEEE Std 802.3 document	Date approved by IEEE	Working Group officers, Task Force Chair, and Task Force Editors as listed in the document
IEEE Std 802.3-1985, Original 10 Mb/s standard, MAC, PLS, AUI, 10BASE5	23 June 1983	**Donald C. Loughry,** *Working Group Chair*
IEEE Std 802.3b-1985 (Clause 11), 10 Mb/s Broadband MAU, 10BROAD36	19 September 1985	**Donald C. Loughry,** *Working Group Chair* **Menachem Abraham,** *Task Force Chair*
IEEE Std 802.3a-1988 (Clause 10), 10 Mb/s MAU 10BASE2	15 November 1985	**Donald C. Loughry,** *Working Group Chair* **Alan Flatman,** *Task Force Chair*
IEEE Std 802.3c-1985 (9.1–9.8), 10 Mb/s Baseband Repeater	12 December 1985	**Donald C. Loughry,** *Working Group Chair* **Geoffrey O. Thompson,** *Task Force Chair*
IEEE Std 802.3e-1987 (Clause 12), 1 Mb/s MAU and Hub 1BASE5	11 June 1987	**Donald C. Loughry,** *Working Group Chair* **Robert Galin,** *Task Force Chair*
IEEE Std 802.3d-1987 (9.9), 10 Mb/s Fiber MAU, FOIRL	10 December 1987	**Donald C. Loughry,** *Working Group Chair* **Steven Moustakas,** *Task Force Chair*
IEEE Std 802.3h-1990 (Clause 5), 10 Mb/s Layer Management, DTEs	28 September 1990	**Donald C. Loughry,** *Working Group Chair* **Andy J. Luque,** *Task Force Chair*
IEEE Std 802.3i-1990 (Clauses 13 and 14), 10 Mb/s UTP MAU, 10 BASE-T	28 September 1990	**Donald C. Loughry,** *Working Group Chair* **Patricia Thaler,** *Task Force Chair (initial)* **Richard Anderson,** *Task Force Chair (final)*
IEEE Std 802.3k-1993 (Clause 19), 10 Mb/s Layer Management, Repeaters	17 September 1992	**Patricia Thaler,** *Working Group Chair* **Joseph S. Skorupa,** *Task Force Chair* **Geoffrey O. Thompson,** *Vice Chair* and *Editor*
IEEE Std 802.3l-1992 (14.10), 10 Mb/s PICS Proforma 10BASE-T MAU	17 September 1992	**Patricia Thaler,** *Working Group Chair* **Mike Armstrong,** *Task Force Chair* and *Editor* **Paul Nikolich,** *Vice Chair* **William Randle,** *Editorial Coordinator*

IEEE Std 802.3 document	Date approved by IEEE	Working Group officers, Task Force Chair, and Task Force Editors as listed in the document
IEEE Std 802.3p-1993 (Clause 20), Management, 10 Mb/s Integrated MAUs	17 June 1993	**Patricia Thaler,** *Working Group Chair* **Joseph S. Skorupa,** *Task Force Chair* **Geoffrey O. Thompson,** *Vice Chair* and *Editor*
IEEE Std 802.3q-1993 (Clause 5), 10 Mb/s Layer Management, GDMO Format	17 June 1993)	**Patricia Thaler,** *Working Group Chair* **Joseph S. Skorupa,** *Task Force Chair* **Geoffrey O. Thompson,** *Vice Chair* and *Editor*
IEEE Std 802.3j-1993 (Clauses 15–18), 10 Mb/s Fiber MAUs 10BASE-FP, 10BASE-FB, and 10BASE-FL	15 September 1993	**Patricia Thaler,** *Working Group Chair* **Keith Amundsen,** *Task Force Chair (initial)* **Frederick Scholl,** *Task Force Chair (final)* **Michael E. Lee,** *Technical Editor*
IEEE Std 802.3t-1995, 120 Ω informative annex to 10BASE-T	14 June 1995	**Geoffrey O. Thompson,** *Working Group Chair* **Jacques Christ,** *Task Force Chair*
IEEE Std 802.3u-1995 (Clauses 21–30), Type 100BASE-T MAC parameters, Physical Layer, MAUs, and Repeater for 100 Mb/s Operation	14 June 1995	**Geoffrey O. Thompson,** *Working Group Chair* **Peter Tarrant,** *Task Force Chair (Phase 1)* **Howard Frazier,** *Task Force Chair (Phase 2)* **Paul Sherer,** *Task Force Editor-in-Chief (Phase 1)* **Howard Johnson,** *Task Force Editor-in-Chief (Phase 2)*
