INTERNATIONAL STANDARD

ISO/IEC/IEEE 8802-11

Second edition
2018-05-01

AMENDMENT 1
2019-02

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

Part 11: Wireless LAN medium access control (MAC) and physical layer (PHY) specifications

AMENDMENT 1: Fast initial link setup

Technologies de l'information — Télécommunications et échange d'information entre systèmes — Réseaux locaux et métropolitains — Exigences spécifiques —

Partie 11: Spécifications du contrôle d'accès du milieu sans fil (MAC) et de la couche physique (PHY)

AMENDEMENT 1: Configuration de liaison initiale rapide

Reference number
ISO/IEC/IEEE 8802-11:2018/Amd.1:2019(E)

COPYRIGHT PROTECTED DOCUMENT

ISO copyright office
CP 401 • Ch. de Blandonnet 8
CH-1214 Vernier, Geneva
Phone: +41 22 749 01 11
Fax: +41 22 749 09 47
Email: copyright@iso.org
Website: www.iso.org

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

Email: stds.ipr@ieee.org
Website: www.ieee.org

Published in Switzerland

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. In the field of information technology, ISO and IEC have established a joint technical committee, ISO/IEC JTC 1.

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).

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 8802-11:2018/Amd.1 was prepared by the LAN/MAN of the IEEE Computer Society (as IEEE Std 802.11ai-2016) 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 SC6, *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.

IEEE Std 802.11ai™-2016
(Amendment to
IEEE Std 802.11™-2016)

**IEEE Standard for Information technology—
Telecommunications and information exchange between systems
Local and metropolitan area networks—
Specific requirements**

Part 11: Wireless LAN Medium Access Control (MAC) and Physical Layer (PHY) Specifications

Amendment 1: Fast Initial Link Setup

Sponsor

**LAN/MAN Standards Committee
of the
IEEE Computer Society**

Approved 7 December 2016

IEEE-SA Standards Board

Abstract: Mechanisms that provide IEEE Std 802.11 networks with fast initial link setup methods that do not degrade the security offered by Robust Security Network Association (RSNA) already defined in IEEE Std 802.11 are defined in this amendment.

Keywords: amendment, Fast Initial Link setup, FILS, IEEE 802.11ai™

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

SECOND PRINTING: 14 April 2017. Erratum included in Clause 9—Table 9-46 and Table 9-47.

PDF: ISBN 978-1-5044-3631-1 STD22359
Print: ISBN 978-1-5044-3632-8 STDPD22359

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. 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 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 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

At the time this standard was completed, the IEEE 802.11 Working Group had the following membership:

Adrian P. Stephens, *Chair*
Jon W. Rosdahl, *1st Vice Chair*
Dorothy V. Stanley, *2nd Vice Chair*
Stephen McCann, *Secretary*

The following were officers of Task Group ai:

Hiroshi Mano, *Chair*
Marc Emmelmann, *Vice Chair*
Hitoshi Morioka, *Secretary*
Lee R. Armstrong, *Co-Technical Editor*
Ping Fang, *Co-Technical Editor*

Osama S. Aboulmagd
Santosh P. Abraham
Roberto Aiello
Thomas Alexander
Peiman Amini
Sirikiat Lek Ariyavisitakul
Yusuke Asai
Alex Ashley
Kwok Shum Au
Vijay Auluck
Stefan Aust
David Bagby
Eugene Baik
Gabor Bajko
Raja Banerjea
Phillip Barber
Anuj Batra
Tuncer Baykas
Alan Berkema
Nehru Bhandaru
Philippe Boucachard
Andre Bourdoux
John Buffington
Lin Cai
George Calcev
Chris Calvert
Radhakrishna Canchi
Laurent Cariou
William Carney
Jaesun Cha
Romana Challans
Kim Chang
Kuor-Hsin Chang
Xin Chang
Clint F. Chaplin
Bin Chen
Jiamin Chen
Jixin Chen
Lidong Chen
Qian Chen
Xi Chen
Minho Cheong
George Cherian
Francois Chin
Rojan Chitrakar
Jinsoo Choi
Sangsung Choi
Li Chia Chia Choo
Sayantan Choudhury
Liwen Chu
Jinyoung Chun
John Coffey
Kenneth Coop
Carlos Cordeiro
Neiyer Correal
Subir Das
Hendricus De Ruijter
Rolf J. de Vegt
Yohannes Demessie
Michael Denson
Ting Dong
Xiandong Dong
Klaus Doppler
Roger P. Durand
Donald E. Eastlake
Peter Ecclesine
Richard Edgar
Amal Ekbal
Vinko Erceg
Yonggang Fang
Qin Fei
Stanislav Filin
Norman Finn
Matthew J. Fischer
George Flammer
Chittabrata Ghosh
James P. K. Gilb
Reinhard Gloger
Daning Gong
David Goodall
Elad Gottlib
Sudheer A. Grandhi
Stephen Grau
Michael Grigat
David Halasz
Mark A. Hamilton
Christopher J. Hansen
Peng Hao
Hiroshi Harada
Daniel N. Harkins
Brian D. Hart
Ahmadreza Hedayat
Robert F. Heile
Jerome Henry
Chin Keong Ho
Anh Tuan Hoang
Dien Hoang
Wei Hong
Ying-Chuan Hsiao
Jing-Rong Hsieh
David Hunter
Yasuhiko Inoue
Mitsuru Iwaoka
Wuncheol Jeong
Yangseok Jeong
Sunggeun Jin
ZhongYi Jin
Nihar Jindal
V. K. Jones
Jari Junell
Padam Kafle
Carl W. Kain
Hyunduk Kang
Mika Kasslin
Richard H. Kennedy
Stuart J. Kerry
Eunkyung Kim
Jeongki Kim
Jinho Kim
Joo Young Kim
Joonsuk Kim
Suhwook Kim
Taejoon Kim
Youhan Kim
Youngsoo Kim
Shoichi Kitazawa
Jarkko Kneckt
Gwangzeen Ko
Fumihide Kojima
Tom Kolze
Timo Koskela
Bruce P. Kraemer
Jin-Sam Kwak
Joseph Kwak
Hyoungjin Kwon

