EUROPEAN TELECOMMUNICATION STANDARD

ETS 300 268

March 1994

Source: ETSI TC-NA

Reference: DE/NA-053024

ICS: 33.080

Key words: MAN, PICS

Network Aspects (NA); Metropolitan Area Network (MAN) Protocol Implementation Conformance Statement (PICS)

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Contents

Foreword

This European Telecommunication Standard (ETS) has been prepared by the Network Aspects (NA) Technical Committee of the European Telecommunications Standards Institute (ETSI).

This ETS details the Protocol Implementation Conformance Statement (PICS) for a European Metropolitan Area Network (MAN) based on the Distributed Queue Dual Bus (DQDB) access method as defined in ETS 300 212 [2].

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1 Scope

This European Telecommunication Standard (ETS) defines Protocol Implementation Conformance Statement (PICS) for a European Metropolitan Area Network (MAN) based on the Distributed Queue Dual Bus (DQDB) access method in the context of a subnetwork of a MAN as defined in ETS 300 212 [2]. Simplifications applying in the special case where a single node is attached to the access network are indicated.

2 Normative references

This ETS incorporates, by dated or undated reference, provisions from other publications. These normative references are cited at the appropriate places in the text and the publications are listed below. For dated references, subsequent amendments to or revisions of these publications apply to this ETS only when incorporated in it by amendment or revision. For undated references the latest edition of the publication referred to applies.

[1] IEEE Standard 802.6 (1990): "Distributed Queue Dual Bus (DQDB) Subnetwork of a Metropolitan Area Network (MAN)".

[2] ETS 300 212: "Network Aspect (NA) Metropolitan Area Network (MAN) media access control layer and physical layer specification".

[3] ETS 300 213: "Network Aspects (NA), Metropolitan Area Network (MAN), Physical layer convergence procedure for 2,048 Mbit/s".

[4] ETS 300 214: "Network Aspects (NA), Metropolitan Area Network (MAN), Physical Layer Convergence Procedure (PLCP) for 34,386 Mbit/s".

[5] ETS 300 215: "Network Aspects (NA), Metropolitan Area Network (MAN), Physical Layer Convergence Procedure (PLCP) for 139,264 Mbit/s".

[6] ETS 300 216: "Network Aspects (NA), Metropolitan Area Network (MAN), Physical Layer Convergence Procedure (PLCP) for 155,520 Mbit/s".

[7] ETS 300 269: "Network Aspects (NA), Metropolitan Area Network (MAN), Physical Layer Convergence Procedure (PLCP) for 2,048 Mbit/s Protocol Implementation Conformance Statement (PICS)".

[8] ETS 300 270: "Network Aspects (NA), Metropolitan Area Network (MAN), Physical Layer Convergence Procedure (PLCP) for 34,386 Mbit/s, Protocol Implementation Conformance Statement (PICS)".

[9] ETS 300 271: "Network Aspects (NA), Metropolitan Area Network (MAN), Physical Layer Convergence Procedure (PLCP) for 139,264 Mbit/s, Protocol Implementation Conformance Statement (PICS)".

[10] ETS 300 272: "Network Aspects (NA), Metropolitan Area Network (MAN), Physical Layer Convergence Procedure (PLCP) for 155,520 Mbit/s CCITT Recommendations G.707, G.708 and G.709 SDH based systems, Protocol Implementation Conformance Statement (PICS)".

[11] ETS 300 276: "Network Aspects (NA), Metropolitan Area Network (MAN), Physical Layer Convergence Procedure (PLCP) for 622,080 Mbit/s CCITT Recommendations G.707, G.708 and G.709 SDH based systems".

[12] ETS 300 277: "Network Aspects (NA), Metropolitan Area Network (MAN), Physical Layer Convergence Procedure (PLCP) for 622,080 Mbit/s CCITT Recommendations G.707, G.708 and G.709 SDH based systems, Protocol Implementation Conformance Statement (PICS)".

3 Definitions, symbols and abbreviations

3.1 Definitions

For the purposes of this ETS, the definitions as defined in ETS 300 212 [2] shall apply.

3.2 Symbols and abbreviations

For the purpose of this ETS, the symbols and abbreviations as defined in ETS 300 212 [2] and IEEE Standard 802.6 [1] shall apply.

In addition, in this PICS proforma, the following abbreviations are used in defining the support type of a feature, parameter or capability:

m	mandatory
o	optional
c	conditional
pr	prohibited
n/a	not applicable

When used in the column labelled "Value", the following abbreviations mean:

xx - yy	from number xx to number yy
xx/yy	either number xx or number yy applies, depending on the actual conditions

For each of the conditional items, an explanation of the parameter or capability under which the feature, parameter or capability is mandatory, is given in the Clause or subclause in which the conditional items appear.

The notation X_ in the column "Support" means that numbers may be entered in this place pointing to notes which indicate deviation from the ETS (see subclause 4.3).

4 Protocol Implementation Conformance Statement (PICS) for ETS 300 212

In addition to compliance with this ETS, the implementation of a working MAN shall provide compliance with one or more of the following ETSs specifying a Physical Layer Convergence Procedure (PLCP) for DQDB-MANs:

ETS 300 213 [3]	for use with 2,048 Mbit/s transmission systems;
ETS 300 214 [4]	for use with 34,368 Mbit/s transmission systems;
ETS 300 215 [5]	for use with 139,264 Mbit/s transmission systems;
ETS 300 216 [6]	for use with 155,520 Mbit/s transmission systems;
ETS 300 276 [11]	for use with 622,080 Mbit/s transmission systems.

Separate Protocol Implementation Conformance Statements (PICSs) are available for these PLCPs as:

ETS 300 269 [7] for 2,048 Mbit/s transmission systems;

ETS 300 270 [8] for 34,368 Mbit/s transmission systems;

ETS 300 271 [9] for 139,264 Mbit/s transmission systems;

ETS 300 272 [10] for 155,520 Mbit/s transmission systems;

ETS 300 277 [12] for 622,080 Mbit/s transmission systems.

4.1 General structure of the PICS proforma

The first part of the PICS proforma "implementation identification and protocol summary" shall be completed as indicated with the information necessary to fully identify both the supplier and the implementation.

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

NOTE 1: There are some items where two or more choices from a set of possible answers can apply; in this case, all relevant choices shall be marked.

Each item is identified by an item reference in the first column. The second column contains the question to be answered. The third column contains the reference or references to the material that specifies the item in the main body of the underlying IEEE Standard 802.6 [1]. The remaining columns record the status of the item, whether support is mandatory, optional, prohibited or conditional and provide the space for the answers (see also subclause 4.4).

A supplier may also provide further information, categorized as either additional information or exception information. When present, each kind of further information shall be provided in a further subclause of items labelled A<i> or X<i> respectively for cross-referencing purposes; where <i> is any unambiguous identification for the item (e.g. simply a numeral). There are no other restrictions on its format and presentation.

A completed PICS proforma, including any additional information and exception information, is the PICS for the implementation in question.

NOTE 2: Where an implementation is capable of being configured in more than one way according to the items listed under major capabilities, 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, in case that provides easier and clearer presentation of the information.

4.2 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 will be supplied, and a PICS can be considered complete without any such information. Examples may 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 on specific application needs, for the exclusion of features which, although optional, are nonetheless commonly present in implementations of the DQDB 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.

4.3 Exception information

It may occasionally happen 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 is to 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 item itself.

An implementation for which an exception item is required in this way does not conform to IEEE Standard 802.6 [1].

NOTE: A possible reason for the situation described above is that a defect in the standard has been reported, a correction for which is expected to change the requirement not met by the standard.

In the case where a single node is attached to the access subnetwork the full functionality of the DQDB protocol need not be implemented. The following notes have been reserved in the context of this ETS to indicate limited compliance for point-to-point connections:

X1: this note marks an item the implementation of which is not required for a point-to-point application;

X2: this note marks an item which is not applicable in a point-to-point connection.

4.4 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.

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 (n/a)" answer is selected. Otherwise, individual conditional items are indicated by one or more conditional symbols (on separate lines) in the Status column.

A conditional item is indicated with "c:<s>" in the Status column where "<s>" is one of m, o, or o.<n>, as described in Clause 3. The Predicate column will contain a predicate, "<pred>" as described in subclause 4.5.

If the value of the predicate in any line of a conditional item is true (see subclause 4.5), the conditional item shall be applicable, and its status shall be that indicated by the status symbol following the predicate: the answer column shall be marked in the usual way. If the value of a predicate is false, no answer is required.