IEEE Std 802.3m-1995, Maintenance 2	21 September 1995	**Patricia Thaler,** *Working Group Chair* **Gary Robinson,** *Maintenance Chair*
IEEE Std 802.3n-1995, Maintenance 3	21 September 1995	**Patricia Thaler,** *Working Group Chair* **Gary Robinson,** *Maintenance Chair*
IEEE Std 802.3s-1995, Maintenance 4	21 September 1995	**Geoffrey O. Thompson,** *Working Group Chair* **Gary Robinson,** *Maintenance Chair*
IEEE Std 802.3v-1995, 150 Ω informative annex to 10BASE-T	12 December 1995	**Geoffrey O. Thompson,** *Working Group Chair* **Larry Nicholson,** *Task Force Chair*
IEEE Std 802.3r-1996 (8.8), Type 10BASE5 Medium Attachment Unit PICS proforma	29 July 1996	**Patricia Thaler,** *Working Group Chair* **Imre Juhász,** *Task Force Chair* **William Randle,** *Task Force Editor*
IEEE Std 802.3x-1997 and IEEE Std 802.3y-1997 (Revisions to IEEE Std 802.3, Clauses 31 and 32), Full-Duplex Operation and Type 100BASE-T2	20 March 1997	**Geoffrey O. Thompson,** *Working Group Chair* **David J. Law,** *Working Group Vice Chair* **Rich Seifert,** *Task Force Chair* and *Editor (802.3x)* **J. Scott Carter,** *Task Force Chair (802.3y)* **Colin Mick,** *Task Force Editor (802.3y)*
IEEE Std 802.3z-1998 (Clauses 34–39, 41–42), Type 1000BASE-X MAC Parameters, Physical Layer, Repeater, and Management Parameters for 1000 Mb/s Operation	25 June 1998	**Geoffrey O. Thompson,** *Working Group Chair* **David J. Law,** *Working Group Vice Chair* **Howard M. Frazier, Jr.,** *Task Force Chair* **Howard W. Johnson,** *Task Force Editor*
IEEE Std 802.3aa-1998, Maintenance 5	25 June 1998	**Geoffrey O. Thompson,** *Working Group Chair* **Colin Mick,** *Task Force Editor*
IEEE Std 802.3ac-1998, Frame Extensions for Virtual Bridged Local Area Network (VLAN) Tagging on IEEE 802.3 Networks	16 September 1998	**Geoffrey O. Thompson,** *Working Group Chair* **David J. Law,** *Working Group Vice Chair* **Andy J. Luque,** *Working Group Secretary* **Ian Crayford,** *Task Force Chair* **Rich Seifert,** *Task Force Editor*
IEEE Std 802.3ab-1999 (Clause 40), Physical Layer Parameters and Specifications for 1000 Mb/s Operation Over 4 Pair of Category 5 Balanced Copper Cabling, Type 1000BASE-T	26 June 1999	**Geoffrey O. Thompson,** *Working Group Chair* **David J. Law,** *Working Group Vice Chair* **Robert M. Grow,** *Working Group Secretary* **George Eisler,** *Task Force Chair* **Colin Mick,** *Task Force Editor*

IEEE Std 802.3 document	Date approved by IEEE	Working Group officers, Task Force Chair, and Task Force Editors as listed in the document
IEEE Std 802.3ad-2000 (Clause 43), Aggregation of Multiple Link Segments	30 March 2000	**Geoffrey O. Thompson,** *Working Group Chair* **David J. Law,** *Working Group Vice Chair* **Robert M. Grow,** *Working Group Secretary* **Steven Haddock,** *Task Force Chair* **Tony Jeffree,** *Task Force Co-Editor* **Rich Seifert,** *Task Force Co-Editor*
