

**Implementation of
ISO/IEC 8802-2 : 1994**

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

Part 2. Logical link control

Committees responsible for this British Standard

The preparation of this British Standard was entrusted to Technical Committee IST/6, Data communications, upon which the following bodies were represented:

British Computer Society
British Telecommunications plc
CCTA (the Government Centre for Information Systems)
Digital Equipment Co. Ltd.
IBM United Kingdom Ltd.
Institution of Electrical Engineers
International Computers Ltd.
Logica UK Ltd.
Nine Tiles Computer Systems Ltd.
Rank Xerox (UK) Ltd.

This British Standard, having been prepared under the direction of the Information Systems Technology Assembly, was published under the authority of the Standards Board and comes into effect on 15 July 1995

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Amendments issued since publication

Amd. No.	Date	Text affected

The following BSI references relate to the work on this standard:
Committee reference IST/6
Drafts for comment 89/64384 DC, 93/641177 DC

ISBN 0 580 24400 8

Implementation of amendment 3
Conformance requirements
published and effective from 15 December 1995
to BS ISO/IEC 8802-2 : 1994

Information technology — Telecommunications and
information exchange between systems — Local and
metropolitan area networks — Specific requirements —
Part 2. Logical link control

National foreword

In line 1 after 'ISO/IEC 8802-4 : 1994' insert 'including Amendment 3'.

AMD 8951/December 1995

ISO/IEC text

Amend the text of the international standard in accordance with the details given on the attached page(s).

AMD 8951/December 1995

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

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

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ISBN 1-55937-523-X

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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

Sponsor

**Technical Committee on Computer Communications
of the
IEEE Computer Society**



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

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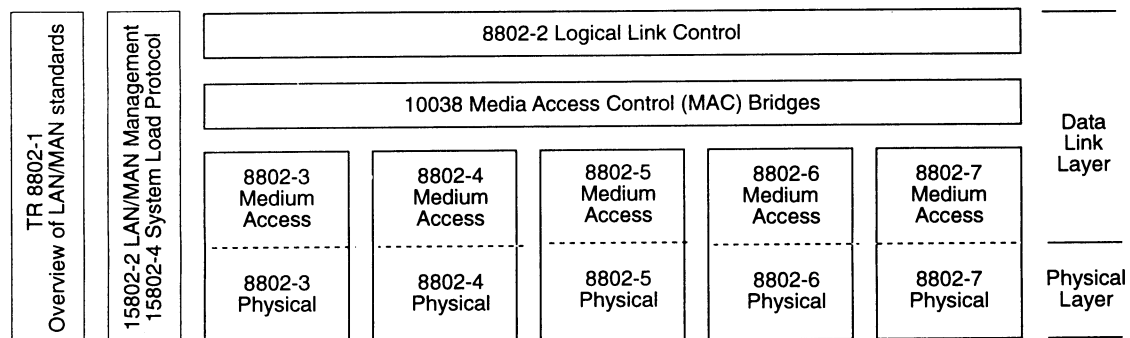
Amendment 3 to International Standard ISO/IEC 8802-2:1994 was prepared by Joint Technical Committee ISO/IEC JTC 1, *Information technology*, Subcommittee SC 6, *Telecommunications and information exchange between systems*.



International Organization for Standardization/International Electrotechnical Commission
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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:

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

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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

A1T	Parameters in transmitted AC1 PDUs
MIS	Miscellaneous protocol features
PPA	Protocol parameters
PRS	Protocol procedures

Route Determination Entity (RDE):

AGEE	Ageing Enabled indicator
AGEF	Ageing Function
F	Parameters in transmitted RDE PDUs
HLD	Route Determination Parameters—Hold
IRPE	Invalid RDE Frames Counter
ISRF	Specifically Routed Frames Counter
IST	Spanning Tree Routed Frames Counter
MNPD	Route Selection Parameters—Minimum PDU Size
MXRD	Route Selection Parameters—Maximum Number of Route Descriptors
MXRT	Route Selection Parameters—Maximum Response Time
RASM	Route Administration
RCR	Route Control Receive specification
RCS	Route Control Send specification
RDEE	Route Determination Parameters—RDE Enabled
RDEP	Discard PDUs on receipt
ROT	Reset on Test
RPL	Route Determination Parameters—Replace
RQC	ROUTE_QUERY_COMMAND PDUs
RQR	ROUTE_QUERY_RESPONSE PDUs
RRST	Route Reset Procedures
RS	ROUTE_SELECTED PDUs
RSSM	Route Selection
STR	Spanning Tree Route parameters
TRR	Route Response Timer
TRS	Route Selection Timer

A.3 Instructions for completing the PICS proforma**A.3.1 General structure of the PICS proforma**

The first part of the PICS proforma, Implementation Identification and Protocol Summary, is to be completed as indicated with the information necessary to identify fully both the supplier and the implementation.

The main part of the PICS proforma is a fixed-format questionnaire, divided into subclauses, each containing a number of individual items. Answers to the questionnaire items are to be provided in the rightmost column, either by simply marking an answer to indicate a restricted choice (usually Yes, No, or N/A for Not Applicable) or by entering a value or a set or range of values.

NOTE—There are some items for which two or more choices from a set of possible answers can apply. All relevant choices are to be marked in these cases.

Each item is identified by an item reference in the first column. The second column contains the questions to be answered. The third column contains the reference or references to the material that specifies the item in the main body of ISO/IEC 8802-2 : 1994. The remaining columns record the status of the item, i.e., whether

support is mandatory, optional, prohibited or conditional, and provide the space for the answers; see also A.3.4.

A supplier may also provide, or be required to provide, further information, categorized as either Additional Information or Exception Information. When present, each kind of further information is to be provided in a further subclause of items labeled A<*i*> or X<*i*>, respectively, for cross-referencing purposes, where <*i*> is an unambiguous identification for the item (e.g., simply a numeral). There are no other restrictions on its format or presentation.

A completed PICS proforma, including any Additional Information and Exception Information, is the Protocol Implementation Conformance Statement for the implementation in question.

NOTE—Where an implementation is capable of being configured in more than one way, a single PICS may be able to describe all such configurations. However, the supplier has the choice of providing more than one PICS, each covering some subset of the implementation's configuration capabilities, if this makes for easier and clearer presentation of the information.

A.3.2 Additional information

Items of Additional Information allow a supplier to provide further information intended to assist the interpretation of the PICS. It is not intended or expected that a large quantity of information will be supplied and a PICS can be considered complete without any such information. Examples of Additional Information might be an outline of the ways in which a (single) implementation can be set up to operate in a variety of environments and configurations, or a brief rationale, based perhaps upon specific application requirements, for the exclusion of features that, although optional, are commonly present in implementations of the ISO/IEC 8802-2 : 1994 protocol.

References to items of Additional Information may be entered next to any answer in the questionnaire, and may be included in items of Exception Information.

A.3.3 Exception information

It may happen occasionally that a supplier will wish to answer an item with mandatory or prohibited status (after any conditions have been applied) in a way that conflicts with the indicated requirement. No pre-printed answer will be found in the Support column for this. Instead, the supplier shall write the missing answer into the Support column, together with an X<*i*> reference to an item of Exception Information, and shall provide the appropriate rationale in the Exception Information item itself.

An implementation for which an Exception Information item is required in this way does not conform to ISO/IEC 8802-2 : 1994.

NOTE—A possible reason for the situation described above is that a defect in ISO/IEC 8802-2 : 1994 has been reported, a correction for which is expected to change the requirement not met by the implementation.

A.3.4 Conditional status

A.3.4.1 Conditional items

The PICS proforma contains a number of conditional items. These are items for which the status (mandatory, optional or prohibited) that applies is dependent upon whether or not certain other items are supported, or upon the values supported for other items.

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In many cases, whether or not the item applies at all is conditional in this way, as well as the status when the item does apply.

