INTERNATIONAL STANDARD

ISO/IEC/IEEE 8802-21

First edition
2018-04

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

Part 21: Media independent services framework

iTeh STANDARD PREVIEW
(standards.iteh.ai)
ISO/IEC/IEEE 8802-21:2018
https://standards.iteh.ai/catalog/standards/sist/5666dde0-2167-4704-ae65-00944e6b57e0/iso-iec-ieee-8802-21-2018

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

Partie 21: Cadre des services indépendants des supports

Reference number
ISO/IEC/IEEE 8802-21:2018(E)

© IEEE 2017

iTeh STANDARD PREVIEW
(standards.iteh.ai)
ISO/IEC/IEEE 8802-21:2018
https://standards.iteh.ai/catalog/standards/sist/5666dde0-2167-4704-ae65-00944e6be7e0/iso-iec-ieee-8802-21-2018

COPYRIGHT PROTECTED DOCUMENT

© IEEE 2017

All rights reserved. Unless otherwise specified, or required in the context of its implementation, no part of this publication may be reproduced or utilized otherwise in any form or by any means, electronic or mechanical, including photocopying, or posting on the internet or an intranet, without prior written permission. Permission can be requested from either ISO or IEEE at the respective address below or ISO's member body in the country of the requester.

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

© IEEE 2017 – All rights reserved

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.

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.

iTeh STANDARD PREVIEW
(standards.iteh.ai)

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).

ISO/IEC/IEEE 8802-21:2018
https://standards.iteh.ai/catalog/standards/sist/5666dde0-2167-4704-ae65-09044e6b5e70/iso-iec-ieee-8802-21-2018

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

For an explanation on 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 the following URL: www.iso.org/iso/foreword.html.

ISO/IEC/IEEE 8802-21 was prepared by the LAN/MAN of the IEEE Computer Society (as IEEE Std 802.21-2017) 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.

© IEEE 2017 – All rights reserved

iTeh STANDARD PREVIEW
(standards.iteh.ai)

ISO/IEC/IEEE 8802-21:2018
https://standards.iteh.ai/catalog/standards/sist/5666dde0-2167-4704-ae65-00944e6be7e0/iso-iec-ieee-8802-21-2018

IEEE Std 802.21™-2017
(Revision of IEEE Std 802.21-2008
as amended by IEEE Std 802.21a™-2012,
IEEE Std 802.21b™-2012, IEEE Std 802.21c™-2014,
and IEEE Std 802.21d™-2015)

IEEE Standard for Local and metropolitan area networks—

Part 21: Media Independent Services Framework

iTeh STANDARD PREVIEW
(standards.iteh.ai)

Sponsor

LAN/MAN Standards Committee
of the
IEEE Computer Society

ISO/IEC/IEEE 8802-21:2018
https://standards.iteh.ai/catalog/standards/sist/5666dde0-2167-4704-ae65-00944e6be7e0/iso-iec-ieee-8802-21-2018

Approved 14 February 2017

IEEE-SA Standards Board

Abstract: An extensible IEEE 802® media access independent services framework (i.e., function and protocol) is defined that enables the optimization of services including handover and other services when performed between heterogeneous IEEE 802 networks. These services are facilitated by this standard when networking between IEEE 802 networks and cellular networks.

Keywords: broadcast, downlink only, group, group management, group security, IEEE 802.21™, management, media independent handover, media independent service, mobile node, mobility, multicast, point of attachment, point of service, proactive authentication, seamless, security protection, service access authentication

iTeh STANDARD PREVIEW
(standards.iteh.ai)
ISO/IEC/IEEE 8802-21:2018
https://standards.iteh.ai/catalog/standards/sist/5666dde0-2167-4704-ae65-00944e6be7e0/iso-iec-ieee-8802-21-2018

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

Copyright © 2017 by The Institute of Electrical and Electronics Engineers, Inc.
All rights reserved. Published 28 April 2017. Printed in the United States of America.

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

3GPP and UMTS are trademarks of The European Telecommunications Standards Institute (ETSI).

PDF: ISBN 978-1-5044-3806-3 STD22456
Print: ISBN 978-1-5044-3807-0 STDPD22456

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.

Copyright © 2017 IEEE. All rights reserved.

© IEEE 2017 – All rights reserved

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.

iTeh STANDARD PREVIEW
(standards.iteh.ai)

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."

ISO/IEC/IEEE 8802-21:2018
https://standards.iteh.ai/catalog/standards/sist/5666dde0-2167-4704-ae65-00944e6bc7e0/iso-iec-ieee-8802-21-2018

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.

Copyright © 2017 IEEE. All rights reserved.

© IEEE 2017 – All rights reserved

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.

iTeh STANDARD PREVIEW
(standards.iteh.ai)
ISO/IEC/IEEE 8802-21:2018
https://standards.iteh.ai/catalog/standards/sist/[illegible]-2167-4704-ae65-00944e6be7e0/iso-iec-ieee-8802-21-2018

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.

Copyright © 2017 IEEE. All rights reserved.