IEEE Std 802.3-2002 (IEEE 802.3ag, Maintenance 6, Revision of the base), Carrier Sense Multiple Access with Collision Detection (CSMA/CD) access method and Physical Layer specifications	14 January 2002	**Geoffrey O. Thompson,** *Working Group Chair* **David J. Law,** *Working Group Vice Chair* **Robert M. Grow,** *Working Group Secretary*
IEEE Std 802.3ae-2002, (Clauses 44–53) Media Access Control (MAC) Parameters, Physical Layers, and Management Parameters for 10 Gb/s Operation	13 June 2002	**Geoffrey O. Thompson,** *Working Group Chair* **David J. Law,** *Working Group Vice Chair* **Robert M. Grow,** *Working Group Secretary* **R. Jonathan Thatcher,** *Task Force Chair* **Stephen Haddock,** *Task Force Vice Chair* **Bradley J. Booth,** *Task Force Editor*
IEEE Std 802.3af-2003, (Clause 33) Data Terminal Equipment (DTE) Power via Media Dependent Interface (MDI)	12 June 2003	**Geoffrey O. Thompson,** *Working Group Chair (Phase 1)* **Robert M. Grow,** *Working Group Chair (Phase 2)* **David J. Law,** *Working Group Vice Chair* **Robert M. Grow,** *Working Group Secretary (Phase 1)* **Steven B. Carlson,** *Working Group Secretary (Phase 2)* **Steven B. Carlson,** *Task Force Chair* **Michael S. McCormack,** *Task Force Editor (Phase 1)* **John J. Jetzt,** *Task Force Editor (Phase 2)*
IEEE Std 802.3aj-2003, Maintenance 7	11 September 2003	**Robert M. Grow,** *Working Group Chair* **David J. Law,** *Working Group Vice Chair, Task Force Chair* **Steven B. Carlson,** *Working Group Secretary* **Catherine K. N. Berger,** *Task Force Editor*
IEEE Std 802.3ak-2004, Physical Layer and Management Parameters for 10Gb/s Operation, Type 10GBASE-CX4	9 February 2004	**Robert M. Grow,** *Working Group Chair* **David J. Law,** *Working Group Vice Chair* **Steven B. Carlson,** *Working Group Secretary* **Daniel J. Dove,** *Task Force Chair* **Howard A. Baumer,** *Task Force Editor*
IEEE Std 802.3ah-2004, Media Access Control Parameters, Physical Layers, and Management Parameters for Subscriber Access Networks	6 April 2005	**Robert M. Grow,** *Working Group Chair* **David J. Law,** *Working Group Vice Chair* **Steven B. Carlson,** *Working Group Secretary* **Howard Frazier,** *Task Force Chair* **Wael W. Diab,** *Task Force Editor-in-Chief* **Hugh Barrass,** *Task Force Vice-Chair*
IEEE Std 802.3-2005 (IEEE 802.3REVam, Revision of the base), Carrier Sense Multiple Access with Collision Detection (CSMA/CD) access method and Physical Layer specifications	9 June 2005	**Robert M. Grow,** *Working Group Chair* **David J. Law,** *Working Group Vice Chair, Task Force Chair, Task Force Chief Editor* **Wael W. Diab,** *Working Group Secretary* **Steven B. Carlson,** *Working Group Executive Secretary*
IEEE Std 802.3an-2006, Physical Layer and Management Parameter for 10 Gb/s Operation, Type 10GBASE-T	8 June 2006	**Robert M. Grow,** *Working Group Chair* **David J. Law,** *Working Group Vice Chair* **Wael William Diab,** *Working Group Secretary* **Steven B. Carlson,** *Working Group Executive Secretary* **Bradley Booth,** *Task Force Chair* **Sanjay Kasturia,** *Task Force Editor-in-Chief*
IEEE Std 802.3-2005/Cor 1-2006 (IEEE 802.3au), DTE Power via MDI Isolation corrigendum	8 June 2006	**Robert M. Grow,** *Working Group Chair* **David J. Law,** *Working Group Vice Chair, Task Force Chair, and Task Force Editor* **Wael W. Diab**, *Working Group Secretary* **Steven B. Carlson,** *Working Group Executive Secretary*

