

INTERNATIONAL
STANDARD

ISO/IEC
8802-2

Second edition
1994-12-30
AMENDMENT 3
1995-06-28

IEEE
P802.2c

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

Part 2:

Logical link control

AMENDMENT 3: Conformance requirements

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

Partie 2: Contrôle de liaison logique

AMENDEMENT 3: Prescriptions de conformité



Reference number
ISO/IEC 8802-2:1994/Amd.3:1995(E)
IEEE P802.2c

Abstract: Conformance requirements for ISO/IEC 8802-2 : 1994 [ANSI/IEEE Std 802.2, 1994] are provided.

Keywords: Local area networks, protocols; logical link control

iTeh STANDARD PREVIEW (standards.iteh.ai)

[ISO/IEC 8802-2:1994/Amd 3:1995](https://standards.iteh.ai/catalog/standards/sist/b096a9ed-23e2-4167-ab3d-e048c0baeca7/iso-iec-8802-2-1994-amd-3-1995)

<https://standards.iteh.ai/catalog/standards/sist/b096a9ed-23e2-4167-ab3d-e048c0baeca7/iso-iec-8802-2-1994-amd-3-1995>

The Institute of Electrical and Electronics Engineers, Inc.
345 East 47th Street, New York, NY 10017-2394, USA

Copyright © 1995 by the Institute of Electrical and Electronics Engineers, Inc.
All rights reserved. Published 1995. Printed in the United States of America.

ISBN 1-55937-523-X

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.

June 28, 1995

SH94286

International Standard ISO/IEC 8802-2:1994/Amd.3:1995(E)
IEEE P802.2c (Draft IEEE Standard)

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

Part 2: Logical link control

Amendment 3: Conformance requirements

ITeh STANDARD PREVIEW
(standards.iteh.ai)

Sponsor

Technical Committee on Computer Communications
of the
IEEE Computer Society

ISO/IEC 8802-2:1994/Amd 3:1995

standards.iteh.ai/catalog/standards/sist/8070a7ed-2562-4167-ab3d-e048c0baeca7/iso-
iec-8802-2-1994-amd-3-1995



Adopted as an International Standard by the
International Organization for Standardization
and by the
International Electrotechnical Commission



Published by
The Institute of Electrical and Electronics Engineers, Inc.

Amendment 3 to ISO/IEC 8802-2:1994

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. Draft International Standards adopted by the joint technical committee are circulated to national bodies for voting. Publication as an International Standard requires approval by at least 75 % of the national bodies casting a vote.

Amendment 3 to International Standard ISO/IEC 8802-2:1994 was prepared by Joint Technical Committee ISO/IEC JTC 1, *Information technology*, Subcommittee SC 6, *Telecommunications and information exchange between systems*.

ITEH STANDARD PREVIEW
(standards.iteh.ai)

[ISO/IEC 8802-2:1994/Amd 3:1995](https://standards.iteh.ai/catalog/standards/sist/b096a9ed-23e2-4167-ab3d-e048c0baeca7/iso-iec-8802-2-1994-amd-3-1995)

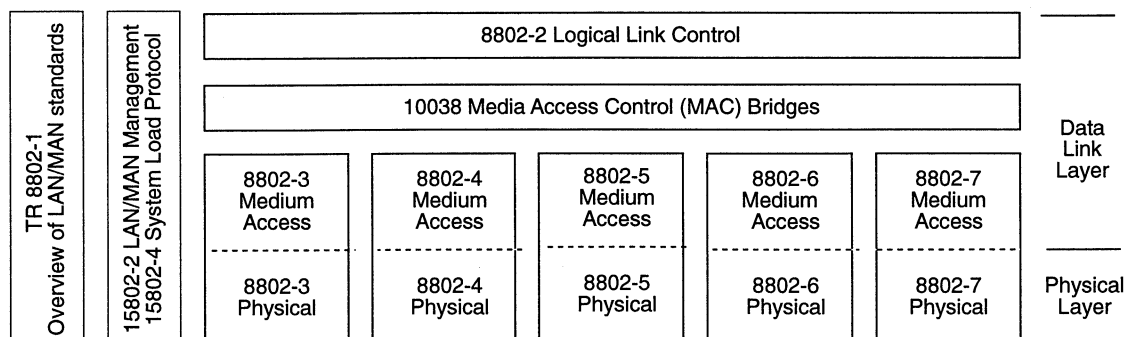
<https://standards.iteh.ai/catalog/standards/sist/b096a9ed-23e2-4167-ab3d-e048c0baeca7/iso-iec-8802-2-1994-amd-3-1995>