4.5 Predicates

A predicate is one of the following:

a) an item-reference for an item in the PICS proforma: the value of the predicate shall be true if the item is marked as supported, and shall be false otherwise; or

b) a predicate name, for a predicate defined elsewhere in the PICS proforma; or

c) the logical negation symbol "NOT" prefixed to an item-reference or predicate name: the value of the predicate shall be true if the value of the predicate formed by omitting the "NOT" symbol shall be false, and vice versa.

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

1) an item-reference, evaluated as at a) above; or

2) a relation containing a comparison operator (i.e. = y, < y, etc.) with at least one of its operands being an item-reference for an item taking numerical values as its answer: the predicate shall be 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

3) a Boolean expression constructed by combining simple predicates, as at 1) and 2), using the Boolean operators AND, OR and NOT, and parentheses, in the usual way. The value of such a predicate shall be true if the Boolean expression evaluates to true when the simple predicates are interpreted as described above.

4.6 Identification

4.6.1 Implementation identification

Supplier.

Contact for queries about the PICS.

Implementation name and version.

Additional identification information.

4.6.2 Protocol summary

Identification of protocol specification.

Identification of amendments/corrigenda to this PICS.

Protocol versions supported.

Are any exception items required: No [ ] Yes [ ]

Date and place of statement: (dd/mm/yy)

4.7 Compliance questionnaire

For ease of reference, the numbering of the following Clauses and subclauses is identical to that contained in IEEE Standard 802.6 [1], which is referenced in ETS 300 212 [2]. Within each subclause the different requirements are numbered starting with "1" for each subclause. Also the numbering used in the column marked "Reference" refers to the numbering used in IEEE Standard 802.6 [1].

5 DQDB node functional description

An implementation is required to conform to the functional models defined in this ETS with regard to all of the externally observable effects.

5.1 Provision of MAC service to logical link control

The provision of MAC service to Logical Link Control (LLC) is mandatory for all implementations conforming to this ETS.

5.1.1 MAC convergence function block

5.1.1.1 MAC convergence function transmit functions

Table 1

Item	Feature	Reference	Status	Predicate	Value	Support
5.1	MAC Convergence Function (MCF) transmit function	5.1.1.1 figure 5.3	m			Y[ ] N[ ] X_
5.2	Creation of Initial MAC Protocol Data Unit (IMPDU)	5.1.1.1 6.5.1	m			Y[ ] N[ ] X_
5.3	Segmentation of of IMPDU	5.1.1	m			Y[ ] N[ ] X_
5.4	Creation of Derived MAC Protocol Data Units (DMPDUs)	5.1.1.1 6.5.2	m m			Y[ ] N[ ] X_
5.5	Transmit inter-actions between MCF block and Queued Arbitrated (QA) functions block	5.1.1.1	m			Y[ ] N[ ] X_ Y[ ] N[ ] X_
5.6	TX_BUS_SIGNAL	5.1.1.1	m		BUS_A, or BUS_B, or BOTH	Y[ ] N[ ] X1
5.7	ACCESS_QUEUE_ SIGNAL	5.1.1.1	m		0	Y[ ] N[ ] X_
5.8	VCI_DATA	5.1.1.1	m		default = all bit 1	Y[ ] N[ ] X_
5.9	PT_Data	5.1.1.1	c: m	not ACLVCI	binary 0	Y[ ] N[ ] X_
			c: m	ACLVCI	default = binary 0	Y[] N[ ] X_
5.10	SP_Data	5.1.1.1	c: m	not ACLVCI	binary 0	Y[ ] N[ ] X_
			c: m	ACLVCI	default = binary 0	Y[ ] N[ ] X_

ACLVCI = Additional Connectionless Virtual Channel Identifier.

5.1.1.2 MAC convergence function receive functions

Table 2

Item	Feature	Reference	Status	Predicate	Value	Support
5.1	MCF receive functions	5.1.1.2 figure 5.6	m			Y[ ] N[ ] X_
5.2	Receive inter-actions between QA functions block and MCF block	5.1.1.2	m			Y[ ] N[ ] X_
5.3	RX_BUS_SIGNAL	5.1.1.2	m		BUS_A, or BUS_B, or BOTH	Y[ ] N[ ] X1
5.4	PSR_X_SIGNAL	5.1.1.2	m		X = A, or B	Y[ ] N[ ] X1
5.5	VCI_DATA	5.1.1.2	m			Y[ ] N[ ] X_
5.6	PT_Data	5.1.1.2	m			Y[ ] N[ ] X_
5.7	SP_Data	5.1.1.2	m			Y[ ] N[ ] X_
5.8	Reassembly state machine selection	5.1.1.2	m			Y[ ] N[ ] X_
5.9	Reassembly of the IMPDU	5.1.1.2 8.2.1	m			Y[ ] N[ ] X_
5.10	Validation of the IMPDU	5.1.1.2	m			Y[ ] N[ ] X_
5.11	Extraction of the MAC Service Data Unit (MSDU)	5.1.1.2	m			Y[ ] N[ ] X_

5.1.2 Queued arbitrated functions block

5.1.2.1 Queued arbitrated transmit functions

Table 3

Item	Feature	Reference	Status	Predicate	Value	Support
5.1	QA transmit functions	5.1.2.1 figure 5.3	m			Y[ ] N[ ] X_
5.2	Transmit interaction between convergence function block and QA functions block	5.1.2.1	m			Y[ ] N[ ] X_
5.3	TX_BUS_SIGNAL	5.1.2.1	m		BUS_A, or BUS_B, or BOTH	Y[ ] N[ ] X1
5.4	ACCESS_QUEUE_SIGNAL	5.1.2.1	m		0 ,1 or 2	Y[ ] N[ ] X_
5.5	VCI_DATA	5.1.2.1	m			Y[ ] N[ ] X_
	PT_Data	5.1.2.1	m			Y[ ] N[ ] X_
	SP_Data	5.1.2.1	m			Y[ ] N[ ] X_
5.6	QA segment creation	5.1.2.1	m			Y[ ] N[ ] X_
5.7	First In First Out (FIFO) queuing of QA segments	5.1.2.1	m			Y[ ] N[ ] X_
5.8	Distributed queuing of QA segments	5.1.2.1 8.1	m			Y[ ] N[ ] X1
5.9	Transmit interaction between QA functions block and common functions block	5.1.2.1	m			Y[ ] N[ ] X_

5.1.2.2 Queued arbitrated receive functions

Table 4

Item	Feature	Reference	Status	Predicate	Value	Support
5.1	QA receive functions	5.1.2.2 figure 5.11	m			Y[ ] N[ ] X_
5.2	Receive interaction between common function block and QA functions block	5.1.2.2	m			Y[ ] N[ ] X_
5.3	Busy, QA slot processing	5.1.2.2	m			Y[ ] N[ ] X_
5.4	QA segment header validation	5.1.2.2	m			Y[ ] N[ ] X_
5.5	Convergence function selection	5.1.2.2	m			Y[ ] N[ ] X_
5.6	Receive interactions between QA functions block and convergence functions block		m			Y[ ] N[ ] X_
5.7	RX_BUS_SIGNAL	5.1.2.2	m		BUS_A or BUS_B	Y[ ] N[ ] X1
5.8	PSR_X_SIGNAL	5.1.2.2	m		X = A or B	Y[ ] N[ ] X1
	VCI_DATA	5.1.2.2	m			Y[ ] N[ ] X_
	PT_Data	5.1.2.2	m			Y[ ] N[ ] X_
	SP_Data	5.1.2.2	m			Y[ ] N[ ] X_

5.1.3 MAC sublayer service management functions

All nodes conforming to this ETS shall support the message identifier management functions and managed objects described in IEEE Standard 802.6 [1], sections 9.4.1 to 9.4.5. All other DQDB layer management interface functions are optional for the support of the MAC sublayer service to the LLC sublayer.

5.2 Provision of isochronous service

The provision of isochronous service is optional. However, if it is provided, all functions with mandatory status shall be implemented.

5.2.1 Isochronous convergence function block

Table 5

Item	Feature	Reference	Status	Predicate	Value	Support
5.1	Isochronous Convergence Functions (ICF) transmit functions	5.2.1.1	m (NOTE) n/a	ICF NOT ICF		Y[ ] N[ ] X_
5.2	ICF receive functions	5.2.1.2	m (NOTE) n/a	ICF NOT ICF		Y[ ] N[ ] X_
NOTE: The ICF could be performing a null function.						

5.2.2 Pre-arbitrated functions block

Table 6

Item	Feature	Reference	Status	Predicate	Value	Support
5.1	Pre-Arbitrated (PA) transmit functions	5.2.2.1	c: m n/a	ICF NOT ICF		Y[ ] N[ ] X_
5.2	PA receive functions	5.2.2.2	c: m n/a	ICF NOT ICF		Y[ ] N[ ] X_

5.2.3 Isochronous service provider management functions

If a conforming node is to support the isochronous service, then it shall support the managed objects and operations described in IEEE Standard 802.6 [1], sections 9.2.3 and 9.2.5.

