

INTERNATIONAL STANDARD ISO/IEC 8802-1AE:2020 TECHNICAL CORRIGENDUM 1

Published 2021-07-22



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

МЕЖДУНАРОДНАЯ ЭЛЕКТРОТЕХНИЧЕСКАЯ КОМИССИЯ • COMMISSION ÉLECTROTECHNIQUE INTERNATIONALE

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

Part 1AE:

Media access control (MAC) security

TECHNICAL CORRIGENDUM 1: Tag control information figure (standards.iteh.ai)

Technologies de l'information — Télécommunications et échange entre systèmes informatiques — Exigences pour les réseaux locaux et métropolitains teh.ai/catalog/standards/sist/329c3aa8-94da-4088-b458-

Partie 1AE: Sécurité du contrôle d'accès aux supports (MAC) 20-cor-1-2021

RECTIFICATIF TECHNIQUE 1

Technical Corrigendum 1 to ISO/IEC/IEEE 8802-1AE:2020/Cor 1 was prepared by Joint Technical Committee ISO/IEC JTC 1, Information technology, Subcommittee SC 6, Telecommunications and information exchange between systems, in collaboration with IEEE. The identical text is published as IEEE Std 802.1AE-2018/Cor 1-2020.

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 documents should be noted (see www.iso.org/directives).

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.

ISO/IEC/IEEE 8802-1AE:2020/Cor 1 was prepared by the LAN/MAN of the IEEE Computer Society (as IEEE Std 802.1AE-2018/Cor 1-2020) 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*.

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

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.

This corrected version of ISO/IEC/IEEE 8802-1AE:2020/Cor 1 incorporates the following corrections:

- The ISO/IEC/IEEE cover page was added;
- The ISO/IEC/IEEE Foreword was added;
- Pages 1, 2 and 14 were deleted.

iTeh STANDARD PREVIEW (standards.iteh.ai)

ISO/IEC/IEEE 8802-1AE:2020/Cor 1:2021 https://standards.iteh.ai/catalog/standards/sist/329c3aa8-94da-4088-b458-a0b1fdb4de02/iso-iec-ieee-8802-1ae-2020-cor-1-2021 **Abstract:** How all or part of a network can be secured transparently to peer protocol entities that use the MAC Service provided by IEEE 802® LANs to communicate is specified in this standard. MAC security (MACsec) provides connectionless user data confidentiality, data frame integrity, and data origin authenticity.

Keywords: authorized port, confidentiality, corrigendum, data origin authenticity, IEEE 802.1AE[™], integrity, LANs, local area networks, MAC Bridges, MAC security, MAC Service, MANs, metropolitan area networks, port-based network access control, secure association, security, transparent bridging

iTeh STANDARD PREVIEW (standards.iteh.ai)

ISO/IEC/IEEE 8802-1AE:2020/Cor 1:2021 https://standards.iteh.ai/catalog/standards/sist/329c3aa8-94da-4088-b458-a0b1fdb4de02/iso-iec-ieee-8802-1ae-2020-cor-1-2021

The Institute of Electrical and Electronics Engineers, Inc. 3 Park Avenue, New York, NY 10016-5997, USA

Copyright © 2020 by The Institute of Electrical and Electronics Engineers, Inc. All rights reserved. Published 21 July 2020. Printed in the United States of America.

IEEE and 802 are registered trademarks in the U.S. Patent & Trademark Office, owned by The Institute of Electrical and Electronics Engineers, Incorporated.

PDF: ISBN 978-1-5044-6822-0 STD24249

IEEE prohibits discrimination, harassment, and bullying.

For more information, visit http://www.ieee.org/web/aboutus/whatis/policies/p9-26.html.

No part of this publication may be reproduced in any form, in an electronic retrieval system or otherwise, without the prior written permission of the publisher.

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 https://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 imerchantability; 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 STANDARD PREVIEW

Laws and regulations

(standards.iteh.ai)

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 line 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 US 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. An official 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 10 years. When a document is more than 10 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 IEEE Xplore at https://ieeexplore.ieee.org/ 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 https://standards.ieee.org.