Where a group of items is subject to the same condition for applicability, a separate preliminary question about the condition appears at the head of the group, with an instruction to skip to a later point in the questionnaire if the “Not Applicable” answer is selected. Otherwise, individual conditional items are indicated by one or more conditional symbols (on separate lines) in the status column.

A conditional symbol is of the form “<pred>:<s>” where “<pred>” is a predicate as described in A.3.4.2 below, and “<s>” is one of the status symbols M, O, O.<n>, or X.

If the value of the predicate in any line of a conditional item is true (see A.3.4.2), then the conditional item is applicable, and its status is that indicated by the status symbol following the predicate; the answer column is to be marked in the usual way. If the value of a predicate is false, the Not Applicable (N/A) answer is to be marked in the relevant line. Each line in a multi-line conditional item should be marked: at most one line will require an answer other than N/A.

A conditional symbol of the form “<pred>:.” where “<pred>” is a predicate as described in A.3.4.2 below, may precede a table or a group of tables in a clause or a subclause. If the value of the predicate is true, answers shall be marked in the table or group of tables. Otherwise, the table or group of tables shall be skipped.

A.3.4.2 Predicates

A predicate is one of the following:

- An item-reference for an item in the PICS proforma: the value of the predicate is true if the item is marked as supported, and is false otherwise.
- A predicate name, for a predicate defined elsewhere in the PICS proforma (usually in the Major Capabilities section or at the end of the section containing the conditional item): see below.
- The logical negation symbol “Ø” prefixed to an item-reference or predicate name: the value of the predicate is true if the value of the predicate formed by omitting the “Ø” symbol is false, and vice versa.

A.3.4.2.1 The definition for a predicate name

The definition for a predicate name is one of the following:

- An item-reference, evaluated as at A.3.4.2a), or
- A relation containing a comparison operator (=, >, etc.) with at least one of its operands being an item-reference for an item taking numerical values as its answer; the predicate is true if the relation holds when each item-reference is replaced by the value entered in the support column as answer to the item referred to, or
- A boolean expression constructed by combining simple predicates, as in a) and b), using the boolean operators AND, OR and NOT, and parentheses, in the usual way; the value of such a predicate is true if the boolean expression evaluates to true when the simple predicates are interpreted as described above.

Each item whose reference is used in a predicate or predicate definition is indicated by an asterisk in the Item column.

A.3.5 Identification of requirements

The information in the PICS proforma does not supersede or augment the conformance requirements in the main body of ISO/IEC 8802-2 : 1994.

A.4 Identification

A.4.1 Implementation identification

Supplier	
Contact point for queries about the PICS	
Implementation Name(s) and Version(s)	
Other information necessary for full identification, e.g. name(s) and version(s) of machines and/or operating system(s), system names	

NOTES

1—Only the first three items are required for all implementations. Other information may be completed as appropriate in meeting the requirement for full identification.

2—The terms Name and Version should be interpreted appropriately to correspond with a supplier's terminology (e.g. Type, Series, Model etc.).

A.4.2 Protocol summary, ISO/IEC 8802-2 : 1994 [ANSI/IEEE Std 802.2, 1994 Edition]

Identification of Protocol Standard	ISO/IEC 8802-2 : 1994 [ANSI/IEEE Std 802.2, 1994 Edition]
Identification of Amendments and Corrigenda to this PICS proforma that have been completed as part of this PICS	ISO/IEC 8802-2 : 1994 [ANSI/IEEE Std 802.2, 1994 Edition] Amd. : Corr. : Amd. : Corr. :
Have any Exception items been required (see A.3.3)? Yes ☐ No ☐ (The answer Yes means that the implementation does not conform to ISO/IEC 8802-2 : 1994 [ANSI/IEEE Std 802.2, 1994 Edition]).	

Date of statement (dd/mm/yy)	
------------------------------	--

A.5 Major capabilities

Item	Protocol feature	References	Status	Support	
*CLS1a	Is Class I LLC supported?	4.2	O.1	Yes ☐	No ☐
CLS1b	Are LLC Type 1 procedures supported?	4.2	CLS1a:M	N/A ☐	Yes ☐
*CLS2a	Is Class II LLC supported?	4.2	O.1	Yes ☐	No ☐
CLS2b	Are LLC Type 1 and Type 2 procedures supported?	4.2	CLS2a:M	N/A ☐	Yes ☐
*CLS3a	Is Class III LLC supported?	4.2	O.1	Yes ☐	No ☐
CLS3b	Are LLC Type 1 and Type 3 procedures supported?	4.2	CLS3a:M	N/A ☐	Yes ☐
*CLS4a	Is Class IV LLC supported?	4.2	O.1	Yes ☐	No ☐
CLS4b	Are LLC Type 1, Type 2, and Type 3 procedures supported?	4.2	CLS4a:M	N/A ☐	Yes ☐
*RDE	Is Route Determination supported?	9	O	Yes ☐	No ☐

A.6 LLC Type 1 operation—Unacknowledged connectionless-mode

CLS1a or CLS2a or CLS3a or CLS4a::

All tables in clause A.6 are to be completed if above predicate evaluates to true.

A.6.1 LLC Type 1—Supported PDU types

Item	Protocol feature/ Supported PDU types	References	Status	Support	
UI/1	UI_CMD supported on transmission	6.1, 6.5.1	M	Yes ☐	
UI/2	UI_CMD supported on receipt	6.1, 6.5.2	M	Yes ☐	
*XID/3	XID_CMD supported on transmission	6.6	O	Yes ☐	No ☐
XID/4	XID_CMD supported on receipt	6.6	M	Yes ☐	
XID/5	XID_RSP supported on transmission	6.6	M	Yes ☐	
XID/6	XID_RSP supported on receipt	6.6	XID/3:M	N/A ☐	Yes ☐
*TES/7	TEST_CMD supported on transmission	6.7	O	Yes ☐	No ☐
TES/8	TEST_CMD supported on receipt	6.7	M	Yes ☐	
TES/9	TEST_RSP supported on transmission	6.7	M	Yes ☐	
TES/10	TEST_RSP supported on receipt	6.7	TES/7:M	N/A ☐	Yes ☐

A.6.2 LLC Type 1—Supported parameters in PDUs on transmission

Item	Protocol feature/ Supported parameters on transmission	References	Status	Support
UIT/11	UI_CMD—DSAP address	6.2	M	Yes ☐
UIT/12	UI_CMD—SSAP address	6.2	M	Yes ☐
UIT/13	UI_CMD—P-bit = 0	6.3	M	Yes ☐
UIT/14	UI_CMD—Information	3.3	O	Yes ☐ No ☐
XDT/15	XID_CMD—DSAP address	6.2, 6.6	XID/3:M	N/A ☐ Yes ☐
XDT/16	XID_CMD—SSAP address	6.2, 6.6	XID/3:M	N/A ☐ Yes ☐
XDT/17	XID_CMD—P-bit = 1	6.3	XID/3:O.2	N/A ☐ Yes ☐ No ☐
XDT/18	XID_CMD—P-bit = 0	6.3	XID/3:O.2	N/A ☐ Yes ☐ No ☐
XDT/19	XID_CMD—Information	5.4.1.1.2, 6.6	XID/3:M	N/A ☐ Yes ☐
XDT/20	XID_RSP—DSAP address	6.2, 6.6	M	Yes ☐
XDT/21	XID_RSP—SSAP address	6.2, 6.6	M	Yes ☐
XDT/22	XID_RSP—F-bit = P-bit	6.3	M	Yes ☐
XDT/23	XID_RSP—Information	5.4.1.2.1, 6.6	M	Yes ☐
TST/24	TEST_CMD—DSAP address	6.2	TES/7:M	N/A ☐ Yes ☐
TST/25	TEST_CMD—SSAP address	6.2	TES/7:M	N/A ☐ Yes ☐
TST/26	TEST_CMD—P-bit = 1	6.3	TES/7:O.3	N/A ☐ Yes ☐ No ☐
TST/27	TEST_CMD—P-bit = 0	6.3	TES/7:O.3	N/A ☐ Yes ☐ No ☐
*TST/28	TEST_CMD—Information	5.4.1.1.3, 6.7	TES/7:O	N/A ☐ Yes ☐ No ☐
TST/29	TEST_RSP—DSAP address	6.2	M	Yes ☐
TST/30	TEST_RSP—SSAP address	6.2	M	Yes ☐
TST/31	TEST_RSP—F-bit = P-bit	6.3	M	Yes ☐
TST/32	TEST_RSP—Information	5.4.1.2.2, 6.7	M	Yes ☐