5.3 Provision of other services

5.3.1 Connection-oriented data service

The provision of a connection-oriented data service is optional. However, if it is provided, all functions with mandatory status shall be implemented.

Table 7

Item	Feature	Reference	Status	Predicate	Value	Support
5.1	Interactions between Connection-Oriented Convergence Function (COCF) block and QA functions block	5.3.1.2	c: m n/a	COCF NOT COCF		Y[ ] N[ ] X_

5.4 Common functions

5.4.1 Relaying of slot octets and management information octets

Table 8

Item	Feature	Reference	Status	Predicate	Value	Support
5.1	Transmit interactions between QA functions block and common functions block	5.4.1.1	m			Y[ ] N[ ] X_
5.2	Receive interactions between QA functions block and common functions block	5.4.1.2	m			Y[ ] N[ ] X_
5.3	Transmit interactions between PA functions block and common funtions block	5.4.1.3	c: m n/a	ICF NOT ICF		Y[ ] N[ ] X_
5.4	Receive interactions between PA functions block and common functions block	5.4.1.4	c: m n/a	ICF NOT ICF		Y[ ] N[ ] X_

5.4.2 Subnetwork configuration control function

These functions are required for the correct operation of a DPDB subnetwork. Not all nodes attached to a DQDB subnetwork need to be capable of performing all of these functions.

Table 9

Item	Feature	Reference	Status	Predicate	Value	Support
5.1	Fundamental subnetwork requirements	5.4.2.1	m (NOTE)			Y[ ] N[ ] X_
5.2	Start-up of nodes not supporting DSG function	5.4.2.2	c: m n/a	NOT Default Slot Generator (DSG)		Y[ ] N[ ] X_
5.3	Summary of subnetwork HOB requirements	5.4.2.3	m (NOTE)			Y[ ] N[ ] X_
5.4	Subnetwork timing reference configuration control functions	5.4.2.4	m (NOTE)			Y[ ] N[ ] X_
5.5	Hierarchy for selection of primary subnetwork timing reference	5.4.2.4	m (NOTE)			Y[ ] N[ ] X_
5.6	Primary timing reference function for node not at HOB	5.4.2.4	m (NOTE)			Y[ ] N[ ] X2
5.7	Other timing reference function for HOB	5.4.2.4	m (NOTE)			Y[ ] N[ ] X_
5.8	Nodes which cannot support head of bus functions	5.4.2.5	c: m n/a	NOT HOB HOB		Y[ ] N[ ] X_
5.9	Common functions block support for the fundamental subnetwork requirement	5.4.2.6 10.2 10.1.2	m (NOTE)			Y[ ] N[ ] X_
5.10	DSG signalling	5.4.2.6 10.1.2.1	m (NOTE)		default = NOT PRESENT	Y[ ] N[ ] X_
5.11	HOB signalling	5.4.2.6 10.1.2.2	m (NOTE)			Y[ ] N[ ] X_
5.13	External timing source signalling	5.4.2.6 10.1.2.3	m (NOTE)		default = NOT PRESENT	Y[ ] N[ ] X_

NOTE: These requirements are mandatory for a DQDB subnetwork. The role of a particular node may change.

5.4.3 Head of bus functions

These functions are mandatory for a node that is to support head of bus functions. However, not all nodes are required to support the head of bus functions.

Table 10

Item	Feature	Reference	Status	Predicate	Value	Support
5.1	Slot marking functions	5.4.3.1 6.2.1 6.3, 6.4 9.2.6 9.2.7	c: m	HOB		Y[ ] N[ ] X_
5.2	Bus identification functions	5.4.3.3 10.1.1	c: m	HOB or CC_D		Y[ ] N[ ] X_

5.4.4 Message identifier page allocation functions

Table 11

Item	Feature	Reference	Status	Predicated	Value	Support
5.1	Head of bus functions	5.4.4.1	c: m	HOB		Y[ ] N[ ] X_
5.2	Page counter subfield generation	5.4.4.1 10.1.3 10.3.1 7.2.4	c: m	HOB		Y[ ] N[ ] X_
5.3	Page reservation subfield generation	5.4.4.1 10.1.3.1 10.3.2	c: m	HOB		Y[ ] N[ ] X_
5.4	Page counter modulus subfield generation	5.4.4.1 10.1.3.2 10.3.3	c: m	HOB		Y[ ] N[ ] X_
5.5	Node functions	5.4.4.2 5.4.4	m			Y[ ] N[ ] X_
5.6	Message Identifier (MID) page list maintenance	5.4.4.2 7.3.5 9.4 10.3.6	m			Y[ ] N[ ] X_
5.7	Page counter operations	5.4.4.2 10.3.4	m			Y[ ] N[ ] X_
5.8	Keeping MID pages	5.4.4.2 10.3.5	m			Y[ ] N[ ] X_
5.9	Getting MID pages	5.4.4.2 10.3.6	m			Y[ ] N[ ] X_

6 DQDB layer protocol data unit formats

This Clause describes the formats of the data units as a sequence of fields.

6.1 Ordering principles

Table 12

Item	Feature	Reference	Status	Predicate	Value	Support
6.1	Octet fields transmitted leftmost first	6.1	m			Y[ ] N[ ] X_

6.2 Slot

Table 13

Item	Feature	Reference	Status	Predicate	Value	Support
6.1	1-octet access control field	6.2	m			Y[ ] N[ ] X_
6.2	52-octet segment	6.2	m			Y[ ] N[ ] X_
6.3	Access Control Field (ACF) busy and SL_TYPE bits	6.2.1 table 6.1	m		table 6.1	Y[ ] N[ ] X_
6.4	Previous Segment Received (PSR) PSR bit set to 1 previous slot can be cleared, 0 if it cannot be cleared	6.2.1				Y[ ] N[ ] X1
6.5	The ACF has 3 REQ_I bits that are set to zero by the slot marking function at the HOB	6.2.1	m			Y[ ] N[ ] X_

6.3 Queued arbitrated slot

Table 14

Item	Feature	Reference	Status	Predicate	Value	Support
6.1	All bits of QA set to 0 at the head of bus	6.3	m			Y[ ] N[ ] X_
6.2	Access unit shall set the BUSY bit to 1 to transfer a QA segment	6.3	m			Y[ ] N[ ] X_
6.3	QA segment has 4 octet segment header, 48-octet segment payload	6.3.1	m			Y[ ] N[ ] X_
6.4	Segment header has a Virtual Channel Identifier (VCI) field, payload-type field, segment-priority field, Header Check Sequence (HCS) field	6.3.1.1	m			Y[ ] N[ ] X_
6.5	All-zeros VCI	6.3.1.1	pr			Y[ ] N[ ] X_
6.6	Default connec-tionless VCI	6.3.1.1	m		all 1's	Y[ ] N[ ] X_
6.7	Payload-type field	6.3.1.1	c: m	NOT ACLVCI	00	Y[ ] N[ ] X_
			c: m	ACLVCI	default = 00	Y[ ] N[ ] X_
6.8	Segment priority field	6.3.1.1	m		00	Y[ ] N[ ] X_
6.9	HCS generator polynomial	6.3.1.1	m			Y[ ] N[ ] X_
6.10	HCS error checking	6.3.1.1	m			Y[ ] N[ ] X_
6.11	HCS error correction	6.3.1.1	o			Y[ ] N[ ] X_
6.12	QA segment pay-load 48 octets	6.3.1.2	m			Y[ ] N[ ] X_

ACLVCI = Additional Connectionless Virtual Channel Identifier.

6.4 Pre-arbitrated slots

Table 15

Item	Feature	Reference	Status	Predicate	Value	Support
6.1	Pre-Arbitrated (PA) slot will be generated with BUSY set 1, the SL-Type 1 and other ACF bits 0	6.4.1	m			Y[ ] N[ ] X_
6.2	PA segment has 4 octet segment header and 48-octet segment payload	6.4.1	m			Y[ ] N[ ] X_
6.3	Segment header has a VCI field, payload-type field, segment priority field, HCS field	6.4.1.1	m			Y[ ] N[ ] X_
6.4	All-zeros VCI value	6.4.1.1	pr			Y[ ] N[ ] X_
6.5	All-1s VCI value	6.4.1.1	pr			Y[ ] N[ ] X_
6.6	Payload_data field	6.4.1.1	m		00	Y[ ] N[ ] X_
6.7	Segment_priority field	6.4.1.1	m		00	Y[ ] N[ ] X_
6.8	HCS generation polynomial	6.4.1.1	m			Y[ ] N[ ] X_
6.9	HCS error checking	6.4.1.1	m			Y[ ] N[ ] X_
6.10	HCS error correction	6.4.1.1	o			Y[ ] N[ ] X_
6.11	PA segment pay-load 48 octets	6.3.1.2	m		00	Y[ ] N[ ] X_

6.5 Transfer of MAC service data unit

This sublause describes the format and the transfer of the MAC Service Data Unit (MSDU).