IEEE Std 802.3 document	Date approved by IEEE	Working Group officers, Task Force Chair, and Task Force Editors as listed in the document
IEEE Std 802.3aq-2006, Physical Layer and Management Parameters for 10 Gb/s Operation, Type 10GBASE-LRM	15 September 2006	**Robert M. Grow,** *Working Group Chair* **David J. Law,** *Working Group Vice Chair* **Wael William Diab,** *Working Group Secretary* **Steven B. Carlson,** *Working Group Executive Secretary* **David G. Cunningham,** *Task Force Chair* **Nick Weiner,** *Task Force Editor*
IEEE Std 802.3as-2006, Frame format extensions	15 September 2006	**Robert M. Grow,** *Working Group Chair* **David J. Law,** *Working Group Vice Chair* **Wael William Diab,** *Working Group Secretary* **Steven B. Carlson,** *Working Group Executive Secretary* **Kevin Q Daines,** *Task Force Chair* **Glenn W. Parsons,** *Task Force Editor*
IEEE Std 802.3ap-2007, Ethernet Operation over Electrical Backplanes	22 March 2007	**Robert M. Grow,** *Working Group Chair* **David J. Law,** *Working Group Vice-Chair* **Wael W. Diab,** *Working Group Secretary* **Steven B. Carlson,** *Working Group Executive Secretary* **Bradley Booth,** *Working Group Treasurer* **Adam Healey,** *Task Force Chair* **Schelto vanDoorn,** *Task Force Editor-in-Chief (Phase 1)* **Ilango S. Ganga,** *Task Force Editor-in-Chief (Phase 2)*
IEEE Std 802.3-2005/Cor 2-2007 (IEEE 802.3aw), 10GBASE-T corrigendum	7 June 2007	**Robert M. Grow,** *Working Group Chair* **David J. Law,** *Working Group Vice Chair, Task Force Chair, and Task Force Editor* **Wael W. Diab,** *Working Group Secretary* **Steven B. Carlson,** *Working Group Executive Secretary* **Bradley Booth,** *Working Group Treasurer*
IEEE Std 802.3-2008 (IEEE 802.3ay), Maintenance #9 (Revision of the base), Carrier Sense Multiple Access with Collision Detection (CSMA/CD) access method and Physical Layer specifications	26 September 2008	**Robert M. Grow,** *Working Group Chair* **David J. Law,** *Working Group Vice Chair, Task Force Chair, and Task Force Editor* **Wael William Diab,** *Working Group Secretary* **Steven B. Carlson,** *Working Group Executive Secretary* **Bradley Booth,** *Working Group Treasurer*
IEEE Std 802.3at-2009 Data Terminal Equipment (DTE) Power via the Media Dependent Interface (MDI) Enhancements	11 September 2009	**David J. Law,** *Working Group Chair* **Wael William Diab,** *Working Group Vice Chair* **Adam Healey,** *Working Group Secretary* **Steven B. Carlson,** *Working Group Executive Secretary* **Bradley Booth,** *Working Group Treasurer* **Mike McCormack,** *Task Force Chair* **D. Matthew Landry,** *Task Force Chief Editor*
IEEE Std 802.3av-2009 Physical Layer Specifications and Management Parameters for 10 Gb/s Passive Optical Networks	11 September 2009	**David J. Law,** *Working Group Chair* **Wael William Diab,** *Working Group Vice Chair* **Adam Healey,** *Working Group Secretary* **Steven B. Carlson,** *Working Group Executive Secretary* **Bradley Booth,** *Working Group Treasurer* **Glen Kramer,** *Task Force Chair* **Duane Remein,** *Task Force Chief Editor*