A.6.3 LLC Type 1—Supported parameters in PDUs on receipt

Item	Protocol feature/ Supported parameters on receipt	References	Status	Support
UIR/33	UI_CMD—DSAP address	6.2	M	Yes ☐
UIR/34	UI_CMD—SSAP address	6.2	M	Yes ☐
UIR/35	UI_CMD—P-bit = 0	6.3	M	Yes ☐
UIR/36	UI_CMD—Information	3.3	O	Yes ☐ No ☐
XDR/37	XID_CMD—DSAP address	6.2, 6.6	M	Yes ☐
XDR/38	XID_CMD—SSAP address	6.2, 6.6	M	Yes ☐
XDR/39	XID_CMD—P-bit = 1	6.3	M	Yes ☐
XDR/40	XID_CMD—P-bit = 0	6.3	M	Yes ☐
XDR/41	XID_CMD—Information	5.4.1.1.2, 6.6	M	Yes ☐
XDR/42	XID_RSP—DSAP address	6.2, 6.6	M	Yes ☐
XDR/43	XID_RSP—SSAP address	6.2, 6.6	M	Yes ☐
XDR/44	XID_RSP—F-bit = P-bit	6.3	M	Yes ☐
XDR/45	XID_RSP—Information	5.4.1.2.1, 6.6	M	Yes ☐
TSR/46	TEST_CMD—DSAP address	6.2	M	Yes ☐
TSR/47	TEST_CMD—SSAP address	6.2	M	Yes ☐
TSR/48	TEST_CMD—P-bit = 1	6.3	M	Yes ☐
TSR/49	TEST_CMD—P-bit = 0	6.3	M	Yes ☐
TSR/50	TEST_CMD—Information	5.4.1.1.3, 6.7	M	Yes ☐
TSR/51	TEST_RSP—DSAP address	6.2	M	Yes ☐
TSR/52	TEST_RSP—SSAP address	6.2	M	Yes ☐
TSR/53	TEST_RSP—F-bit = P-bit	6.3	M	Yes ☐
TSR/54	TEST_RSP—Information	5.4.1.2.2, 6.7	TST/28:M	N/A ☐ Yes ☐

A.6.4 LLC Type 1—Miscellaneous

Item	Protocol feature/ Miscellaneous	References	Status	Support
MIS/55	Do all transmitted PDUs contain an integral number of octets?	3.3	M	Yes ☐
MIS/56	If the following PDUs are received from the MAC sublayer, are they treated as invalid and ignored: —contains a non-integral number of octets	3.3.4	M	Yes ☐
MIS/57	—has a length less than 3 octets	3.3.4	M	Yes ☐
MIS/58 MIS/59 MIS/60 MIS/61	Which of the following addresses are supported in the DSAP address field of UI PDUs? —individual address —group address —global address —null address	5.4.1.1.1 5.4.1.1.1 5.4.1.1.1 5.4.1.1.1	O.4 O.4 O.4 O.4	Yes ☐ No ☐ Yes ☐ No ☐ Yes ☐ No ☐ Yes ☐ No ☐
MIS/62	Is the address in the SSAP address field of a UI PDU the originator's individual address?	5.4.1.1.1	M	Yes ☐
MIS/63	Are all UI PDUs transmitted as UI_CMD PDUs?	6.5.1	M	Yes ☐
MIS/64	Are all UI_CMD PDUs transmitted with the P-bit = 0?	6.5.1	M	Yes ☐
MIS/65	If a UI_RSP PDU is received, is the frame discarded?	6.5.2	M	Yes ☐
MIS/66 MIS/67 MIS/68 MIS/69	Which of the following addresses are supported in the DSAP address field of XID_CMD PDUs? —individual address —group address —global address —null address	5.4.1.1.2 5.4.1.1.2 5.4.1.1.2 5.4.1.1.2	XID/3:O.5 XID/3:O.5 XID/3:O.5 XID/3:O.5	N/A ☐ Yes ☐ No ☐ N/A ☐ Yes ☐ No ☐ N/A ☐ Yes ☐ No ☐ N/A ☐ Yes ☐ No ☐
MIS/70 MIS/71	Which of the following addresses are supported in the SSAP address field of XID_CMD PDUs? —individual address —null address	5.4.1.1.2 5.4.1.1.2	XID/3:O.6 XID/3:O.6	N/A ☐ Yes ☐ No ☐ N/A ☐ Yes ☐ No ☐
MIS/72 MIS/73	Which of the following addresses are supported in the DSAP address field of XID_RSP PDUs? —individual address —null address	5.4.1.2.1 5.4.1.2.1	M M	Yes ☐ Yes ☐
MIS/74 MIS/75	Which of the following addresses are supported in the SSAP address field of XID_RSP PDUs? —individual address —null address	5.4.1.2.1 5.4.1.2.1	M M	Yes ☐ Yes ☐

Item	Protocol feature/ Miscellaneous	References	Status	Support
(Con'd.)				
MIS/76	Which of the following addresses are supported in the DSAP address field of TEST_CMD PDUs?	5.4.1.1.3	TES/7:O.7	N/A ☐ Yes ☐ No ☐
MIS/77	— individual address	5.4.1.1.3	TES/7:O.7	N/A ☐ Yes ☐ No ☐
MIS/78	— group address	5.4.1.1.3	TES/7:O.7	N/A ☐ Yes ☐ No ☐
MIS/79	— global address	5.4.1.1.3	TES/7:O.7	N/A ☐ Yes ☐ No ☐
	Which of the following addresses are supported in the SSAP address field of TEST_CMD PDUs?			
MIS/80	— individual address	5.4.1.1.3	TES/7:O.8	N/A ☐ Yes ☐ No ☐
MIS/81	— null address	5.4.1.1.3	TES/7:O.8	N/A ☐ Yes ☐ No ☐
MIS/82	Which of the following addresses are supported in the DSAP address field of TEST_RSP PDUs?	5.4.1.2.2	M	Yes ☐
MIS/83	— individual address	5.4.1.2.2	M	Yes ☐
	Which of the following addresses are supported in the SSAP address field of TEST_RSP PDUs?			
MIS/84	— individual address	5.4.1.2.2	M	Yes ☐
MIS/85	— null address	5.4.1.2.2	M	Yes ☐
*MIS/86	Is Duplicate Address Checking supported?	6.9.2	O	Yes ☐ No ☐
MIS/87	—Is the ACK_TIMER function supported?	6.9.2	MIS/86:M	Yes ☐
MIS/88	—ACK_TIMER range (seconds)			Minimum Value = Maximum Value =
MIS/89	—Is the RETRY_COUNTER function supported?	6.9.2	MIS/86:M	Yes ☐
MIS/90	—RETRY_COUNTER range			Minimum Value = Maximum Value =
MIS/91	—Is the XID_R_COUNTER function supported?	6.9.2	MIS/86:M	Yes ☐

A.7 LLC Type 2 operation—Connection-mode

CLS2a or CLS4a::

All tables in clause A.7 are to be completed if above predicate evaluates to true.