6.5.1 Initial MAC protocol data unit

Table 16

Item	Feature	Reference	Status	Predicate	Value	Support
6.1	IMPDU format	6.5.1 figure 6.8	m			Y[ ] N[ ] X_
6.2	IMPDU header format	6.5.1	m			Y[ ] N[ ] X_
6.3	Common PDU header format	6.5.1 6.5.1.1	m			Y[ ] N[ ] X_
6.4	Buffer Allocation size (BAsize) field	6.5.1.1	m			Y[ ] N[ ] X_
6.5	MCP header	6.5.1.2	m			Y[ ] N[ ] X_
6.6	48-bit MAC Service Access Point (MSAP) addresses (destination and source)	6.5.1.2	m			Y[ ] N[ ] X_
6.7	60-bit MSAP addresses (destination and source)	6.5.1.2	c: m		ADD_60	Y[ ] N[ ] X_
6.8	16-bit MSAP addresses (destination and source)	6.5.1.2	c: m		ADD_16	Y[ ] N[ ] X_
6.9	Destination Address (DA) and Source Address (SA) field format	6.5.1.2	m			Y[ ] N[ ] X_
6.10	The Header Extension (HE) field is reserved	6.5.1.3	m			Y[ ] N[ ] X_
6.11	All nodes shall recognise the HE field	6.5.1.3	m			Y[ ] N[ ] X_
6.12	Nodes shall be able to receive INFO fields up to 9188 octets for PI=1	6.5.1.4	m			Y[ ] N[ ] X_
6.13	PAD field	6.5.1.5	m		all 0's	Y[ ] N[ ] X_
6.14	CRC32 field	6.5.1.6	o			Y[ ] N[ ] X_
6.15	The CRC32 field shall be recognised by all modes when CR32 Indicator Bit (CIB) is set	6.5.1.6	m			Y[ ] N[ ] X_
6.16	Common PDU trailer	6.5.1.7	m			Y[ ] N[ ] X_
6.17	PI field	6.5.1.2.4.1	m		(see Annex A)	Y[ ] N[ ] X_

6.5.2 Derived MAC protocol data unit

Table 17

Item	Feature	Reference	Status	Predicate	Value	Support
6.1	DMPDU format	6.5.2 figures 6.17-18, table 6.5	m			Y[ ] N[ ] X_
6.2	The DMPDU header consists of a 2-octet segment-type field, a 4-bit sequence number field, and a 10-bit MID field	6.5.2.1 figure 6.18	m			Y[ ] N[ ] X_
6.3	The segment-type field is 00 for Continuation Of Messages (COMs), 01 for End Of Message (EOMs) 10 for Beginning of Messages (BOMs) and 11 for Single Segment Messages (SSMs)	6.5.2.1 table 6.5	m			Y[ ] N[ ] X_
6.4	The payload Cyclic Redundancy Check (CRC) subfield used for error detection at the receiving node	6.5.2.2	m			Y[ ] N[ ] X_
6.5	Payload CRC subfield used for error correction of the DMPDU header	6.5.2.2	o			Y[ ] N[ ] X_
6.6	Payload CRC subfield used for error correction of the DMPDU segmentation unit or trailer	6.5.2.2	pr			Y[ ] N[ ] X_

7 DQDB layer facilities

This Clause contains the conformance requirements for the DQDB layer facilities of any implementation for which compliance with ETS 300 212 [2] is claimed.

7.1 Timers

Table 18

Item	Feature	Reference	Status	Predicate	Value	Support
7.1	Timer Reassembly IMPDU Timer (RIT)	7.1.1	m			Y[ ] N[ ] X_
7.2	Setting RIT	7.3.1	o			Y[ ] N[ ] X_
7.3	Start RIT	7.1.1	m			Y[ ] N[ ] X_
7.4	Clear RIT	7.1.1	m			Y[ ] N[ ] X_

7.1.1 Reassembly IMPDU timer

7.1.2 Head of bus arbitration timer (Timer_H)

Table 19

Item	Feature	Reference	Status	Predicate	Value	Support
7.1	Timer_H	7.1.2	c: m (NOTE)	HOB or HOB_CC		Y[ ] N[ ] X_
7.2	Setting Timer_H	7.3.1	o			Y[ ] N[ ] X_
7.3	Start/Stop Timer_H	10.2.3.4	c: m (NOTE)	HOB or HOB_CC		Y[ ] N[ ] X_
NOTE: Two head of bus arbitration timers (one for each bus) shall be available for each Configuration Control (CC) function which can support a head of bus function.						

7.2 Counters

7.2.1 Request counter (REQ_I_CNTR)

Table 20

Item	Feature	Reference	Status	Predicate	Value	Support
7.1	6x REQ_I_CNTR	7.2.1	m (NOTE)		0..65535	Y[ ] N[ ] X1
7.2	Initialise counters	7.2.1	m		0	Y[ ] N[ ] X1
7.3	Minimum saturation of counters	7.2.1	m		0	Y[ ] N[ ] X1
7.4	Maximum saturation of counters	7.2.1	m		65535	Y[ ] N[ ] X1
NOTE: Two independent request counters (one for each bus) shall be available at each priority level (0,1,2) for MultiPoint (MTP) compliant equipment.						

7.2.2 Count-down counter (CD_I_CNTR)

Table 21

Item	Feature	Reference	Status	Predicate	Value	Support
7.1	6x CD_I_CNTR	7.2.2	m (NOTE)		0..65535	Y[ ] N[ ] X1
7.2	Initialise counters	7.2.2	m		0	Y[ ] N[ ] X1
7.3	Minimum saturation of counters	7.2.2	m		0	Y[ ] N[ ] X1
7.4	Maximum saturation of counters	7.2.2	m		65535	Y[ ] N[ ] X1
NOTE: Two independent Count-down counters (one for each bus) shall be available at each priority level (0,1,2) for MultiPoint (MTP) compliant equipment.						

7.2.3 Local request queue counter (REQ_I_Q)

Table 22

Item	Feature	Reference	Status	Predicate	Value	Support
7.1	6x REQ_I_Q	7.2.3	m (NOTE)		0..255	Y[ ] N[ ] X_
7.2	Initialise counters	7.2.3	m		0	Y[ ] N[ ] X_
7.3	Minimum saturation of counters	7.2.3	m		0	Y[ ] N[ ] X_
7.4	Maximum saturation of counters	7.2.2	m		255	Y[ ] N[ ] X_

NOTE: Two independent local request queue counters shall be available at each priority level (0,1,2).

7.2.4 Page counter (PAGE_CNTR)

Table 23

Item	Feature	Reference	Status	Predicate	Value	Support
7.1	PAGE_CNTR_HOBA	7.2.4	c: m	HOB	0..1023	Y[ ] N[ ] X_
			n/a	NOT HOB		
7.2	Initialise PAGE_ CNTR_HOBA	7.2.4	c: m	HOB	0	Y[ ] N[ ] X_
			n/a	NOT HOB		
7.3	Reset PAGE_CNTR_ HOBA	7.2.4	c: m	HOB	0	Y[ ] N[ ] X_
			n/a	NOT HOB		
7.4	2x PAGE_CNTR_x	7.2.4	m (NOTE)		0..1023	Y[ ] N[ ] X_
7.5	Initialise PAGE_ CNTR_x	7.2.4	m		0	Y[ ] N[ ] X_
7.6	Reset PAGE_CNTR_x	7.2.4	m		0	Y[ ] N[ ] X_

NOTE: Two counters PAGE_CNTR_x are required in each node, one for each bus. The two counters PAGE_CNTR_HOBA are required only if the head of bus function is supported. Two independent local request queue counters shall be available at each priority level (0,1,2).

7.2.5 Bandwidth balancing counter (BWB_CNTR)

Table 24

Item	Feature	Reference	Status	Predicate	Value	Support
7.1	2x BWB_CNTR	7.2.5	c: m (NOTE)		0..63	Y[ ] N[ ] X1
7.2	Initialise counters	7.2.3	m		0	Y[ ] N[ ] X1

NOTE: Two independent bandwidth balancing counters (one for each bus) shall be available at each node for MultiPoint (MTP) compliant equipment.