IEEE Std 802.3bc-2009 Ethernet Organizationally Specific Type, Length, Value (TLVs)	11 September 2009	**David J. Law,** *Working Group Chair* and *Task Force Editor* **Wael W. Diab,** *Working Group Vice Chair* and *Task Force Chair* **Steven B. Carlson,** *Working Group Executive Secretary* **Adam Healey,** *Working Group Secretary* **Bradley Booth,** *Working Group Treasurer*
IEEE Std 802.3-2008/Cor 1-2009 (IEEE 802.3bb) Pause Reaction Delay Corrigendum.	9 December 2009	**David J. Law,** *Working Group Chair* **Wael William Diab,** *Working Group Vice-Chair* **Steven B. Carlson,** *Working Group Executive Secretary* **Adam Healey,** *Working Group Secretary* **Bradley Booth,** *Working Group Treasurer*

IEEE Std 802.3 document	Date approved by IEEE	Working Group officers, Task Force Chair, and Task Force Editors as listed in the document
IEEE Std 802.3ba Media Access Control Parameters, Physical Layers, and Management Parameters for 40 Gb/s and 100 Gb/s Operation	17 June 2010	**David J. Law,** *Working Group Chair* **Wael William Diab,** *Working Group Vice-Chair* **Steven B. Carlson,** *Working Group Executive Secretary* **Adam Healey,** *Working Group Secretary* **Bradley Booth,** *Working Group Treasurer* **John D'Ambrosia,** *Task Force Chair* **Ilango S. Ganga,** *Task Force Editor-in-Chief*
IEEE Std 802.3az-2010 Media Access Control Parameters, Physical Layers, and Management Parameters for Energy-Efficient Ethernet	30 September 2010	**David J. Law,** *Working Group Chair* **Wael William Diab,** *Working Group Vice Chair* **Steven B. Carlson,** *Working Group Executive Secretary* **Adam Healey,** *Working Group Secretary* **Bradley Booth,** *Working Group Treasurer* **Michael Bennett,** *Task Force Chair* **Sanjay Kasturia,** *Task Force Editor-in-Chief*
IEEE Std 802.3bg-2011 Physical Layer and Management Parameters for Serial 40 Gb/s Ethernet Operation Over Single-Mode Fiber	31 March 2011	**David J. Law,** *Working Group Chair* **Wael William Diab,** *Working Group Vice-Chair* **Adam Healey,** *Working Group Secretary* **Steven B. Carlson,** *Working Group Executive Secretary* **Valerie Maguire,** *Working Group Treasurer* **Mark Nowell,** *Task Force Chair* **Pete Anslow,** *Task Force Editor-in-Chief*
IEEE Std 802.3bf-2011 Media Access Control (MAC) Service Interface and Management Parameters to Support Time Synchronization Protocols	16 May 2011	**David J. Law,** *Working Group Chair* **Wael William Diab,** *Working Group Vice-Chair* **Adam Healey,** *Working Group Secretary* **Steven B. Carlson,** *Working Group Executive Secretary* **Valerie Maguire,** *Working Group Treasurer* **Steven B. Carlson,** *Task Force Chair* **Marek Hajduczenia,** *Task Force Editor-in-Chief*
IEEE Std 802.3bd-2011 MAC Control Frame for Priority-based Flow Control	16 June 2011	**Tony Jeffree,** *IEEE 802.1 Working Group Chair* **Paul Congdon,** *IEEE 802.1 Working Group Vice Chair* **David J. Law,** *IEEE 802.3 Working Group Chair* **Wael W. Diab,** *IEEE 802.3 Working Group Vice Chair* **Pat Thaler,** *Data Center Bridging Task Group Chair*