International Organization for Standardization/International Electrotechnical Commission
Case postale 56 • CH-1211 Genève 20 • Switzerland

Foreword to ISO/IEC 8802-2:1994/Amd. 3:1995(E)

This International Standard is part of a family of International Standards for Local and Metropolitan Area Networks. The relationship between this International Standard and the other members of the family is shown below. (The numbers in the figure refer to ISO Standard numbers.)



This family of International Standards deals with the Physical and Data Link layers as defined by the ISO Open Systems Interconnection Basic Reference Model (ISO 7498 : 1984). The access standards define five types of medium access technologies and associated physical media, each appropriate for particular applications or system objectives. Other types are under investigation.

The International Standards defining the access technologies are as follows:

- a) ISO/IEC 8802-3 [ANSI/IEEE Std 802.3, 1993 Edition], a bus utilizing CSMA/CD as the access method.
- b) ISO/IEC 8802-4 [ANSI/IEEE Std 802.4-1990], a bus utilizing token passing as the access method.
- c) ISO/IEC 8802-5 [ANSI/IEEE Std 802.5-1992], a ring utilizing token passing as the access method.
- d) ISO/IEC 8802-6 [ANSI/IEEE Std 802.6, 1994 Edition], a dual bus utilizing distributed queuing as the access method.
- e) ISO 8802-7, a ring utilizing slotted ring as the access method.

ISO/IEC TR 8802-1 provides an overview of the LAN/MAN standards, along with details of their document numbering.

ISO/IEC 8802-2 [ANSI/IEEE Std 802.2, 1994 Edition], *Logical link control*, is used in conjunction with the medium access standards to provide the data link layer service to network layer protocols.

ISO/IEC 10038 [ANSI/IEEE Std 802.1D, 1993 Edition], *Media Access Control (MAC) bridges*, specifies an architecture and protocol for the interconnection of IEEE 802 LANs below the level of the logical link control protocol.

ISO/IEC 15802-2 [ANSI/IEEE Std 802.1B, 1995 Edition], *LAN/MAN Management*, defines an Open Systems Interconnection (OSI) management-compatible architecture, and services and protocol elements for use in a LAN/MAN environment for performing remote management.

ISO/IEC 15802-4 [ANSI/IEEE Std 802.1E, 1994 Edition], *System Load Protocol*, specifies a set of services and protocol for those aspects of management concerned with the loading of systems in ISO/IEC LAN/MAN environments.

IEEE P802.2c (Draft IEEE Standard)

This is an unapproved draft of a proposed IEEE Standard, subject to change. Use of information contained in this unapproved draft is at your own risk.

IEEE Standards Department
Copyright and Permissions
445 Hoes Lane
P.O. Box 1331
Piscataway, NJ 08855-1331
USA

IEEE Standards documents are developed within the Technical Committees of the IEEE Societies and the Standards Coordinating Committees of the IEEE Standards Board. Members of the committees serve voluntarily and without compensation. They are not necessarily members of the Institute. The standards developed within IEEE represent a consensus of the broad expertise on the subject within the Institute as well as those activities outside of IEEE that have expressed an interest in participating in the development of the standard.

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. Every IEEE Standard is subjected to review at least every five years for revision or reaffirmation. When a document is more than five years old and has not been reaffirmed, 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.

Comments for revision of IEEE Standards are welcome from any interested party, regardless of membership affiliation with IEEE. Suggestions for changes in documents should be in the form of a proposed change of text, together with appropriate supporting comments.

Interpretations: Occasionally questions may arise regarding the meaning of portions of standards as they relate to specific applications. When the need for interpretations is brought to the attention of IEEE, the Institute will initiate action to prepare appropriate responses. Since IEEE Standards represent a consensus of all concerned interests, it is important to ensure that any interpretation has also received the concurrence of a balance of interests. For this reason IEEE and the members of its technical committees are not able to provide an instant response to interpretation requests except in those cases where the matter has previously received formal consideration.