A.7.1 LLC Type 2—Supported PDU types

Item	Protocol feature/ Supported PDU types	References	Status	Support
*IP/92a	I PDU supported on transmission	7.4.2	O	Yes ☐ No ☐
*IC/92b	I_CMD supported on transmission	Table 4	IP/92a:O	N/A ☐ Yes ☐ No ☐
IC/93	I_CMD supported on receipt	Table 4	M	Yes ☐
IR/94	I_RSP supported on transmission	Table 4	IP/92a:M	N/A ☐ Yes ☐
IR/95	I_RSP supported on receipt	Table 4	M	Yes ☐
RRC/96	RR_CMD supported on transmission	Table 4	M	Yes ☐
RRC/97	RR_CMD supported on receipt	Table 4	M	Yes ☐
RRR/98	RR_RSP supported on transmission	Table 4	M	Yes ☐
RRR/99	RR_RSP supported on receipt	Table 4	M	Yes ☐
RNC/100	RNR_CMD supported on transmission	Table 4	M	Yes ☐
RNC/101	RNR_CMD supported on receipt	Table 4	M	Yes ☐
RNR/102	RNR_RSP supported on transmission	Table 4	M	Yes ☐
RNR/103	RNR_RSP supported on receipt	Table 4	M	Yes ☐
*RJC/104	REJ_CMD supported on transmission	Table 4	O	Yes ☐ No ☐
RJC/105	REJ_CMD supported on receipt	Table 4	M	Yes ☐
RJR/106	REJ_RSP supported on transmission	Table 4	M	Yes ☐
RJR/107	REJ_RSP supported on receipt	Table 4	M	Yes ☐
SAC/108	SABME_CMD supported on transmission	Table 4	M	Yes ☐
SAC/109	SABME_CMD supported on receipt	Table 4	M	Yes ☐
DIC/110	DISC_CMD support on transmission	Table 4	M	Yes ☐
DIC/111	DISC_CMD supported on receipt	Table 4	M	Yes ☐
UAR/112	UA_RSP supported on transmission	Table 4	M	Yes ☐
UAR/113	UA_RSP supported on receipt	Table 4	M	Yes ☐
DMR/114	DM_RSP supported on transmission	Table 4	M	Yes ☐
DMR/115	DM_RSP supported on receipt	Table 4	M	Yes ☐
FRR/116	FRMR_RSP supported on transmission	Table 4	M	Yes ☐
FRR/117	FRMR_RSP supported on receipt	Table 4	M	Yes ☐

A.7.2 LLC Type 2—Supported parameters in PDUs on transmission

Item	Protocol feature/ Supported parameters on transmission	References	Status	Support
PPT/118a PPT/118b PPT/119 PPT/120	Do the following PDUs contain a DSAP address, an SSAP address and a Control field as specified in the given referenced clauses? —I_CMD —I_RSP —REJ_CMD —RR_CMD, RR_RSP, RNR_CMD, RNR_RSP, REJ_RSP, SABME_CMD, DISC_CMD, UA_RSP, DM_RSP, FRMR_RSP	3.2, 3.3, 5.4 3.2, 3.3, 5.4 3.2, 3.3, 5.4 3.2, 3.3, 5.4	IC/92b:M IP/92a:M RJC/104:M M	N/A ☐ Yes ☐ N/A ☐ Yes ☐ N/A ☐ Yes ☐ Yes ☐
PPT/121	Do the following PDUs contain an information field? —I_CMD, I_RSP, FRMR_RSP	3.2, 3.3, 5.4	M	Yes ☐
PPT/122	Do the following PDUs contain an information field? —REJ_CMD, RR_CMD, RR_RSP, RNR_CMD, RNR_RSP, REJ_RSP, SABME_CMD, DISC_CMD, UA_RSP, DM_RSP	3.2, 5.4	X	No ☐

A.7.3 LLC Type 2—Supported parameters in PDUs on receipt

Item	Protocol feature/ Supported parameters on receipt	References	Status	Support
PPR/123	Is the receipt of a DSAP, an SSAP and a Control field supported for the following PDUs? —I_CMD, I_RSP, RR_CMD, RR_RSP, RNR_CMD, RNR_RSP, REJ_CMD, REJ_RSP, SABME_CMD, DISC_CMD, UA_RSP, DM_RSP, FRMR_RSP	3.2, 3.3, 5.4	M	Yes ☐
PPR/124	Is the receipt of an Information field supported for the following PDUs? —I_CMD, I_RSP, FRMR_RSP NOTE—Response to receipt of a PDU with an Information field that is not permitted to have an Information field is covered under Frame Reject procedures.	3.2, 3.3, 5.4	M	Yes ☐

A.7.4 LLC Type 2—Supported procedures

Item	Protocol feature/ Supported procedures	References	Status	Support
PRS/125 PRS/126	Support of Connection Establishment —as initiator —as responder	7.4.1, 7.4.5 7.4.1, 7.4.5	O M	Yes ☐ No ☐ Yes ☐
PRS/127 PRS/128 PRS/129	Support of Connection Release —as initiator (originating release) —as initiator (rejecting connection establishment) —as responder	7.4.3, 7.4.4, 7.4.5 7.4.3, 7.4.4, 7.4.5 7.4.3, 7.4.4, 7.4.5	O M M	Yes ☐ No ☐ Yes ☐ Yes ☐
PRS/130 PRS/131	Support of Data Transfer —as originator —as responder	7.4.2, 7.5 7.4.2, 7.5	O M	Yes ☐ No ☐ Yes ☐
PRS/132	Is the Remote Busy procedure supported on receipt of an RNR PDU?	7.5.7	M	Yes ☐
PRS/133	Is the Retransmission procedure supported on receipt of an REJ PDU?	7.5.6	M	Yes ☐
PRS/134	Is the Reject procedure supported on receipt of an I PDU with an unexpected N(S)?	7.4.2, 7.5	M	Yes ☐
PRS/135	Is the Local Busy procedure supported?	7.5.8	M	Yes ☐
PRS/136	Is the Frame Reject procedure supported?	5.4.2.3.5	M	Yes ☐
PRS/137 PRS/138	Is the Reset procedure supported? —as initiator —as responder	7.5, 7.6, 7.7 7.5, 7.6, 7.7	M M	Yes ☐ Yes ☐
*PRS/139	Is the LLC Flow Control procedure supported?	Annex B	O	Yes ☐ No ☐

A.7.5 LLC Type 2—Miscellaneous

Item	Protocol feature/ Miscellaneous	References	Status	Support
MIS/140	Do all transmitted PDUs contain an integral number of octets?	3.3	M	Yes ☐
MIS/141 MIS/142	If the following PDUs are received from the MAC sublayer, are they treated as invalid and ignored? —contains a non-integral number of octets —has a length less than 3 octets (in the case of a one-octet control field)	3.3.4 3.3.4	M M	Yes ☐ Yes ☐
MIS/143	—has a length less than 4 octets (in the case of a two-octet control field)	3.3.4	M	Yes ☐

A.7.6 LLC Type 2—Protocol parameters

Item	Protocol feature/ Protocol parameters	References	Status	Support/Value
PPA/144 PPA/145	Is the ACK_TIMER function implemented? —ACK_TIMER range	7.8.1.1	M	Yes ☐ Minimum Value = Maximum Value =
PPA/146 PPA/147	Is the P_TIMER function implemented? —P_TIMER range	7.8.1.2	M	Yes ☐ Minimum Value = Maximum Value =
PPA/148 PPA/149	Is the REJ_TIMER function implemented? —REJ_TIMER range	7.8.1.3	M	Yes ☐ Minimum Value = Maximum Value =
PPA/150 PPA/151	Is the BUSY_TIMER function implemented? —BUSY_TIMER range	7.8.1.4	M	Yes ☐ Minimum Value = Maximum Value =
PPA/152 PPA/153	Is the N2 (Maximum Number of Transmissions) function implemented? —Number of Transmissions	7.8.2	M	Yes ☐ Minimum Value = Maximum Value =
PPA/154 PPA/155	Is the k (Transmit Window Size) function implemented? —Maximum value of k	7.8.4	M	Yes ☐ Value =
PPA/156 PPA/157a	Is the LLC flow control function implemented? —kstep range	Annex B	PRS/139:M	N/A ☐ Yes ☐ Minimum Value = Maximum Value =
PPA/157b PPA/157c	Is the RW (Receive Window Size) function implemented? —Maximum value of RW	7.8.6	M	Yes ☐ Value =

A.8 LLC Type 3 operation—Acknowledged connectionless-mode

CLS3a or CLS4a::

All tables in clause A.8 are to be completed if above predicate evaluates to true.