IEEE Std 802.3-2012 (IEEE 802.3ah), Maintenance #10 (Revision of the base), Standard for Ethernet	28 December 2012	**David J. Law,** *Working Group Chair* **Wael William Diab,** *Working Group Vice-Chair, Task Force Chair, and Task Force Editor-in-Chief* **Adam Healey,** *Working Group Secretary* **Steven B. Carlson,** *Working Group Executive Secretary* **Valerie Maguire,** *Working Group Treasurer*
IEEE Std 802.3bk-2013 Physical Layer Specifications and Management Parameters for Extended Ethernet Passive Optical Networks	23 August 2013	**David J. Law,** *Working Group Chair* **Wael William Diab,** *Working Group Vice-Chair* **Adam Healey,** *Working Group Secretary* **Steven B. Carlson,** *Working Group Executive Secretary* **Valerie Maguire,** *Working Group Treasurer* **Marek Hajduczenia,** *Task Force Chair* **Susumu Nishihara,** *Task Force Editor-in-Chief*
IEEE Std 802.3bj-2014 Physical Layer Specifications and Management Parameters for 100 Gb/s Operation Over Backplanes and Copper Cables	12 June 2014	**David J. Law,** *Working Group Chair* **Wael William Diab,** *Working Group Vice-Chair (initial)* **Adam Healey,** *Working Group Secretary, (initial), Task Force Editor-in-Chief (initial), Working Group Vice-Chair (final), and Task Force Chair (final)* **Peter Anslow,** *Working Group Secretary (final)* **Steven B. Carlson,** *Working Group Executive Secretary* **Valerie Maguire,** *Working Group Treasurer* **John D'Ambrosia,** *Task Force Chair (initial)* **Matthew Brown,** *Task Force Editor-in-Chief (final)*
IEEE Std 802.3bm-2015 Physical Layer Specifications and Management Parameters for 40 Gb/s and 100 Gb/s Operation Over Fiber Optic Cables	16 February 2015	**David J. Law,** *Working Group Chair* **Adam Healey,** *Working Group Vice-Chair* **Pete Anslow,** *Working Group Secretary and Task Force Editor-in-Chief* **Steven B. Carlson,** *Working Group Executive Secretary* **Valerie Maguire,** *Working Group Treasurer* **Dan Dove,** *Task Force Chair* **Kapil Shrikhande,** *Task Force Vice-Chair*

IEEE Std 802.3 document	Date approved by IEEE	Working Group officers, Task Force Chair, and Task Force Editors as listed in the document
IEEE Std 802.3-2015 (IEEE 802.3bx), Maintenance #11 (Revision of the base), Standard for Ethernet	3 September 2015	**David J. Law**, *Working Group Chair* **Adam Healey**, *Working Group Vice-Chair, Task Force Chair, and Task Force Editor-in-Chief* **Pete Anslow**, *Working Group Secretary* **Steven B. Carlson**, *Working Group Executive Secretary* **Valerie Maguire**, *Working Group Treasurer*
IEEE Std 802.3bw-2015 Physical Layer Specifications and Management Parameters for 100 Mb/s Operation over a Single Balanced Twisted Pair Cable (100BASE-T1)	26 October 2015	**David J. Law**, *Working Group Chair* **Adam Healey**, *Working Group Vice-Chair* **Pete Anslow**, *Working Group Secretary* **Steven B. Carlson**, *Working Group Executive Secretary* and *Task Force Chair, Phase 2* **Valerie Maguire**, *Working Group Treasurer* **Thomas Hogenmüller**, *Task Force Chair, Phase 1* **Mehmet Tazebay**, *Task Force Vice-Chair* **Curtis Donahue**, *Task Force Editor-in-Chief*