© IEEE 2017 – All rights reserved

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 Xplore 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.

iTeh STANDARD PREVIEW
(standards.iteh.ai)

Errata

ISO/IEC/IEEE 8802-21:2018

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.

Copyright © 2017 IEEE. All rights reserved.

© IEEE 2017 – All rights reserved

Participants

At the time this standard was submitted to the IEEE-SA Standards Board for approval, the P802.21 Working Group had the following membership:

Subir Das, *Chair*
Hyeong Ho Lee, *Vice Chair*
Yoshikazu Hanatani, *Technical Editor*

H. Anthony Chan
Clint Chaplin
Lidong Chen
Jin Seek Choi
Daniel Corujo
Antonio De la Oliva Delgado
Yong-Geun Hong
Sangkwon Peter Jeong
Farrokh Khatibi
Michael Lynch
Yoichi Masuda
Naoki Ogura
Yoshihiro Ohba
Hyunho Park
Charles E. Perkins
Karen Randall
Yusuke Shimizu
Tomoki Takazoe
Keiichi Teramoto
Yuji Unagami

In addition, the following members have either contributed or participated during the development of this Standard:

Yusuke Doi
Krzysztof Grochla
Changhwa Lyou
Torleiv Masen
Christian Niephaus
Dick Roy
Ruben Salazar
Randy Turner

iTeh STANDARD PREVIEW
(standards.iteh.ai)

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

ISO/IEC/IEEE 8802-21:2018
https://standards.iteh.ai/catalog/standards/sist/5666dde0-2167-4704-aec5-00944e6b37e0/iso-iec-ieee-8802-21-2018

Thomas Alexander
Butch Anton
H. Stephen Berger
Harry Bims
Gennaro Boggia
William Byrd
Juan Carreon
Charles Cook
Daniel Corujo
Subir Das
Sourav Dutta
Richard Edgar
Marc Emmelmann
Avraham Freedman
Joel Goergen
Randall Groves
Yoshikazu Hanatani
Werner Hoelzl
David Howard
Noriyuki Ikeuchi
Atsushi Ito
Raj Jain
Piotr Karocki
Stuart Kerry
Farrokh Khatibi
Yongbum Kim
Hyeong Ho Lee
Jae Seung Lee
Moon-Sik Lee
Michael Lynch
Elvis Maculuba
Stephen McCann
Michael McInnis
Jeffrey Moore
Nick S. A. Nikjoo
Paul Nikolich
Yoshihiro Ohba
Satoshi Oyama
Arumugam Paventhan
Venkatesha Prasad
Karen Randall
Maximilian Riegel
Naotaka Sato
Yusuke Shimizu
Dorothy Stanley
Thomas Starai
Michael Stelts
Walter Struppler
Mark Sturza
Tomoki Takazoe
Patricia Thaler
Mark-Rene Uchida
Dmitri Varsanofiev
Prabodh Varshney
Oren Yuen

Copyright © 2017 IEEE. All rights reserved.

© IEEE 2017 – All rights reserved

When the IEEE-SA Standards Board approved this standard on 14 February 2017, it had the following membership:

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

Chuck Adams
Masayuki Ariyoshi
Ted Burse
Stephen Dukes
Doug Edwards
J. Travis Griffith
Gary Hoffman
Michael Janezic
Thomas Koshy
Joseph L. Koepfinger*
Kevin Lu
Daleep Mohla
Damir Novosel
Ronald C. Petersen
Annette D. Reilly
Robby Robson
Dorothy Stanley
Adrian Stephens
Mehmet Ulema
Phil Wennblom
Howard Wolfman
Yu Yuan

*Member Emeritus

iTeh STANDARD PREVIEW
(standards.iteh.ai)
ISO/IEC/IEEE 8802-21:2018
https://standards.iteh.ai/catalog/standards/sist/5666dde0-2167-4704-ae65-00944e6be7e0/iso-iec-ieee-8802-21-2018

Copyright © 2017 IEEE. All rights reserved.

© IEEE 2017 – All rights reserved

Introduction

This introduction is not part of IEEE Std 802.21-2017, IEEE Standard for Local and metropolitan area networks—Part 21: Media Independent Services Framework.

This standard defines an extensible IEEE 802® media access independent services framework (i.e., function and protocol) that enables the optimization of services including handover service when performed between heterogeneous IEEE 802 networks. It also facilitates these services when networking between IEEE 802 networks and cellular networks.

iTeh STANDARD PREVIEW
(standards.iteh.ai)
ISO/IEC/IEEE 8802-21:2018
https://standards.iteh.ai/catalog/standards/sist/5666dde0-2167-4704-ae65-00944e6be7e0/iso-iec-ieee-8802-21-2018

Copyright © 2017 IEEE. All rights reserved.