7.2.6 Transmit sequence number counter (TX_SEQUENCE_NUM)

Table 25

Item	Feature	Reference	Status	Predicate	Value	Support
7.1	TX_SEQUENCE_NUM	7.2.6	m		0..15	Y[ ] N[ ] X_
7.2	Reset TX_SEQUENCE_NUM	7.2.6	m		0	Y[ ] N[ ] X_
7.3	Initialise TX_SEQUENCE_NUM	7.2.6	m		0	Y[ ] N[ ] X_

7.3 System parameters

Table 26

Item	Parameter	Reference	Status	Predicate	Value	Support
7.1	RIT_PERIOD	7.3.1	m		default 0,7 s	Y[ ] N[ ] X_
7.2	TIMER_H_PERIOD	7.3.2	m		default 5 s	Y[ ] N[ ] X_
7.3	QOS_MAP	7.3.3	m		0..7	Y[ ] N[ ] X_
7.4	RESERVED_MID_PAGES	7.3.4	m		0..1023	Y[ ] N[ ] X_
7.5	MAX_MID_PAGES	7.3.5	m		default 1	Y[ ] N[ ] X_
7.6	BWB_MOD	7.3.6	m		0..64,default 8	Y[ ] N[ ] X_

The above system parameters may be operated upon by the network management. However, they shall be initialised to the default values at/before installation.

7.4 Flags

Table 27

Item	Parameter	Reference	Status	Predicate	Value	Support
7.1	CC_12_CONTROL	7.4.1	c: m	NOT HOB AND NOT CC_D	default = disabled	Y[ ] N[ ] X_
			o	HOB AND NOT CC_D	normal / disabled	Y[ ] N[ ] X_
7.2	CC_D2_CONTROL	7.4.2	c: m	CC_D	default = normal	Y[ ] N[ ] X_
7.3	CRC32_GEN_CONTROL	7.4.3	m		default = off	Y[ ] N[ ] X_
7.4	CRC32_GEN_CONTROL	7.4.3	o		on / off	Y[ ] N[ ] X_
7.5	CRC32_CHECK_ CONTROL	7.4.4	m		default = off	Y[ ] N[ ] X_
7.6	CRC32_CHECK_ CONTROL	7.4.4	o		on / off	Y[ ] N[ ] X_

7.5 Resource status indicators

7.5.1 Configuration control status indicator (CC_STATUS)

Table 28

Item	Parameter	Reference	Status	Predicate	Value	Support
7.1	CC_STATUS_1	7.5.1	m		active / inactive default = inactive	Y[ ] N[ ] X_
7.2	CC_STATUS_2	7.5.1	c: m	NOT CC_D	default = inactive	Y[ ] N[ ] X_
			m	CC_D	default active	Y[ ] N[ ] X_
7.3	CC_STATUS_2	7.5.1	m		active / inactive	Y[ ] N[ ] X_
7.4	CC_STATUS_D	7.5.1	m	MTP	default active	Y[ ] N[ ] X_

7.5.2 Head of bus operation indicator (HOB_OPERATION)

Table 29

Item	Parameter	Reference	Status	Predicate	Value	Support
7.1	HOB_OPERATION	7.5.2	c: m	NOT HOB	NULL	Y[ ] N[ ] X2
			c: m	HOB	as per IEEE Standard 802.6 [1], section 10.2	Y[ ] N[ ] X_
7.2	HOB_OPERATION_D	7.5.2	m		default = DSG&HOBA (NOTE 1)	Y[ ] N[ ] X_
7.3	HOB_OPERATION_1	7.5.2	m		default = NULL	Y[ ] N[ ] X_
7.4	HOB_OPERATION_2	7.5.2	c: m	CC_D	HOBB (NOTE 2) (at power up)	Y[ ] N[ ] X_
			c: m	NOT CC_D	NULL	Y[ ] N[ ] X_

NOTE 1: The abbreviation DSG&HOBA is used in this table for DEFAULT_SLOT_GENERATOR and HEAD_OF_BUS_A.

NOTE 2: The abbreviation HOBB is used in this table for HEAD_OF_BUS_B.

7.5.3 Link status indicator (LINK_STATUS)

Table 30

Item	Parameter	Reference	Status	Predicate	Value	Support
7.1	LINK_STATUS	7.5.3	m		default DOWN (at power up)	Y[ ] N[ ] X_
			m		UP / DOWN	Y[ ] N[ ] X_

7.5.4 External timing source indicator (ETS_STATUS)

Table 31

Item	Parameter	Reference	Status	Predicate	Value	Support
7.1	ETS_STATUS	7.5.4	m		UP / DOWN	Y[ ] N[ ] X_

8 DQDB layer operation

This Clause contains the conformance requirements for the DQDB layer operation of any implementation for which compliance with ETS 300 212 [2] is claimed.

8.1 Distributed queue operation

8.1.1 Distributed queue state machine (DQSM_X_I)

(See NOTE).

There shall be one Distributed Queue State Machine (DQSM) for each bus (X=A,B) and for each priority level I (I=0,1,2) which is operated according to IEEE Standard 802.6 [1], section 8.1.1.

NOTE: DQSM_X_I means the DQSM for bus X (X=A or B) at priority level I (I=0,1,2).

Table 32

Item	Feature	Reference	Status	Predicate	Value	Support
8.1	DQSM_A_0	8.1.1	m			Y[ ] N[ ] X1
8.2	DQSM_A_1	8.1.1	m			Y[ ] N[ ] X1
8.3	DQSM_A_2	8.1.1	m			Y[ ] N[ ] X1
8.4	DQSM_B_0	8.1.1	m			Y[ ] N[ ] X1
8.5	DQSM_B_1	8.1.1	m			Y[ ] N[ ] X1
8.6	DQSM_B_2	8.1.1	m			Y[ ] N[ ] X1
8.7	Detect REQ_X_I (NOTE 1)	8.1.1	m			Y[ ] N[ ] X1
8.8	Set REQ_X_I	8.1.1	m			Y[ ] N[ ] X1
8.9	Detect BUSY_X (NOTE 2)	8.1.1	m			Y[ ] N[ ] X_
8.10	Set BUSY_X	8.1.1	m			Y[ ] N[ ] X_

NOTE 1: Detect/set REQ_X_I means the capability to detect/set a request bit on bus X (X=A or B) at priority level I (I=0,1,2).

NOTE 2: Detect/set BUSY_X means the capability to detect/set the busy bit on bus X (X=A or B).

8.1.2 REQ queue machine (RQM_X_I)

The request queue machine RQM_X_I is the machine for bus X (X=A or B) at priority level I (I=0,1,2). Operation of RQM_X_I shall be according to IEEE Standard 802.6 [1], section 8.1.2.

Table 33

Item	Feature	Reference	Status	Predicate	Value	Support
8.1	RQM_A_0	8.1.2	m			Y[ ] N[ ] X1
8.2	RQM_A_1	8.1.2	m			Y[ ] N[ ] X1
8.3	RQM_A_2	8.1.2	m			Y[ ] N[ ] X1
8.4	RQM_B_0	8.1.2	m			Y[ ] N[ ] X1
8.5	RQM_B_1	8.1.2	m			Y[ ] N[ ] X1
8.6	RQM_B_2	8.1.2	m			Y[ ] N[ ] X1

8.1.3 Bandwidth balancing machine (BWBM_X)

Operation of a BWBM_X shall be according to IEEE Standard 802.6 [1].

Table 34

Item	Feature	Reference	Status	Predicate	Value	Support
8.1	BWBM_A (NOTE)	8.1.3	m			Y[ ] N[ ] X1
8.2	BWBM_B	8.1.3	m			Y[ ] N[ ] X1
NOTE: BWBM_X is the bandwidth balancing machine for bus X (X=A or B).						

8.2 Reassembly operation

8.2.1 Reassembly state machine

The reassembly state machine shall be operated as specified in IEEE Standard 802.6 [1], section 8.2.1.

Table 35

Item	Feature	Reference	Status	Predicate	Value	Support
8.1	IG_FLAG	8.2.1	m		Individual / Group	Y[ ] N[ ] X_
8.2	RX_SEQUENCE_NUM	8.2.1	m		0..15 mod 16	Y[ ] N[ ] X_
8.3	Reassembly State Machine (RSM)	8.2.1	m			Y[ ] N[ ] X_

8.3 Segment header check sequence processing

Table 36

Item	Feature	Reference	Status	Predicate	Value	Support
8.1	Error Detection	8.3	m		n/a	Y[ ] N[ ] X_
8.2	Error Correction	8.3	o			Y[ ] N[ ] X_
8.3	HCS_DSM (NOTE)	8.3	c: m	8.23		Y[ ] N[ ] X_
NOTE: HCS_DSM is the Header Check Sequence Decoder State Machine. If error correction is implemented, the HCS_DSM shall be in accordance with IEEE Standard 802.6 [1], section 8.3.						