A.8.1 LLC Type 3—Supported PDU types

Item	Protocol feature/ Supported PDU types	References	Status	Support
*AnC/158a	Are ACn commands transmitted?	8.5.1	O	Yes ☐ No ☐
A0C/158b	AC0_CMD supported on transmission	8.5.1	AnC/158a:M	N/A ☐ Yes ☐
A0C/159	AC0_CMD supported on receipt	8.5.2	M	Yes ☐
A0R/160	AC0_RSP supported on transmission	8.5.3	M	Yes ☐
A0R/161	AC0_RSP supported on receipt	8.5.4	AnC/158a:M	N/A ☐ Yes ☐
A1C/162	AC1_CMD supported on transmission	8.5.1	AnC/158a:M	N/A ☐ Yes ☐
A1C/163	AC1_CMD supported on receipt	8.5.2	M	Yes ☐
A1R/164	AC1_RSP supported on transmission	8.5.3	M	Yes ☐
A1R/165	AC1_RSP supported on receipt	8.5.4	AnC/158a:M	N/A ☐ Yes ☐

A.8.2 LLC Type 3—Supported parameters in PDUs on transmission

Item	Protocol feature/ Supported parameters on transmission	Refer- ences	Status	Support
A0T/166	AC0_CMD—DSAP address	8.2	AnC/158a:M	N/A ☐ Yes ☐
A0T/167	AC0_CMD—SSAP address	8.2	AnC/158a:M	N/A ☐ Yes ☐
A0T/168	AC0_CMD— —P-bit = 1 and non-null Information field	8.3	AnC/158a:O.9	N/A ☐ Yes ☐ No ☐
A0T/169	—P-bit = 1 and null Information field	8.3	AnC/158a:O.9	N/A ☐ Yes ☐ No ☐
A0T/170	AC0_CMD— —P-bit = 0 and non-null Information field	8.3	AnC/158a:O.9	N/A ☐ Yes ☐ No ☐
A0T/171	—P-bit = 0 and null Information field	8.3	AnC/158a:O.9	N/A ☐ Yes ☐ No ☐
A1T/172	AC1_CMD—DSAP address	8.2	AnC/158a:M	N/A ☐ Yes ☐
A1T/173	AC1_CMD—SSAP address	8.2	AnC/158a:M	N/A ☐ Yes ☐
A1T/174	AC1_CMD— —P-bit = 1 and non-null Information field	8.3	AnC/158a:O.10	N/A ☐ Yes ☐ No ☐
A1T/175	—P-bit = 1 and null Information field	8.3	AnC/158a:O.10	N/A ☐ Yes ☐ No ☐
A1T/176	AC1_CMD— —P-bit = 0 and non-null Information field	8.3	AnC/158a:O.10	N/A ☐ Yes ☐ No ☐
A1T/177	—P-bit = 0 and null Information field	8.3	AnC/158a:O.10	N/A ☐ Yes ☐ No ☐

Item	Protocol feature/ Supported parameters on transmission	Refer- ences	Status	Support
(Con'd.) A0T/178	AC0_RSP—DSAP address	8.2	M	Yes ☐
A0T/179	AC0_RSP—SSAP address	8.2	M	Yes ☐
A0T/180	AC0_RSP—F-bit = P-bit (= 1) —with Status Subfield and non-null LSDU Subfield	8.3	O	Yes ☐ No ☐
A0T/181	—with Status Subfield and null LSDU Subfield	8.3	M	Yes ☐
A0T/182	AC0_RSP—F-bit = P-bit (= 0) —with Status Subfield and non-null LSDU Subfield	8.3	X	No ☐
A0T/183	—with Status Subfield and null LSDU Subfield	8.3	M	Yes ☐
A1T/184	AC1_RSP—DSAP address	8.2	M	Yes ☐
A1T/185	AC1_RSP—SSAP address	8.2	M	Yes ☐
A1T/186	AC1_RSP—F-bit = P-bit (= 1) —with Status Subfield and non-null LSDU Subfield	8.3	O	Yes ☐ No ☐
A1T/187	—with Status Subfield and null LSDU Subfield	8.3	M	Yes ☐
A1T/188	AC1_RSP—F-bit = P-bit (= 0) —with Status Subfield and non-null LSDU Subfield	8.3	X	No ☐
A1T/189	—with Status Subfield and null LSDU Subfield	8.3	M	Yes ☐

A.8.3 LLC Type 3—Supported parameters in PDUs on receipt

Item	Protocol feature/ Supported parameters on receipt	References	Status	Support
A0P/190	AC0_CMD—DSAP address	8.1, 8.2	M	Yes ☐
A0P/191	AC0_CMD—SSAP address	8.1, 8.2	M	Yes ☐
A0P/192	AC0_CMD— —P-bit = 1 and non-null Information field	8.1, 8.3	M	Yes ☐
A0P/193	—P-bit = 1 and null Information field	8.1, 8.3	M	Yes ☐
A0P/194	AC0_CMD— —P-bit = 0 and non-null Information field	8.1, 8.3	M	Yes ☐
A0P/195	—P-bit = 0 and null Information field	8.1, 8.3	M	Yes ☐
A1P/196	AC1_CMD—DSAP address	8.1, 8.2	M	Yes ☐
A1P/197	AC1_CMD—SSAP address	8.1, 8.2	M	Yes ☐
A1P/198	AC1_CMD— —P-bit = 1 and non-null Information field	8.1, 8.3	M	Yes ☐
A1P/199	—P-bit = 1 and null Information field	8.1, 8.3	M	Yes ☐
A1P/200	AC1_CMD— —P-bit = 0 and non-null Information field	8.1, 8.3	M	Yes ☐
A1P/201	—P-bit = 0 and null Information field	8.1, 8.3	M	Yes ☐
A0P/202	AC0_RSP—DSAP address	8.1, 8.2	M	Yes ☐
A0P/203	AC0_RSP—SSAP address	8.1, 8.2	M	Yes ☐
A0P/204	AC0_RSP—F-bit = P-bit (= 1) —with Status Subfield and non-null LSDU Subfield	8.1, 8.3	M	Yes ☐
A0P/205	—with Status Subfield and null LSDU Subfield	8.1, 8.3	M	Yes ☐
A0P/206	AC0_RSP—F-bit = P-bit (= 0) —with Status Subfield and non-null LSDU Subfield	8.1, 8.3, 8.7.2	M	Yes ☐
A0P/207	—with Status Subfield and null LSDU Subfield	8.1, 8.3	M	Yes ☐
A1P/208	AC1_RSP—DSAP address	8.1, 8.2	M	Yes ☐
A1P/209	AC1_RSP—SSAP address	8.1, 8.2	M	Yes ☐
A1P/210	AC1_RSP—F-bit = P-bit (= 1) —with Status Subfield and non-null LSDU Subfield	8.1, 8.3	M	Yes ☐
A1P/211	—with Status Subfield and null LSDU Subfield	8.1, 8.3	M	Yes ☐
A1P/212	AC1_RSP—F-bit = P-bit (= 0) —with Status Subfield and non-null LSDU Subfield	8.1, 8.3, 8.7.2	M	Yes ☐
A1P/213	—with Status Subfield and null LSDU Subfield	8.1, 8.3	M	Yes ☐