Young Hoon Kwon
Paul Lambert
Zhou Lan
Leonardo Lanante
James Lansford
Jean-Pierre Le Rouzic
Anseok Lee
Donghun Lee
Jae Seung Lee
Wookbong Lee
Zhongding Lei
Wai Kong Leung
Joseph Levy
Feng Li
Huan-Bang Li
Liang Li
Lingjie Li
Yunbo Li
Yunzhou Li
Zhiqiang Li
Erik Lindskog
Jianhan Liu
Pei Liu
Yong Liu
Zongru Liu
Peter Loc
Su Lu
Long Luo
Yi Luo
Zhendong Luo
Kaiying Lv
Michael Lynch
Jouni K. Malinen
Simone Merlin
James Miller
Keiichi Mizutani
Apurva Mody
Michael Montemurro
Kenichi Mori
Ronald Murias
Andrew Myles
Yukimasa Nagai
Yuhei Nagao
Hiroki Nakano
Chiu Ngo
Paul Nikolich
Hiroyo Ogawa
Minseok Oh
Min-seok Oh
David Olson
Satoshi Oyama
Michael J. Paljug
Santos Ghanshyam Pandey
Anna Pantelidou
Giwon Park
Minyoung Park
Seung-Hoon Park
Jaya Shankar Pathmasuntharam
Sandhya Patil
Xiaoming Peng
Eldad Perahia
James E. Petranovich
Albert Petrick
John Petro
Xu Ping
Juho Pirskanen
Khiam Boon Png
Vishakan Ponnampalam
Ron Porat
Henry S. Ptasinski
Rethnakaran Pulikkoonattu
Chang-Woo Chang Pyo
Emily H. Qi
Huyu Qu
Harish Ramamurthy
Jayaram Ramasastry
Ivan Reede
Edward Reuss
Maximilian Riegel
Mark Rison
Zhigang Rong
Jon W. Rosdahl
Cheol Ryu
Kiseon Ryu
Kazuyuki Sakoda
Ruben E. Salazar Cardozo
Hemanth Sampath
Sigurd Schelstraete
Jean Schwoerer
Jonathan Segev
Cristina Seibert
Yongho Seok
Kunal Shah
Huairong Shao
Zhenhai Shao
Stephen J. Shellhammer
Ian Sherlock
Wei Shi
Nobuhiko Shibagaki
Shusaku Shimada
Chang Sub Shin
Thomas M. Siep
Michael Sim
Dwight Smith
Graham Kenneth Smith
Myung Sun Song
Sudhir Srinivasa
Robert Stacey
Dorothy V. Stanley
Lawrence Stefani
Adrian P. Stephens
Rene Struik
Jung Hoon Suh
Chin-sean Sum
Bo Sun
Chen Sun
Sheng Sun
Kazuaki Takahashi
Mineo Takai
Sagar Tamhane
Joseph Teo
Thomas Tetzlaff
Jerry Thrasher
Tong Tian
Jens Tingleff
Fei Tong
Ha Nguyen Tran
Kazuyoshi Tsukada
Masahiro Umehira
Richard D. J. Van Nee
Allert Van Zelst
Prabodh Varshney
Sameer Vermani
Dalton T. Victor
Gabriel Villardi
George A Vlantis
Chao Chun Wang
Haiguang Wang
Haiming Wang
James June Wang
Lei Wang
Lin Wang
Qi Wang
Xiang Wang
Xuehuan Wang
Lisa Ward
Zou Wei-Xia
Lei Wen
Menzo M. Wentink
Harya Wicaksana
Eric Wong
Harry R. Worstell
Tianyu Wu
Zhanji Wu
Zhenyu Xiao
Dongmei Xu
Quanping Xu
Guang-Qi Yang
Lin Yang
Xun Yang
Yunsong Yang
Fan Ye
James Yee
Peter Yee
Wai-Leong Yeow
Kaoru Yokoo
Su Khiong Khiong Yong
Christopher Young
Heejung Yu
Zhan Yu
Tevfik Yucek
Guangrong Yue
Katsuo D. A. Yunoki
Hongyuan Zhang
Hui Zhang
Junjian Zhang
Nianzu Zhang
Xin Zhang
Mu Zhao
Jun Zheng
Shoukang Zheng
Mingtuo Zhou
Yan Zhuang
Lan Zhuo