9 DQDB layer management interface

This Clause contains the conformance requirements for the DQDB Layer Management Interface (LMI) implementation for which conformance with IEEE Standard 802.6 [1] is claimed. The DQDB LMI is described by a set of generic primitives that are used to convey LMI to and from node components subject to management. The DQDB LMI requires a subset of the primitives specified in IEEE project P802.1 B: "LAN/MAN Management", Draft D19, July 26, 1991.

9.1 DQDB layer management primitives in support of virtual channel identifier managements functions

LM-ACTION invoke (CL_VCI_ADD).

Table 37

Item	Feature	Reference	Status	Predicate	Value	Support
9.1	LM-ACTION invoke (CL_VCI_ADD)	9.1.1, 9.2.1, 6.3.1.1	c: m	ACLVCI		Y[ ] N[ ] X_
ACLVCI = Additional Connectionless Virtual Channel Identifier.						

Table 38

Item	Primitive Parameters	Reference	Status	Predicate	Value	Support
9.1	Convergence_ function_type	9.2.1	c: m	ACLVCI		Y[ ] N[ ] X_
9.2	VCI	9.2.1	c: m	ACLVCI	1-(220-1)	Y[ ] N[ ] X_
9.3	Type	9.2.1	c: m	ACLVCI	Transmit or receive	Y[ ] N[ ] X_
9.4	Mapping criteria	9.2.1	c: m	ACLVCI		Y[ ] N[ ] X_
ACLVCI = Additional Connectionless Virtual Channel Identifier.						

Additional requirements:

Table 39

Item	Feature	Reference	Status	Predicate	Value	Support
9.1	Each transmit VCI shall be uniquely associated with a single connection-less convergence function	9.2.1	c: m	ACLVCI		Y[ ] N[ ] X_
9.2	A unique mapping shall exist between a connectionless convergence function and each transmit VCI associated with it	9.2.1	c: m	ACLVCI		Y[ ] N[ ] X_
ACLVCI = Additional Connectionless Virtual Channel Identifier.						

LM-ACTION reply (CL_VCI_ADD).

Table 40

Item	Feature	Reference	Status	Predicate	Value	Support
9.1	LM-ACTION reply (CL_VCI_ADD)	9.1.1, 9.2.1, 6.3.1.1	c: m	ACLVCI		Y[ ] N[ ] X_
ACLVCI = Additional Connectionless Virtual Channel Identifier.						

Table 41

Item	Primitive Parameters	Reference	Status	Predicate	Value	Support
9.1	Status	9.1.1.1, 9.2.1	c: m	ACLVCI	Successful or unsuccessful	Y[ ] N[ ] X_
9.2	Reason	9.1.1.1, 9.2.1	c: m	ACLVCI		Y[ ] N[ ] X_
ACLVCI = Additional Connectionless Virtual Channel Identifier.						

LM-ACTION invoke (CL_VCI_Delete).

Table 42

Item	Feature	Reference	Status	Predicate	Value	Support
9.1	LM-ACTION invoke (CL_VCI_Delete)	9.2.2, 6.3.1.1	c: m	ACLVCI		Y[ ] N[ ] X_
ACLVCI = Additional Connectionless Virtual Channel Identifier.						

Table 43

Item	Primitive Parameters	Reference	Status	Predicate	Value	Support
9.1	VCI	9.2.2	c: m	ACLVCI	1-(220-1)	Y[ ] N[ ] X_
9.2	Type	9.2.2	c: m	ACLVCI	transmit or receive	Y[ ] N[ ] X_
ACLVCI = Additional Connectionless Virtual Channel Identifier.						

LM-ACTION reply (CL_VCI_Delete).

Table 44

Item	Feature	Reference	Status	Predicate	Value	Support
9.1	LM-ACTION reply (CL_VCI_Delete)	9.1.1.1, 9.2.2	c: m	ACLVCI		Y[ ] N[ ] X_
ACLVCI = Additional Connectionless Virtual Channel Identifier.						

Table 45

Item	Primitive Parameters	Reference	Status	Predicate	Value	Support
9.1	Status	9.1.1.1, 9.2.2	c: m	ACLVCI	Successful or unsuccessful	Y[ ] N[ ] X_
9.2	Reason	9.1.1.1, 9.2.2	c: m	ACLVCI		Y[ ] N[ ] X_
ACLVCI = Additional Connectionless Virtual Channel Identifier.						

LM-ACTION invoke (Open_CE_ICF).

Table 46

Item	Feature	Reference	Status	Predicate	Value	Support
9.1	LM-ACTION invoke (Open_CE_ICF)	5.2, 9.1.1.1, 9.2.3	c: m	ICF		Y[ ] N[ ] X_

Table 47

Item	Primitive Parameters	Reference	Status	Predicate	Value	Support
9.1	CEP_ID	5.2, 9.2.3	c: m	ICF		Y[ ] N[ ] X_
	TRANSMIT:	5.2, 9.2.3				
9.2	TX-BUS		c: m	ICF	BUS-A or BUS-B	Y[ ] N[ ] X_
9.3	TX-VCI		c: m	ICF	1-(220-1)	Y[ ] N[ ] X_
9.4	Offset		c: m	ICF	1-48	Y[ ] N[ ] X_
	RECEIVE:	5.2, 9.2.3				
9.5	TX-BUS		c: m	ICF	BUS-A or BUS-B	Y[ ] N[ ] X_
9.6	TX-VCI		c: m	ICF	1-(220-1)	Y[ ] N[ ] X_
9.7	Offset		c: m	ICF	1-48	Y[ ] N[ ] X_

LM-ACTION reply (Open_CE_ICF).

Table 48

Item	Feature	Reference	Status	Predicate	Value	Support
9.1	LM-ACTION reply (Open_CE_ICF)	9.1.1.1, 9.2.3	c: m	ICF		Y[ ] N[ ] X_

Table 49

Item	Primitive Parameters	Reference	Status	Predicate	Value	Support
9.1	Status	9.1.1.1, 9.2.3	c: m	ICF	successful or unsuccessful	Y[ ] N[ ] X_
9.2	Reason	9.1.1.1, 9.2.3	c: m	ICF		Y[ ] N[ ] X_

LM-ACTION invoke (Open_CE_COCF).

Table 50

Item	Feature	Reference	Status	Predicate	Value	Support
9.1	LM-ACTION invoke (Open_CE_COCF	5.3, 9.1.1.1, 9.2.4	c: m	COCF		Y[ ] N[ ] X_

Table 51

Item	Primitive Parameters	Reference	Status	Predicate	Value	Support
9.1	CEP_ID	5.3, 9.2.4	c: m	COCF		Y[ ] N[ ] X_
9.2	TX_BUS	5.3, 9.2.4	c: m	COCF	BUS_A or BUS_B	Y[ ] N[ ] X_
9.3	TX_VCI	5.3, 9.2.4	c: m	COCF	1-(220-1)	Y[ ] N[ ] X_
9.4	RX_BUS	5.3, 9.2.4	c: m	COCF	BUS_A or BUS_B	Y[ ] N[ ] X_
9.5	RX_VCI	5.3, 9.2.4	c: m	COCF	1-(220-1)	Y[ ] N[ ] X_
9.6	TX_segment_priority	5.3, 9.2.4	c: m	COCF		Y[ ] N[ ] X_
9.7	TX_access_queue_ priority	5.3, 9.2.4	c: m	COCF	0, 1, 2	Y[ ] N[ ] X_

LM-ACTION reply (Open_CE_COCF).

Table 52

Item	Feature	Reference	Status	Predicate	Value	Support
9.1	LM-ACTION reply (Open_CE_COCF)	5.3, 9.1.1.1, 9.2.4	c: m	COCF		Y[ ] N[ ] X_

Table 53

Item	Primitive Parameters	Reference	Status	Predicate	Value	Support
9.1	Status	5.3, 9.1.1.1, 9.2.4	c: m	COCF	successful or unsuccessful	Y[ ] N[ ] X_
9.2	Reason	5.3, 9.1.1.1, 9.2.4	c: m	COCF		Y[ ] N[ ] X_

LM-ACTION invoke (CLOSE_CE).

Table 54

Item	Feature	Reference	Status	Predicate	Value	Support
9.1	LM-ACTION invoke (CLOSE_CE)	5.2, 5.3 9.1.1.1, 9.2.5	c: m	COCF		Y[ ] N[ ] X_

Table 55

Item	Primitive Parameters	Reference	Status	Predicate	Value	Support
9.1	CEP_ID	9.2.5	c: m	ICF or COCF		Y[ ] N[ ] X_

LM-ACTION reply (CLOSE_CE).