Errata

Errata, if any, for IEEE standards can be accessed via https://standards.ieee.org/standard/index.html. Search for standard number and year of approval to access the web page of the published standard. Errata links are located under the Additional Resources Details section. Errata are also available in IEEE Xplore: https://ieeexplore.ieee.org/browse/standards/collection/ ieee/. Users are encouraged to periodically check for errata.

iTeh STANDARD PREVIEW **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 https://standards.ieee.org/about/938b/parcom/parchits.familin 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

At the time this corrigendum was submitted to the IEEE SA Standards Board for approval, the IEEE 802.1 Working Group had the following membership:

Glenn Parsons, Chair John Messenger, Vice Chair Mick Seaman, Security Task Group Chair and Editor

Satoko Itava Karen Randall Astrit Ademaj Ralf Assmann Yoshihiro Ito Maximilian Riegel Michael Karl Jessy V. Rouyer Jens Bierschenk Christian Boiger Stephan Kehrer Atsushi Sato Frank Schewe Paul Bottorff Randy Kelsey Radhakrishna Canchi Hajime Koto Maik Seewald James Lawlis Johannes Specht Feng Chen Weiying Cheng Christophe Mangin Marius Stanica Paul Congdon Scott Mansfield Guenter Steindl Rodney Cummings Kenichi Maruhashi Karim Traore Josef Dorr David McCall Xinvuan Wang Hesham Elbakoury Larry McMillan Tongtong Wang Tero Mustala Thomas Enzinger Hao Wang János Farkas Roy Myers Karl Weber Donald Fedyk Hiroki Nakano Brian Weis Norman Finn Bob Noseworthy Ludwig Winkel Tomoki Ohsawa Hiroshi Ohue Jordon Woods Geoffrey Garner iTeh STAI Takahiro Yamaura Craig Gunther Marina Gutierrez Donald R. Pannell Nader Zein stan Michael Potts iteh ai William Zhao Stephen Haddock Mark Hantel Dieter Proell Helge Zinner Harald Zweck Marc Holness Wei Qiu

ISO/IEC/IEEE 8802-1AE:2020/Cor 1:2021

https://standards.iteh.ai/catalog/standards/sist/329c3aa8-94da-4088-b458-

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

Butch Anton Raj Jain Harry Bims Pranav Jha Sangkwon Jeong Christian Boiger Lokesh Kabra Nancy Bravin Demetrio Bucaneg Piotr Karocki William Byrd Stephan Kehrer Paul Cardinal Randy Kelsey Pin Chang Stuart Kerry Charles Cook Evgeny Khorov Donald Fedyk Yongbum Kim Avraham Freedman Hyeong Ho Lee Matthias Fritsche Kang Lee Devon Gayle Jon Lewis Tim Godfrey Michael Maytum Randall Groves Stephen McCann Craig Gunther Brett McClellan Jonathon McClendon Stephen Haddock Marek Hajduczenia John Messenger Marco Hernandez Michael Montemurro Werner Hoelzl Nick S. A. Nikjoo Oliver Holland Satoshi Obara Russell Housley Glenn Parsons Atsushi Ito Bansi Patel

Arumugam Paventhan Brian Petry David Piehler Walter Pienciak Clinton Powell Karen Randall R. K. Rannow Robert Robinson Benjamin Rolfe Jessy V. Rouyer Frank Schewe Mick Seaman Maik Seewald Thomas Starai Walter Struppler Mark-Rene Uchida George Vlantis Hung-Yu Wei Brian Weis Scott Willy Andreas Wolf Yu Yuan Oren Yuen

When the IEEE SA Standards Board approved this corrigendum on 4 June 2020, it had the following membership:

> Gary Hoffman, Chair Jon Walter Rosdahl, Vice-Chair Jean-Philippe Faure, Past Chair Konstantinos Karachalios, Secretary

Ted Burse David J. Law Mehmet Ulema J. Travis Griffith Howard Li Lei Wang Dong Liu Sha Wei Grace Gu Guido R. Hiertz Kevin Lu Philip B. Winston Daidi Zhong Joseph L. Koepfinger* Paul Nikolich Damir Novosel Jingyi Zhou John D. Kulick Dorothy Stanley

iTeh STANDARD PREVIEW (standards.iteh.ai)

ISO/IEC/IEEE 8802-1AE:2020/Cor 1:2021 https://standards.iteh.ai/catalog/standards/sist/329c3aa8-94da-4088-b458a0b1fdb4de02/iso-iec-ieee-8802-1ae-2020-cor-1-2021

^{*}Member Emeritus

Introduction

This introduction is not part of IEEE Std 802.1AE-2018/Cor 1-2020, IEEE Standard for Local and metropolitan area networks—Media Access Control (MAC) Security—Corrigendum 1: Tag Control Information Figure.

This corrigendum to IEEE Std 802.1AE-2018 replaces Figure 9-4 with the Figure 9-4 from IEEE Std 802.1AE-2006. (In developing the 2018 version of this standard, the figure was inadvertently replaced with a figure from an early draft of the 2006 version.)

iTeh STANDARD PREVIEW (standards.iteh.ai)

ISO/IEC/IEEE 8802-1AE:2020/Cor 1:2021 https://standards.iteh.ai/catalog/standards/sist/329c3aa8-94da-4088-b458-a0b1fdb4de02/iso-iec-ieee-8802-1ae-2020-cor-1-2021