A.8.4 LLC Type 3—Supported procedures

Item	Protocol feature/ Supported procedures	References	Status	Support
PRS/214	Is the procedure for Sequence Number Resynchronization supported?	8.4, 8.4.1	AnC/158a:O	N/A ☐ Yes ☐ No ☐
PRS/215a	Is the procedure for Destruction of a Transmit Sequence State Variable V(SI) supported?	8.4, 8.4.2	AnC/158a:O	N/A ☐ Yes ☐ No ☐
PRS/215b	Is the procedure for Destruction of a Receive Sequence State Variable V(RI) and Reception Status State Variable V(RB) supported?	8.4, 8.4.3	O	Yes ☐ No ☐
PRS/216	Are the procedures for Information Transfer supported? —for the general MAC capabilities case	8.5, 8.5.1, 8.5.2.1, 8.5.3, 8.5.4.1	O.11	Yes ☐ No ☐
PRS/217	—for the certain special MAC capabilities case	8.5, 8.5.1, 8.5.2.2, 8.5.3, 8.5.4.2	O.11	Yes ☐ No ☐

A.8.5 LLC Type 3—Miscellaneous

Item	Protocol feature/ Miscellaneous	References	Status	Support
MIS/218	Do all transmitted PDUs contain an integral number of octets?	3.3	M	Yes ☐
MIS/219	If the following PDUs are received from the MAC sublayer, are they treated as invalid and ignored?	3.3.4	M	Yes ☐
MIS/220	—contains a non-integral number of octets —has a length less than 3 octets	3.3.4	M	Yes ☐
	NOTE—The reception of an AC0_RSP or AC1_RSP with bit 8 of the Control Field equal to V(SI) is covered in items PRS/216 and PRS/217.			
MIS/221	Which of the following addresses are supported in the DSAP address field of AC0_CMD and AC1_CMD PDUs?	5.4.3.1	O.12	Yes ☐ No ☐
MIS/222	—individual address	5.4.3.1	O.12	Yes ☐ No ☐
MIS/223	—group address	5.4.3.1	O.12	Yes ☐ No ☐
MIS/224	—global address			
MIS/224	Is the address in the SSAP address field of AC0_CMD and AC1_CMD PDUs the originator's individual address?	5.4.3.1	M	Yes ☐
MIS/225	Is the address in the DSAP address field of AC0_RSP and AC1_RSP PDUs? —the individual address of the corresponding AC0_CMD or AC1_CMD originator	5.4.3.2	M	Yes ☐
MIS/226	Is the address in the SSAP address field of AC0_RSP and AC1_RSP PDUs? —the individual address of the AC0_RSP or AC1_RSP transmitter	5.4.3.2	M	Yes ☐

A.8.6 LLC Type 3—Protocol parameters

Item	Protocol feature/ Protocol parameters	References	Status	Support/Value
PPA/227 * PPA/228	Is the N4 (Maximum Number of Transmissions) function implemented? —Maximum Number of Transmissions	8.6.1	M	Yes ☐ Value =
PPA/229 PPA/230	Is the T1 (ACK_TIMER) function implemented? —ACK_TIMER range	8.6.4	If PPA/228 > 1:M	N/A ☐ Yes ☐ Minimum Value = Maximum Value =
PPA/231 PPA/232	Is the T2 (RCV_LIFE_TIMER) function implemented? —RCV_LIFE_TIMER range	8.6.5	M	Yes ☐ Minimum Value = Maximum Value =
PPA/233 PPA/234	Is the T3 (TX_LIFE_TIMER) function implemented? —TX_LIFE_TIMER range	8.6.6	M	Yes ☐ Minimum Value = Maximum Value =

A.9 Route determination entity

RDE::

All tables in clause A.9 are to be completed if above predicate evaluates to true.

A.9.1 General characteristics

Item	Protocol feature/ Support of RDE PDU types	References	Status	Support
RQC/1	ROUTE_QUERY_COMMAND supported on transmission	9.3.7.2, 9.4.1	M	Yes ☐
RQC/2	ROUTE_QUERY_COMMAND supported on receipt	9.3.7.2, 9.4.1	M	Yes ☐
RQR/3	ROUTE_QUERY_RESPONSE supported on transmission	9.3.7.2, 9.4.2	M	Yes ☐
RQR/4	ROUTE_QUERY_RESPONSE supported on receipt	9.3.7.2, 9.4.2	M	Yes ☐
RS/5	ROUTE_SELECTED supported on transmission	9.3.7.2, 9.4.3	M	Yes ☐
RS/6	ROUTE_SELECTED supported on receipt	9.3.7.2, 9.4.3	M	Yes ☐

A.9.2 RDE PDU format

Item	Protocol feature/ RDE PDU format	References	Status	Support
	Do the information fields of all transmitted RDE PDUs contain the following fields as specified in the referenced clauses?			
F/7	—RDE_Ver	9.4		Yes ☐
F/8	—PType	9.4	M	Yes ☐
F/9	—Target_MAC	9.4	M	Yes ☐
F/10	—ORIG_MAC	9.4	M	Yes ☐
F/11	—Target_SAP	9.4	M	Yes ☐
F/12	—ORIG_SAP	9.4	M	Yes ☐
F/13	—Options	9.4	O	Yes ☐ No ☐

A.9.3 Support of Route Control procedures

Item	Protocol feature/Support of Route Control procedures	References	Status	Support
	Route Control Send EVENT/ACTION Specifications	9.6.3.5		
RCS/14a	—ROUTE_QUERY_COMMAND		M	Yes ☐
RCS/14b	—ROUTE_QUERY_RESPONSE		M	Yes ☐
RCS/14c	—ROUTE_SELECTED		M	Yes ☐
RCS/15	Are all RDE PDUs sent according to the requirements specified in the referenced clauses?	Table 8, 9.6.3.5.1, 9.6.3.5.2	M	Yes ☐
	Route Control Receive EVENT/ACTION Specifications	9.6.3.4		
RCR/16a	—ROUTE_QUERY_COMMAND		M	Yes ☐
RCR/16b	—ROUTE_QUERY_RESPONSE		M	Yes ☐
RCR/16c	—ROUTE_SELECTED		M	Yes ☐
RCR/17	Are all RDE PDUs received according to the requirements specified in the referenced clauses?	Table 7, 9.6.3.4.1, 9.6.3.4.2	M	Yes ☐
	If the following PDUs (i.e., PDUs addressed to the RDE LLC address) are received, are they discarded?	9.4		
RDEP/18a	—it is not a UI PDU		M	Yes ☐
RDEP/18b	—the SSAP is not the RDE LLC Address		O	Yes ☐
RDEP/18c	—the ORIG_MAC is not an individual address		M	Yes ☐
RDEP/18d	—the PType is not recognized		M	Yes ☐
	Route Control Reset EVENT/ACTION Specifications	9.6.3.6		
*RRST/19	Are the procedures for Route Reset supported?	9.6.3.6	O	Yes ☐ No ☐
RRST/20	Do RDE reset actions occur according to the requirements specified in the referenced clauses?	Table 9, 9.6.3.6.1, 9.6.3.6.2	RRST/19:M	N/A ☐ Yes ☐