Table 56

Item	Feature	Refer.	Status	Predicate	Value	Support
9.1	LM-ACTION reply (CLOSE_CE)	5.2, 5.3 9.1.1.1, 9.2.5	c: m	ICF or COCF		Y[ ] N[ ] X_

Table 57

Item	Primitive Parameters	Reference	Status	Predicate	Value	Support
9.1	Status	5.2, 5.3 9.2.5	c: m	ICF or COCF	successful or unsuccessful	Y[ ] N[ ] X_
9.2	Reason	5.2, 5.3 9.2.5	c: m	ICF or COCF		Y[ ] N[ ] X_

LM-ACTION invoke (PA_VCI_ADD_HOB).

Table 58

Item	Feature	Reference	Status	Predicate	Value	Support
9.1	LM-ACTION invoke (PA_VCI_ADD_HOB)	5.2, 5.4.3.1 9.1.1.1 9.2.6	c: m	HOB		Y[ ] N[ ] X_

Table 59

Item	Primitive Parameters	Reference	Status	Predicate	Value	Support
9.1	VCI	5.2, 5.4.3.1, 9.2.6	c: m	HOB	1-(220-1)	Y[ ] N[ ] X_
9.2	BUS	5.2, 5.4.3.1, 9.2.6	c: m	HOB	BUS-A or BUS-B	Y[ ] N[ ] X_
9.3	Frequency	5.2, 5.4.3.1, 9.2.6	c: m	HOB		Y[ ] N[ ] X_
9.4	Variability	5.2, 5.4.3.1, 9.2.6	c: m	HOB		Y[ ] N[ ] X_

LM-ACTION reply (PA_VCI_ADD_HOB).

Table 60

Item	Feature	Reference	Status	Predicate	Value	Support
9.1	LM-ACTION reply (PA_VCI_ADD_HOB)	5.2, 5.4.3.1, 9.2.7	c: m	HOB		Y[ ] N[ ] X_

Table 61

Item	Primitive Parameters	Reference	Status	Predicate	Value	Support
9.1	Status	5.2, 5.4.3.1, 9.2.7	c: m	HOB	successful or unsuccessful	Y[ ] N[ ] X_
9.2	Reason	5.2, 5.4.3.1, 9.2.7	c: m	HOB		Y[ ] N[ ] X_

LM-ACTION invoke (PA_VCI_Delete_HOB).

Table 62

Item	Feature	Reference	Status	Predicate	Value	Support
9.1	LM-ACTION invoke (PA_VCI_Delete_HOB)	5.2, 5.4.3.1, 9.1.1.1, 9.2.7	c: m	HOB		Y[ ] N[ ] X_

Table 63

Item	Primitive Parameters	Reference	Status	Predicate	Value	Support
9.1	VCI	5.2, 5.4.3.1, 9.2.7	c: m	HOB	1-(220-1)	Y[ ] N[ ] X_
9.2	BUS	5.2, 5.4.3.1, 9.2.7	c: m	HOB	BUS-A, or BUS-B	Y[ ] N[ ] X_

LM-ACTION reply (PA_VCI_DELETE_HOB).

Table 64

Item	Feature	Reference	Status	Predicate	Value	Support
9.1	LM-ACTION reply (PA_VCI_DELETE_HOB)	9.1.1.1, 9.2.7	c: m	HOB		Y[ ] N[ ] X_

Table 65

Item	Primitive Parameters	Reference	Status	Predicate	Value	Support
9.1	Status	5.2, 5.4.3.1, 9.2.7	c: m	HOB	successful or unsuccessful	Y[ ] N[ ] X_
9.2	Reason	5.2, 5.4.3.1, 9.2.7	c: m	HOB		Y[ ] N[ ] X_

9.2 DQDB layer management primitives in support of header extension management functions

The following are primitives and associated parameters used in support of header extension management functions.

LM-ACTION invoke (HEXT_INSTAL).

Table 66

Item	Feature	Reference	Status	Predicate	Value	Support
9.1	LM-ACTION invoke (HEXT_INSTAL)	5.1.1.1. 6.5.1.3 9.3.1	c: m	HEXT		Y[ ] N[ ] X_

Table 67

Item	Primitive Parameters	Reference	Status	Predicate	Value	Support
9.1	Convergence_function _type	5.1.1.1, 6.5.1.3, 9.3.1	c: m	HEXT		Y[ ] N[ ] X_
9.2	HE_value	5.1.1.1, 6.5.1.3, 9.3.1	c: m	HEXT		Y[ ] N[ ] X_
9.3	HE_selection_info	5.1.1.1, 6.5.1.3, 9.3.1	c: m	HEXT		Y[ ] N[ ] X_

Additional requirements:

Table 68

Item	Feature	Reference	Status	Predicate	Value	Support
9.1	Unique header extension field for each request to transfer a convergence function service data unit	5.1.1.1, 6.3.1.2, 9.2.1	c: m	HEXT		Y[ ] N[ ] X_

LM-ACTION reply (HEXT_INSTAL).

Table 69

Item	Primitive Parameters	Reference	Status	Predicate	Value	Support
9.1	Status	5.1.1.1, 6.5.1.3, 9.1.1.1, 9.3.2	c: m	HEXT	successful or unsuccessful	Y[ ] N[ ] X_
9.2	Reason	5.1.1.1, 6.5.1.3, 9.1.1.1, 9.3.2	c: m	HEXT		Y[ ] N[ ] X_

LM-ACTION invoke (HEXT_PURGE).

Table 70

Item	Feature	Reference	Status	Predicate	Value	Support
9.1	LM-ACTION invoke (HEXT_PURGE)	5.1.1.1, 6.5.1.3, 9.3.2	c: m	HEXT		Y[ ] N[ ] X_

Table 71

Item	Primitive Parameters	Reference	Status	Predicate	Value	Support
9.1	Convergence_function _type	5.1.1.1, 6.5.1.3, 9.3.2	c: m	HEXT		Y[ ] N[ ] X_
9.2	HE_value	5.1.1.1, 6.5.1.3, 9.3.2	c: m	HEXT		Y[ ] N[ ] X_

LM-ACTION reply (HEXT_PURGE).

Table 72

Item	Feature	Reference	Status	Predicate	Value	Support
9.1	LM-ACTION reply (HEXT_PURGE)	5.1.1.1, 6.5.1.3, 9.1.1.1, 9.3.2	c: m	HEXT		Y[ ] N[ ] X_

Table 73

Item	Primitive Parameters	Reference	Status	Predicate	Value	Support
9.1	Status	5.1.1.1, 6.5.1.3, 9.1.1.1, 9.3.2	c: m	HEXT	successful or unsuccessful	Y[ ] N[ ] X_
9.2	Reason	5.1.1.1, 6.5.1.3, 9.1.1.1, 9.3.2	c: m	HEXT		Y[ ] N[ ] X_

9.3 DQDB layer management primitives in support of message identifier management functions

The following are primitives and associated parameters used in support of message identifier management functions.

LM-ACTION invoke (MID_PAGE_GET).

Table 74

Item	Feature	Reference	Status	Predicate	Value	Support
9.1	LM-ACTION invoke (MID_PAGE_GET)	5.4.4, 9.4.1, 10.3	m			Y[ ] N[ ] X_

LM-ACTION reply (MID_PAGE_GET).

Table 75

Item	Feature	Reference	Status	Predicate	Value	Support
9.1	LM-ACTION reply (MID_PAGE_GET)	5.4.4, 9.4.2, 10.3	m			Y[ ] N[ ] X_

Table 76

Item	Primitive Parameters	Reference	Status	Predicate	Value	Support
9.1	Status	5.4.4, 9.4.4, 10.3	m		successful or unsuccessful	Y[ ] N[ ] X_
9.2	Mid_page_Id	5.4.4, 9.4.4, 10.3	m			Y[ ] N[ ] X_
9.3	Reason	5.4.4, 9.4.4, 10.3	m			Y[ ] N[ ] X_

LM-ACTION invoke (MID_Page_RELEASE).

Table 77

Item	Feature	Reference	Status	Predicate	Value	Support
9.1	LM-ACTION invoke (MID_PAGE-RELEASE)	5.4.4, 9.4.3, 10.3	m			Y[ ] N[ ] X_

Table 78

Item	Feature	Reference	Status	Predicate	Value	Support
9.1	MID_Page_Id	5.4.4, 9.4.3, 10.3	m			Y[ ] N[ ] X_

LM-ACTION reply (MID_Page_RELEASE).

Table 79

Item	Feature	Reference	Status	Predicate	Value	Support
9.1	LM-ACTION reply (MID_PAGE_RELEASE)	5.4.4, 9.4.4, 10.3	m			Y[ ] N[ ] X_

Table 80

Item	Primitive Parameters	Reference	Status	Predicate	Value	Support
9.1	Status	5.4.4, 9.4.4, 10.3	m		successful or unsuccessful	Y[ ] N[ ] X_
9.2	Mid_page_Id	5.4.4, 9.4.4, 10.3	m			Y[ ] N[ ] X_
9.3	Reason	5.4.4, 9.4.4, 10.3	m			Y[ ] N[ ] X_

LM-Event Notivy (MID_PAGE_LOST).