© IEEE 2017 – All rights reserved

Contents

1. Overview 16
1.1 Scope 16
1.2 Purpose 16
1.3 General 16
1.4 Assumptions 18
1.5 Media independence 18

2. Normative references 19

3. Definitions 22

4. Abbreviations and acronyms 26

5. General architecture 31
5.1 Introduction 31
5.2 General design principles 33
5.3 MISF service overview 33
5.4 Media independent service reference framework 36
5.5 MISF reference models for link-layer technologies 38
5.6 Service access points (SAPs) 44
5.7 MIS protocol 46

6. MISF services 48
6.1 General 48
6.2 Service management 48
6.3 Media independent event service 50
6.4 Media independent command service 54
6.5 Media independent information service 58

7. Service access point (SAPs) and primitives 70
7.1 Introduction 70
7.2 SAPs 71
7.3 MIS_LINK_SAP primitives 73
7.4 MIS_SAP primitive 85
7.5 MIS_NET_SAP primitive 136

8. Media independent service protocol 138
8.1 Introduction 138
8.2 MIS protocol description 138
8.3 MIS protocol identifier 150
8.4 MIS protocol frame format 152
8.5 Message parameter TLV encoding 159
8.6 MIS protocol messages 159

9. MIS protocol protection 179
9.1 Protection established through MIS (D)TLS 179
9.2 Key establishment through an MIS service access authentication 180
9.3 MIS message protection mechanisms for EAP-generated SAs 189
9.4 Common procedures 196
9.5 Group manipulation for group addressed messages 197
9.6 Group addressed message protection 223

iTeh STANDARD PREVIEW
(standards.iteh.ai)
ISO/IEC/IEEE 8802-21:2018
https://standards.iteh.ai/catalog/standards/sist/5666dde0-2167-4704-ac65-00944e6be7e0/iso-iec-ieee-8802-21-2018

Copyright © 2017 IEEE. All rights reserved.

© IEEE 2017 – All rights reserved

10. Proactive authentication 231
10.1 Media-specific proactive authentication 232
10.2 Bundling media access authentication with MIS service access authentication 233

Annex A (informative) Bibliography 236

Annex B (normative) Quality of service mapping 237
B.1 Generic IEEE 802.21 QoS flow diagram 238
B.2 Generic IEEE 802.21 QoS parameter mappings 239
B.3 Deriving generic IEEE 802.21 QoS parameters 241

Annex C (normative) Mapping media independent service (MIS) messages to reference points 244

Annex D (normative) Media-specific mapping for service access points (SAPs) 245
D.1 MIS_LINK_SAP mapping to specific technologies 245
D.2 Mapping from MIS_LINK_SAP to media-specific SAPs 247

Annex E (normative) Data type definitions 249
E.1 General 249
E.2 Basic data types 249
E.3 Derived data types 251

Annex F (normative) Information element identifiers 282

Annex G (normative) Media independent information service (MIIS) basic schema 283

Annex H (informative) Making user extensions to media independent information service (MIIS) schema 284

Annex I (normative) IEEE 802.21 management information base (MIB) 285
I.1 Parameters requiring MIB definition 285
I.2 IEEE 802.21 MIB definition 286

Annex J (informative) Example media independent service (MIS) message fragmentation 287
J.1 Example of original MIS message fragmentation 287
J.2 Calculation of securityOverhead when there is an MIS security association (SA) 287

Annex K (normative) Media independent service (MIS) protocol message code assignments 290

Annex L (normative) Protocol implementation conformance statement (PICS) proforma 294
L.1 Introduction 294
L.2 Scope 294
L.3 Conformance 294
L.4 Instructions 294
L.5 Identification of the implementation 297
L.6 Identification of the protocol 297
L.7 Identification of corrigenda to the protocol 297
L.8 PICS proforma tables 297

Annex M (informative) Authentication and key distribution procedures 303
M.1 Media independent service (MIS) service access authentication 303
M.2 Push key distribution 305
M.3 Proactive authentication 306
M.4 Optimized pull key distribution 307
M.5 Termination phase 308

iTeh STANDARD PREVIEW
(standards.iteh.ai)
ISO/IEC/IEEE 8802-21:2018
https://standards.iteh.ai/catalog/standards/sist/5666d1d0-2167-4704-ae65-0084d6be7e0/iso-iec-ieee-8802-21-2018

Copyright © 2017 IEEE. All rights reserved.

© IEEE 2017 – All rights reserved

Annex N (informative) Protection through transport protocols....309
N.1 Protection through layer 2....309
N.2 Protection through internet protocol security (IPsec)....309

Annex O (informative) Examples of fragmented group key block (GKB) operation....310

Annex P (normative) Use of Bloom Filter for certificate revocation....312
P.1 Calculating Bloom Filter output for revoked certificates....312
P.2 Certificate revocation check....312
P.3 False positive case....312

iTeh STANDARD PREVIEW
(standards.iteh.ai)
ISO/IEC/IEEE 8802-21:2018
https://standards.iteh.ai/catalog/standards/sist/5666dde0-2167-4704-ae65-00944e6be7e0/iso-iec-ieee-8802-21-2018

Copyright © 2017 IEEE. All rights reserved.

© IEEE 2017 – All rights reserved