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

Tomoko Adachi
Thomas Alexander
Richard Alfvin
Nobumitsu Amachi
Carol Ansley
Butch Anton
Yusuke Asai
Alfred Asterjadhi
Stefan Aust
Gabor Bajko
Phillip Barber
Harry Bims
Gennaro Boggia
Nancy Bravin
Jairo Bustos Heredia
William Byrd
Radhakrishna Canchi
Cagatay Capar
William Carney
Juan Carreon
Minho Cheong
Paul Chiuchiolo
Sayantan Choudhury
Keith Chow
Charles Cook
Subir Das
Patrick Diamond
Yezid Donoso
Malcolm Dowse
Sourav Dutta
Richard Edgar
Marc Emmelmann
Michael Fischer
Avraham Freedman
Devon Gayle
Joel Goergen
Randall Groves
Michael Gundlach
Gloria Gwynne
Russell Haines
Mark Hamilton
Daniel Harkins
Jerome Henry
Marco Hernandez
Guido Hiertz
Werner Hoelzl
Russell Housley
Noriyuki Ikeuchi
Yasuhiko Inoue
Akio Iso
Atsushi Ito
Raj Jain
Adri Jovin
Naveen Kakani
Shinkyo Kaku
Hyunjeong Kang
Piotr Karocki
John Kenney
Stuart Kerry
Youhan Kim
Patrick Kinney
Bruce Kraemer
Yasushi Kudoh
Thomas Kurihara
Paul Lambert
Jeremy Landt
Hyeong Ho Lee
Zhongding Lei
James Lepp
Joseph Levy
Arthur H. Light
William Lumpkins
Michael Lynch
Chris Lyttle
Elvis Maculuba
Jouni Malinen
Hiroshi Mano
James Marin
Stephen McCann
Michael McInnis
Filip Mestanov
Michael Montemurro
Jose Morales
Ronald Murias
Rick Murphy
Andrew Myles
Michael Newman
Nick S.A Nikjoo
John Notor
Satoshi Obara
Robert O'Hara
Yoshihiro Ohba
Satoshi Oyama
Stephen Palm
Arumugam Paventhan
Venkatesha Prasad
Karen Randall
Maximilian Riegel
Mark Rison
Robert Robinson
Benjamin Rolfe
Jon W. Rosdahl
Osman Sakr
Shigenobu Sasaki
Naotaka Sato
Bartien Sayogo
Andy Scott
Yongho Seok
Ian Sherlock
Graham Smith
Daniel Smolinski
Ju-Hyung Son
Kapil Sood
Thomas Starai
Adrian P. Stephens
Rene Struik
Walter Struppler
Michael Swearingen
Payam Torab
Kazuyoshi Tsukada
Mark-Rene Uchida
Lorenzo Vangelista
Dmitri Varsanofiev
Prabodh Varshney
Ganesh Venkatesan
George Vlantis
Khurram Waheed
Haiming Wang
James June Wang
Lei Wang
Xiaofei Wang
Hung-Yu Wei
James Yee
Oren Yuen

When the IEEE-SA Standards Board approved this standard on 7 December 2016, it had the following membership:

Jean-Philippe Faure, *Chair*
Ted Burse, *Vice Chair*
John D. Kulick, *Past Chair*
Konstantinos Karachalios, *Secretary*

Chuck Adams
Masayuki Ariyoshi
Stephen Dukes
Jianbin Fan
J. Travis Griffith
Gary Hoffman
Ronald W. Hotchkiss
Michael Janezic
Joseph L. Koepfinger*
Hung Ling
Kevin Lu
Annette D. Reilly
Gary Robinson
Mehmet Ulema
Yingli Wen
Howard Wolfman
Don Wright
Yu Yuan
Daidi Zhong

*Member Emeritus

Introduction

This introduction is not part of IEEE Std 802.11ai-2016, IEEE Standard for Information technology—Telecommunications and information exchange between systems—Local and metropolitan area networks—Specific requirements—Part 11: Wireless LAN Medium Access Control (MAC) and Physical Layer (PHY) Specifications—Amendment 1: Fast Initial Link Setup.

This amendment defines mechanisms that provide IEEE 802.11 networks with fast initial link setup methods that do not degrade the security offered by Robust Security Network Association (RSNA) already defined in IEEE Std 802.11.