Comments on standards and requests for interpretations should be addressed to:

Secretary, IEEE Standards Board
445 Hoes Lane
P.O. Box 1331
Piscataway, NJ 08855-1331
USA

IEEE standards documents may involve the use of patented technology. Their approval by the Institute of Electrical and Electronics Engineers does not mean that using such technology for the purpose of conforming to such standards is authorized by the patent owner. It is the obligation of the user of such technology to obtain all necessary permissions.

Contents

CLAUSE	PAGE
Amendment 3: Conformance requirements	1
1.5 Conformance	2
ANNEX	
Annex A (normative) PICS proforma	3
A.1 Introduction	3
A.2 Abbreviations and special symbols	3
A.3 Instructions for completing the PICS proforma	5
A.4 Identification	8
A.5 Major capabilities	9
A.6 LLC Type 1 operation—Unacknowledged connectionless-mode	9
A.7 LLC Type 2 operation—Connection-mode	14
A.8 LLC Type 3 operation—Acknowledged connectionless-mode	17
A.9 Route determination entity	22

[ISO/IEC 8802-2:1994/Amd 3:1995](https://standards.iteh.ai/catalog/standards/sist/b096a9ed-23e2-4167-ab3d-e048c0baeca7/iso-iec-8802-2-1994-amd-3-1995)

<https://standards.iteh.ai/catalog/standards/sist/b096a9ed-23e2-4167-ab3d-e048c0baeca7/iso-iec-8802-2-1994-amd-3-1995>

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

Part 2: Logical link control

Amendment 3: Conformance requirements

NOTE—This amendment is a draft IEEE standard (IEEE P802.2c). When it has completed the IEEE approval process, it will be incorporated into the next edition of ISO/IEC 8802-2.

This amendment provides conformance requirements for ISO/IEC 8802-2 : 1994 [ANSI/IEEE Std 802.2, 1994 Edition]. These items are defined as a series of changes and additions to the existing text of ISO/IEC 8802-2 : 1994; the text therefore assumes all material, including references, abbreviations, definitions, services and protocols contained in the base text. The clause and subclause numbering in the following clauses corresponds to the clause and subclause numbering in the final document (i.e., when these additions are incorporated). Text shown in *bold italics* in the remainder of this document defines the editing instructions necessary to incorporate the changes and additions into ISO/IEC 8802-2 : 1994.

Add the following text to the end of 1.1 as a new paragraph:

“To evaluate conformance of a particular implementation, it is necessary to have a statement of which capabilities and options have been implemented. Such a statement is called a Protocol Implementation Conformance Statement (PICS), as defined in ISO/IEC 9646-1 : 1994. This International Standard provides such a PICS proforma in compliance with the relevant requirements, and in accordance with the relevant guidance given in ISO/IEC 9646-2.”

Add the following two references to 1.3:

“ISO/IEC 9646-1 : 1994, Information technology—Open Systems Interconnection—Conformance testing methodology and framework—Part 1: General concepts.

ISO/IEC 9646-2 : 1994, Information technology—Open Systems Interconnection—Conformance testing methodology and framework—Part 2: Abstract Test Suite specification.”

Add the following text at the end of 1.4.2:

“This International Standard uses the following terms as defined in ISO/IEC 9646-1 : 1994:

protocol implementation conformance statement, PICS
PICS proforma.”

Add a new subclause (1.5) as follows:

1.5 Conformance

1.5.1 Static conformance

1.5.1.1 General requirements

An implementation that claims conformance to this International Standard shall implement the following:

- a) LLC Type 1 operation as specified in 6.9.

1.5.1.2 Optional requirements

An implementation that claims conformance to this International Standard may implement any of the following options:

- a) LLC Type 2 operation, or LLC Type 3 operation, or LLC Type 2 operation and LLC Type 3 operation. LLC Type 2 operation is specified in 7.9, and LLC Type 3 operation is specified in 8.7, or
- b) The flow control technique as specified in annex B, or
- c) Initiation of the Duplicate Address Check procedure as specified in 6.9, or
- d) Initiation of the TEST function as specified in 6.7, or
- e) The RDE as specified in clause 9.