A.9.4 Support of Route Determination procedures

Item	Protocol feature/ Support of Route Determination procedures	References	Status	Support
* RSM/21	Route Selection State Machine	9.7.3		
	Is the REPLACE policy supported?	9.7.3.3, 9.7.1	O	Yes ☐ No ☐
	Are each of the following states (phases) recognized as specified in the referenced clauses?			
	—Initial Phase (Reset State)	9.7.3.1, 9.7.3.2	M	Yes ☐
	—Query Phase	9.7.3.1, 9.7.3.2	M	Yes ☐
	—Waiting Phase	9.7.3.1, 9.7.3.2	M	Yes ☐
RSM/22a	—New Route Phase	9.7.3.1, 9.7.3.2	RSM/21:M	Yes ☐
RSM/22b	—Passive Phase (Route State)	9.7.3.1, 9.7.3.2	M	Yes ☐
RSM/22c				N/A ☐
RSM/22d				
RSM/22e				
RSM/23	Are all state transitions governed by the requirements specified in the referenced clauses?	Table 10, 9.7.3.3	M	Yes ☐
*RSM/24	Route Administration State Machine	9.7.4		
	Is the HOLD policy supported?	9.7.4.3, 9.7.1	O	Yes ☐ No ☐
	Are each of the following states (phases) recognized as specified in the referenced clauses?			
	—System Empty Phase	9.7.4.1.3	RSM/24:M	N/A ☐ Yes ☐
	—Route Inuse Phase	9.7.4.1.3	RSM/24:M	N/A ☐ Yes ☐
	—New Route Pending Phase	9.7.4.1.3	RSM/24:M	N/A ☐ Yes ☐
RSM/25a	—Holding Phase	9.7.4.1.3	RSM/24:M	N/A ☐ Yes ☐
RSM/25b				
RSM/25c				
RSM/25d				
RSM/26	Are all state transitions governed by the requirements specified in the referenced clauses?	Table 11, 9.7.4.2, 9.7.4.3	RSM/24:M	N/A ☐ Yes ☐

A.9.5 Parameter and parameter values

Item	Protocol feature/ Parameter and parameter values	References	Status	Support/Value
STR/27	Route Control Operating Parameters Is the STR_INDICATOR SUPPORTED? —default value (NSR or STE)	9.6.1 9.6.1.1	M	Yes ☐ Default Value =
AGEE/28	Is the AGING_ENABLED indicator supported?	9.6.1.2	M	Yes ☐
RDEE/29a RDEE/29b	Route Determination Parameters Are the following RDE policy flags supported on a per SAP basis? RDE_ENABLED —default value (allowed values: True or False)	9.6.2 9.6.2.1	M	Yes ☐ Default Value =
RPL/30a RPL/30b	REPLACE —default value (allowed values: True or False)	9.6.2.2	M	Yes ☐ Default Value =
HLD/31a HLD/31b	HOLD —default value (allowed values: True or False)	9.6.2.3	M	Yes ☐ Default Value =
MXRD/31a MXRD/31b MXRD/31c	Are the following route selection parameters supported? MAX_RD —default value —min–max range (2 to 30)	9.6.2.4, 9.7.1	O	Yes ☐ No ☐ Default Value = Minimum Value = Maximum Value =
MNPD/32a MNPD/32b MNPD/32c	MIN_PDU_SIZE —default value (octets) —min–max range (octets) (516)	9.6.2.5, 9.7.1	O	Yes ☐ No ☐ Default Value = Minimum Value = Maximum Value =
MXRT/33a MXRT/33b MXRT/33c MXRT/33d	MAX_RESP_TIME —default value (seconds) —min–max range (seconds) —granularity (seconds)	9.6.2.6, 9.7.1	M	Yes ☐ Default Value = Minimum Value = Maximum Value = Value =
ROT/34a ROT/34b	Is a RESET_ON_TEST parameter supported? —default value (On or Off)	9.6.2.7	O	Yes ☐ No ☐ Default Value =
TRS/35a TRS/35b TRS/35c TRS/35d	Is a Route Selection Timer (TRS) supported? —default value (seconds) — min–max range (seconds) ($\geq$ max. round-trip latency) — granularity (seconds)	9.7.3.1	M	Yes ☐ Default Value = Minimum Value = Maximum Value = Value =
AGEF/36a AGEF/36b AGEF/36c AGEF/36d	Is the Ageing Function supported? —default value (seconds) —min–max range (seconds) —granularity (seconds)	9.7.3.1	O	Yes ☐ No ☐ Default Value = Minimum Value = Maximum Value = Value =

Item	Protocol feature/ Parameter and parameter values	References	Status	Support/Value
(Con'd.) TRR/37a TRR/37b TRR/37c TRR/37d	Is Route Response Timer (TRR) supported? —default value (seconds) —min-max range (seconds) (TRS/2 to TRS) —granularity (seconds)	9.7.4.1.4	M	Yes ☐ Default Value = Minimum Value = Maximum Value = Value =
IRPE/38a IRPE/38b IRPE/38c	Is an invalid RDE frames counter supported? —default value —min-max range	9.6.3.4.2	O	Yes ☐ No ☐ Default Value = Minimum Value = Maximum Value =
ISRF/39a ISRF/39b ISRF/39c	Is a Specifically Routed Frames counter supported? —default value —min-max range	9.6.3.5.2	O	Yes ☐ No ☐ Default Value = Minimum Value = Maximum Value =
IST/40a IST/40b IST/40c	Is a Spanning Tree routed frames counter supported? —default value —min-max range	9.6.3.5.2	O	Yes ☐ No ☐ Default Value = Minimum Value = Maximum Value =

National foreword

This British Standard reproduces verbatim ISO/IEC 8802-2 : 1994 and implements it as the UK national standard.

This revision which embodies corrections and amendments separately issued to the first edition of ISO/IEC 8802-2 : 1989 (see IEEE foreword), supersedes BS ISO/IEC 8802-2 : 1989, which is withdrawn.

This British Standard is published under the direction of the Information Systems Technology Assembly whose Technical Committee IST/6 has the responsibility to:

- aid enquirers to understand the text;
- present to the responsible international committee any enquiries on interpretation, or proposals for change, and keep UK interests informed;
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INTERNATIONAL
STANDARD

ISO/IEC
8802-2

ANSI/IEEE
Std 802.2

Second edition
1994-12-30

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

Part 2:
Logical link control

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

Partie 2: Contrôle de liaison logique



Reference number
ISO/IEC 8802-2:1994(E)
ANSI/IEEE
Std 802.2, 1994 edition

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Abstract: This standard is part of a family of standards for local area networks (LANs) and metropolitan area networks (MANs) that deals with the physical and data link layers as defined by the ISO Open Systems Interconnection Reference Model. The functions, features, protocol, and services of the Logical Link Control (LLC) sublayer, which constitutes the top sublayer in the data link layer of the ISO/IEC 8802 Local Area Network Protocol, are described. The services required of, or by, the LLC sublayer at the logical interfaces with the network layer, the MAC sublayer, and the LLC sublayer management function are specified. The protocol data unit (PDU) structure for data communication systems is defined using bit-oriented procedures, as are three types of operation for data communication between service access points. In the first type of operation, PDUs are exchanged between LLCs without the need for the establishment of a data link connection. In the second type of operation, a data link connection is established between two LLCs prior to any exchange of information-bearing PDUs. In the third type of operation, PDUs are exchanged between LLCs without the need for the establishment of a data link connection, but stations are permitted to both send data and request the return of data simultaneously.

Keywords: Local area networks, protocols; logical link control

The Institute of Electrical and Electronics Engineers, Inc.
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ISBN 1-55937-392-X

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December 30, 1994

SH94215

International Standard ISO/IEC 8802-2:1994
IEEE Std 802.2, 1994 edition
(Incorporating ANSI/IEEE Stds 802.2-1989, 802.2a-1993,
802.2b-1993, 802.2d-1993, 802.2e-1993, and 802.5p-1993)

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

Part 2: Logical Link Control

Sponsor

**Technical Committee on Computer Communications
of the
IEEE Computer Society**



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.



International Standard ISO/IEC 8802-2:1994

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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.

International Standard ISO/IEC 8802-2 was prepared by Joint Technical Committee ISO/IEC JTC 1, *Information technology*.

This edition cancels and replaces the first edition (ISO 8802-2:1989) which has been technically revised. This edition also consolidates Technical Corrigendum 1 to ISO/IEC 8802-2:1989.