IEEE Std 802.3by-2016 Media Access Control Parameters, Physical Layers, and Management Parameters for 25 Gb/s Operation	30 June 2016	**David J. Law**, *Working Group Chair* **Adam Healey**, *Working Group Vice-Chair* **Pete Anslow**, *Working Group Secretary* **Steven B. Carlson**, *Working Group Executive Secretary* **Valerie Maguire**, *Working Group Treasurer* **Mark Nowell**, *Task Force Chair* **Matthew Brown**, *Task Force Editor-in-Chief*
IEEE Std 802.3bq-2016 Physical Layers and Management Parameters for 25 Gb/s and 40 Gb/s Operation, Types 25GBASE-T and 40GBASE-T	30 June 2016	**David J. Law**, *Working Group Chair* **Adam Healey**, *Working Group Vice-Chair* **Pete Anslow**, *Working Group Secretary* **Steven B. Carlson**, *Working Group Executive Secretary* **Valerie Maguire**, *Working Group Treasurer* **David Chalupsky**, *Task Force Chair* **George Zimmerman**, *Task Force Editor-in-Chief*
IEEE Std 802.3bp-2016 Physical Layer Specifications and Management Parameters for 1 Gb/s Operation over a Single Twisted-Pair Copper Cable	30 June 2016	**David J. Law**, *Working Group Chair* **Adam Healey**, *Working Group Vice-Chair* **Pete Anslow**, *Working Group Secretary* **Steven B. Carlson**, *Working Group Executive Secretary* and *Task Force Chair* **Valerie Maguire**, *Working Group Treasurer* **Marek Hajduczenia**, *Task Force Editor-in-Chief*
IEEE Std 802.3br-2016 Specification and Management Parameters for Interspersing Express Traffic	30 June 2016	**David J. Law**, *Working Group Chair* **Adam Healey**, *Working Group Vice-Chair* **Pete Anslow**, *Working Group Secretary* **Steven B. Carlson**, *Working Group Executive Secretary* **Valerie Maguire**, *Working Group Treasurer* **Ludwig Winkel**, *Task Force Chair* **Patricia Thaler**, *Task Force Editor-in-Chief*
IEEE Std 802.3bn-2016 Physical Layer Specifications and Management Parameters for Ethernet Passive Optical Networks Protocol over Coax	22 September 2016	**David J. Law**, *Working Group Chair* **Adam Healey**, *Working Group Vice-Chair* **Pete Anslow**, *Working Group Secretary* **Steven B. Carlson**, *Working Group Executive Secretary* **Valerie Maguire**, *Working Group Treasurer* **Mark Laubach**, *Task Force Chair* **Duane Remein**, *Task Force Editor-in-Chief*
IEEE Std 802.3bz-2016 Media Access Control Parameters, Physical Layers, and Management Parameters for 2.5 Gb/s and 5 Gb/s Operation, Types 2.5GBASE-T and 5GBASE-T	22 September 2016	**David J. Law**, *Working Group Chair* **Adam Healey**, *Working Group Vice-Chair* **Pete Anslow**, *Working Group Secretary* **Steven B. Carlson**, *Working Group Executive Secretary* **Valerie Maguire**, *Working Group Treasurer* **David Chalupsky**, *Task Force Chair* **George Zimmerman**, *Task Force Editor-in-Chief*
IEEE Std 802.3bu-2016 Physical Layer and Management Parameters for Power over Data Lines (PoDL) of Single Balanced Twisted-Pair Ethernet	7 December 2016	**David J. Law**, *Working Group Chair* **Adam Healey**, *Working Group Vice-Chair* **Pete Anslow**, *Working Group Secretary* **Steven B. Carlson**, *Working Group Executive Secretary* **Valerie Maguire**, *Working Group Treasurer* **Dave Dwelley**, *Task Force Chair, Phase 1* **Dan Dove**, *Task Force Chair, Phase 2* **Andy Gardner**, *Task Force Editor-in-Chief*