1.5.2 Dynamic conformance

For each function that the PICS states to be supported, the implementation shall exhibit behavior consistent with the implementation of the following:

- a) The corresponding data link layer procedures, and
- b) The encoding of any transmitted frames

as specified in the clauses to which the PICS proforma entry for the function refers.

1.5.3 PICS proforma

The supplier of a protocol implementation that is claimed to conform to this International Standard shall complete a copy of the PICS proforma in annex A, including the information necessary to identify fully both the supplier and the implementation.

Add a new annex A as follows:

Annex A¹

(normative)

PICS proforma

A.1 Introduction

The supplier of a protocol implementation that is claimed to conform to ISO/IEC 8802-2 : 1994 shall complete the following Protocol Implementation Conformance Statement (PICS) proforma.

A completed PICS proforma is the PICS for the implementation in question. The PICS is a statement of which capabilities and options of the protocol have been implemented. The PICS can have a number of uses, including use

- By the protocol implementor, as a checklist to reduce the risk of failure to conform to the standard through oversight
- By the supplier and acquirer, or potential acquirer, of the implementation, as a detailed indication of the capabilities of the implementation, stated relative to the common basis for understanding provided by the standard PICS proforma
- By the user, or potential user, of the implementation, as a basis for initially checking the possibility of interworking with another implementation (note that, while interworking can never be guaranteed, failure to interwork can often be predicted from incompatible PICS proformas)
- By a protocol tester, as the basis for selecting appropriate tests against which to assess the claim for conformance of the implementation

A.2 Abbreviations and special symbols

A.2.1 Status symbols

M	Mandatory field/function
O	Optional field/function
O.<n>	Optional field/function, but support of at least one of the group of options labeled by the same numeral <n> is required
X	Prohibited
<pred>:	Conditional item symbol, including predicate identification (see A.3.4), applicable to a particular item
<pred>::	Conditional item symbol, including predicate identification (see A.3.4), applicable to a table or a group of tables
<item>:	Conditional symbol, status is dependent on the support marked for <item> (see A.3.4)

A.2.2 General abbreviations

N/A	Not applicable
PICS	Protocol Implementation Conformance Statement

¹Copyright release for PICS proformas: Users of this standard may freely reproduce the PICS proforma in this annex so that it can be used for its intended purpose and may further publish the completed PICS.

A.2.3 Item references

The following is a list of item references used in the PICS proforma:

Major capabilities:

CLS	Class of LLC supported
RDE	Route Determination Entity

LLC Type 1:

MIS	Miscellaneous protocol features
TES	TEST PDUs
TSR	Parameters in received TEST PDUs
TST	Parameters in transmitted TEST PDUs
UI	UI PDUs
UIR	Parameters in received UI PDUs
UIT	Parameters in transmitted UI PDUs
XDR	Parameters in received XID PDUs
XDT	Parameters in transmitted XID PDUs
XID	XID PDUs

LLC Type 2:

DIC	DISC PDUs
DMR	DM PDUs
FRR	FRMR PDUs
IC	I_CMD PDUs
IP	I PDUs
IR	I_RSP PDUs
MIS	Miscellaneous protocol features
PPA	Protocol parameters
PPR	Parameters in received PDUs
PPT	Parameters in transmitted PDUs
PRS	Protocol procedures
RJC	REJ_CMD PDUs
RJR	REJ_RSP PDUs
RNC	RNR_CMD PDUs
RNR	RNR_RSP PDUs
RRC	RR_CMD PDUs
RRR	RR_RSP PDUs
SAC	SABME PDUs
UAR	UA PDUs

LLC Type 3:

AnC	ACn command PDUs
A0C	AC0_CMD PDUs
A0P	Parameters in received AC0 PDUs
A0R	AC0_RSP PDUs
A0T	Parameters in transmitted AC0 PDUs
A1C	AC1_CMD PDUs
A1P	Parameters in received AC1 PDUs
A1R	AC1_RSP PDUs