ISO/IEC 8802 consists of the following parts, under the general title *Information technology — Local and metropolitan area networks — Specific requirements*:

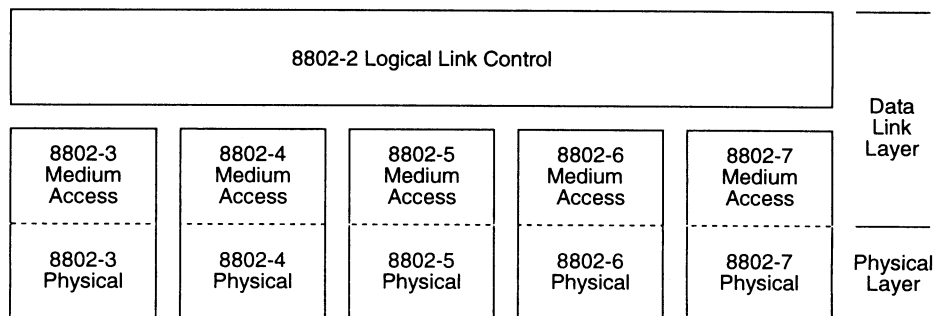
- *Part 1: Overview and Architecture*
- *Part 2: Logical Link Control*
- *Part 3: Carrier Sense Multiple Access with Collision Detection (CSMA/CD) access method and physical layer specifications*
- *Part 4: Token-passing bus access method and physical layer specifications*
- *Part 5: Token ring access method and physical layer specifications*
- *Part 6: Distributed Queue Dual Bus (DQDB) access method and physical layer specifications*
- *Part 7: Slotted ring access method and physical layer specification*



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Foreword to International Standard ISO/IEC 8802-2 : 1994

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:

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

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.

The reader of this document is urged to become familiar with the complete family of International Standards.

The main body of the International Standard serves for both the ISO/IEC 8802-2 : 1994 and IEEE Std 802.2, 1994 Edition standards. ISO and IEEE each have a unique foreword.

ANSI/IEEE Std 802.2, 1994 Edition

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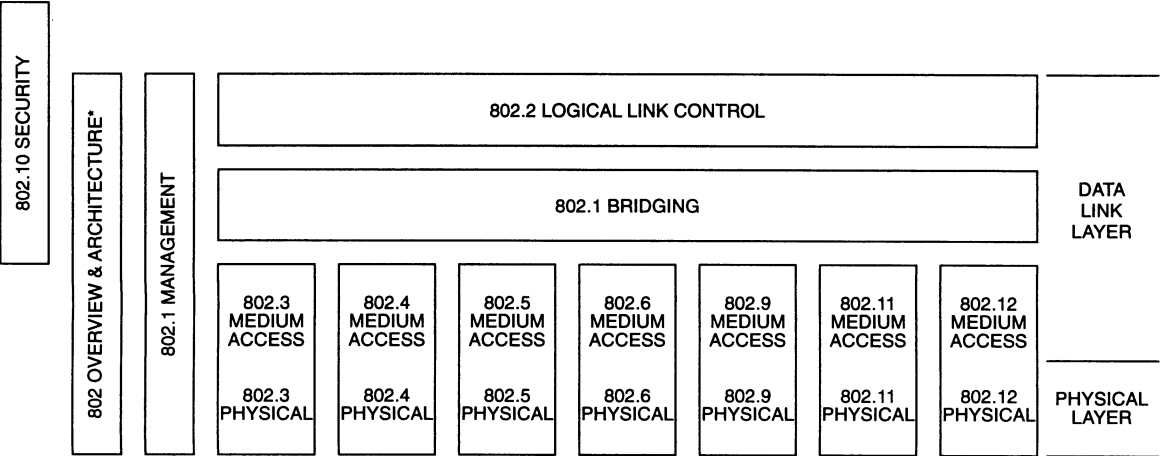
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Foreword to ANSI/IEEE Std 802.2, 1994 Edition

(This foreword is not a part of ANSI/IEEE Std 802.2, 1994 Edition or of ISO/IEC 8802-2 : 1994.)

This standard is part of a family of standards for local and metropolitan area networks. The relationship between the standard and other members of the family is shown below. (The numbers in the figure refer to IEEE standard numbers.)



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

The standards defining the technologies noted above are as follows:

- IEEE Std 802¹: Overview and Architecture. This standard provides an overview to the family of IEEE 802 Standards. This document forms part of the 802.1 scope of work.
- IEEE Std 802.1B and 802.1k [ISO/IEC DIS 15802-2]: 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.
- ANSI/IEEE Std 802.1D [ISO/IEC 10038]: MAC Bridging. Specifies an architecture and protocol for the interconnection of IEEE 802 LANs below the MAC service boundary.
- ANSI/IEEE Std 802.1E [ISO/IEC 15802-4]: System Load Protocol. Specifies a set of services and protocol for those aspects of management concerned with the loading of systems on IEEE 802 LANs.

¹The 802 Architecture and Overview standard, originally known as IEEE Std 802.1A, has been renumbered as IEEE Std 802. This has been done to accommodate recognition of the base standard in a family of standards. References to IEEE Std 802.1A should be considered as references to IEEE Std 802.

- ANSI/IEEE Std 802.2 [ISO/IEC 8802-2]: Logical Link Control
- ANSI/IEEE Std 802.3 [ISO/IEC 8802-3]: CSMA/CD Access Method and Physical Layer Specifications
- ANSI/IEEE Std 802.4 [ISO/IEC 8802-4]: Token Bus Access Method and Physical Layer Specifications
- ANSI/IEEE Std 802.5 [ISO/IEC 8802-5]: Token Ring Access Method and Physical Layer Specifications
- ANSI/IEEE Std 802.6 [ISO/IEC 8802-6]: Distributed Queue Dual Bus Access Method and Physical Layer Specifications
- IEEE Std 802.9: Integrated Services (IS) LAN Interface at the Medium Access Control (MAC) and Physical (PHY) Layers
- IEEE Std 802.10: Interoperable LAN/MAN Security, *Currently approved*: Secure Data Exchange (SDE)

In addition to the family of standards, the following is a recommended practice for a common Physical Layer technology:

- IEEE Std 802.7: IEEE Recommended Practice for Broadband Local Area Networks

The following additional working groups have authorized standards projects under development:

- IEEE 802.11: Wireless LAN Medium Access Control (MAC) Sublayer and Physical Layer Specifications
- IEEE 802.12: Demand Priority Access Method/Physical Layer Specifications

Conformance test methodology

An additional standards series, identified by the number 1802, has been established to identify the conformance test methodology documents for the 802 family of standards. Thus the conformance test documents for 802.3 are numbered 1802.3, the conformance test documents for 802.5 will be 1802.5, and so on. Similarly, ISO will use 18802 to number conformance test standards for 8802 standards.

ANSI/IEEE Std 802.2, 1994 Edition [ISO/IEC 8802-2 : 1994]

This edition of the standard incorporates five supplements: 802.2a-1993, *Standard for Flow Control Techniques for Bridged Local Area Networks* (ISO/IEC Amendment 1); 802.2b-1993, *Standard for Acknowledged Connectionless-Mode Service and Protocol* (Type 3 Operation) (ISO/IEC Amendment 2); 802.2d-1993, *Editorial Changes and Technical Corrections* (ISO/IEC Amendment 4); 802.2e-1993, *Bit Delivery Referencing* (ISO/IEC Defect Report 001); and 802.5p-1993, *Standard for Route Determination Entity* (ISO/IEC Amendment 5). A portion of the IEEE approved edition of 802.5p-1993 is not included in this edition because it pertains to ISO/IEC Amendment 3, which has not yet been approved for inclusion in this IEEE edition (but is approved by ISO/IEC).

This standard contains state-of-the-art material. The area covered by this standard is undergoing evolution. Revisions are anticipated within the next few years to clarify existing material, to correct possible errors, and to incorporate new related material. Information on the current revision state of this and other IEEE 802 standards may be obtained from

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