Table 81

Item	Feature	Reference	Status	Predicate	Value	Support
9.1	LM-Event invoke (MID_PAGE_LOST)	5.4.4, 9.4.5, 10.3	m			Y[ ] N[ ] X_

Table 82

Item	Primitive Parameters	Reference	Status	Predicate	Value	Support
9.1	Mid_page_Id	5.4.4, 9.4.5, 10.3	m			Y[ ] N[ ] X_
9.2	Reason	5.4.4, 9.4.5, 10.3	m			Y[ ] N[ ] X_

9.4 DQDB layer management primitives in support of address management functions

The following are parameters and associated primitives used in support of address management functions.

LM-ACTION invoke (ADDRESS_ADD).

Table 83

Item	Feature	Reference	Status	Predicate	Value	Support
9.1	LM-ACTION invoke (ADDRESS_ADD)	6.5.1.2, 9.5.1	c: m	A-Add		Y[ ] N[ ] X_

Table 84

Item	Primitive Parameters	Reference	Status	Predicate	Value	Support
9.1	Address_Type	6.5.1.2, 9.5.1.	c: m	A-Add	16, 48 or 60 bit	Y[ ] N[ ] X_
9.2	Address	6.5.1.2, 9.5.1	c: m	A-Add		Y[ ] N[ ] X_

LM-ACTION reply (ADDRESS_ADD).

Table 85

Item	Feature	Reference	Status	Predicate	Value	Support
9.1	LM-ACTION reply (ADDRESS_ADD)	6.5.1.2, 9.1.1.1, 9.5.1	c: m	A-Add		Y[ ] N[ ] X_

Table 86

Item	Primitive Parameters	Reference	Status	Predicate	Value	Support
9.1	Status	6.5.1.2, 9.5.1	m		successful or unsuccessful	Y[ ] N[ ] X_
9.2	Reason	6.5.1.2, 9.5.1	m			Y[ ] N[ ] X_

LM-ACTION invoke (ADDRESS-DELETE).

Table 87

Item	Feature	Reference	Status	Predicate	Value	Support
9.1	LM-ACTION invoke (ADDRESS-DELETE)	6.5.1.2, 9.5.2	c: m	A-Add		Y[ ] N[ ] X_

Table 88

Item	Primitive Parameters	Reference	Status	Predicate	Value	Support
9.1	Address_Type	6.5.1.2, 9.5.2	c: m	A-Add	16, 48 or 60 bit	Y[ ] N[ ] X_
9.2	Address	6.5.1.2, 9.5.2	c: m	A-Add		Y[ ] N[ ] X_

LM-ACTION reply (ADDRESS_DELETE).

Table 89

Item	Feature	Reference	Status	Predicate	Value	Support
9.1	LM-ACTION reply (ADDRESS_DELETE)	6.5.1.2, 9.5.2	c: m	A-Add		Y[ ] N[ ] X_

Table 90

Item	Primitive Parameters	Reference	Status	Predicate	Value	Support
9.1	Status	6.5.1.2, 9.5.1	m		successful or unsuccessful	Y[ ] N[ ] X_
9.2	Reason	6.5.1.2, 9.5.1	m			Y[ ] N[ ] X_

9.5 DQDB layer management primitives in support of system management functions

The following are primitives and associated parameters used in support of system management functions.

LM-Set invoke (SYSTEM_PARAMETER).

Table 91

Item	Feature	Reference	Status	Predicate	Value	Support
9.1	LM-Set invoke (SYSTEM_PARA-METER)	9.6	m			Y[ ] N[ ] X_

Table 92

Item	Primitive Parameters	Reference	Status	Predicate	Value	Support
9.1	Parameter_Type	7.1.1, 7.3.1, 9.6.1,	o		R_P	Y[ ] N[ ]
		5.1.1.1, 7.3.3, 9.6.1,	o		T_H_P	Y[ ] N[ ]
		5.1.1.1 7.3.3, 9.6.1	o		Q_M	Y[ ] N[ ]
		7.3.4, 9.6.1, 10.3.2	c: m	HOB	R_M_P	Y[ ] N[ ] X_
		5.4.4, 7.3.5, 9.6.1	o		M_M_P	Y[ ] N[ ]
		5.1.2.1, 8.3.1, 9.6.1	m		B_M	Y[ ] N[ ] X_
9.2	Parameter_Value	7.1.1, 7.3.1,	o		R_P: default ≥ 0,7 seconds	Y[ ] N[ ]
		9.6.1, 5.1.1.1, 7.3.3,	o		T_H_P: default = 5 seconds	Y[ ] N[ ]
		9.6.1, 5.1.1.1 7.3.3, 9.6.1	o		Q_M: default (q_m_j) = 0	Y[ ] N[ ]
		7.3.4, 9.6.1, 10.3.2	c: m	HOB	R_M_P: default = 0; Range = (0,220-1)	Y[ ] N[ ] X_
		5.4.4, 7.3.5, 9.6.1	o		M_M_P: default = 1, Max = (220-1)	Y[ ] N[ ]
		5.1.2.1, 8.3.1, 9.6.1	m		B_M: default = 8, Range = (0,64)	Y[ ] N[ ] X_

Key: R_P: RIT_Period
T_H_P: Timer_H_Period
Q_M: QOS_MAP
R_M_P: Reserved_Mid_Pages
M_M_P: Max_Mid_Pages
B_M: BWB_MOD

9.6 DQDB layer management primitives in support of configuration control management functions

The following are primitives and associated parameters used in support of configuration control functions.

LM-Set invoke (CC_FLAG).

Table 93

Item	Feature	Reference	Status	Predicate	Value	Support
9.1	LM-Set invoke (CC_FLAG)	9.7, 10.2	m			Y[ ] N[ ] X_

Table 94

Item	Primitive Parameters	Reference	Status	Predicate	Value	Support
9.1	Flag_Type	9.7.1, 10.2	c: m	NOT CC_D	CC_12_Control	Y[ ] N[ ] X_
		9.7.1, 10.2	c: m	CC_D	CC_D2_Control	Y[ ] N[ ] X_
9.2	Flag_Value	7.4.1, 9.7.1, 10.2	c: m o	NOT HOB AND NOT CC_D	CC_12_Control: default= disabled	Y[ ] N[ ] X_
		7.4.1, 9.7.1, 10.2	c:o	HOB AND NOT CC_D	CC_12_Control: normal/disabled	Y[ ] N[ ] X_
		9.4.1, 9.7.1, 10.2	c: m	CC_D	CC_D2_Control: default=normal	Y[ ] N[ ] X_

9.7 DQDB layer management primitives in support of CRC32 control flag management functions

The following are primitives and associated parameters used in support of CRC32 control flag management functions.

LM-Set invoke (CRC32_FLAG).

Table 95

Item	Feature	Reference	Status	Predicate	Value	Support
9.1	LM-Set invoke (CRC32_FLAG)	7.4.3, 7.4.4, 9.4	o			Y[ ] N[ ] X_

Table 96

Item	Primitive Parameters	Reference	Status	Predicate	Value	Support
9.1	Flag_Type	7.4.3, 9.8.1,	c: m	9.103	CRC32_GEN_ Control	Y[ ] N[ ] X_
		7.4.4, 9.8.1,	c: m	9.103	CRC32_Check_ Control	Y[ ] N[ ] X_
9.2	Flag_Value Flag_Type=CRC32_Gen_ Control	7.4.3, 9.8.1	c: m	9.103	On or Off	Y[ ] N[ ] X_
	Flag_Type=CRC32_ Check_Control	7.4.3, 9.8.1	c: m	9.103	On or Off	Y[ ] N[ ] X_

9.8 DQDB layer management primitives in support of other management functions

The following are primitives and associated parameters used in support of other management functions.

LM-Set invoke (RESET).

10 DQDB layer management protocol

This Clause contains the conformance requirements for the DQDB layer management protocol of any implementation for which compliance with ETS 300 212 [2] is claimed.

10.1 DQDB layer management information octets

Table 97

Item	Feature	Reference	Status	Predicate.	Value	Support
10.1	TYPE bit	10.1	m		0 or 1 (NOTE)	Y[ ] N[ ] X_
10.2	Bus identification field	10.1.1	m		01 (BUS A) or 10 (BUS B) or 00 (Unknown)	Y[ ] N[ ] X_
10.3	Subnetwork configuration field	10.1.2	m			Y[ ] N[ ] X_
						Y[ ] N[ ] X_
10.4	MID page allocation field	10.1.3	m			
NOTE: Set to alternate values on alternate management information octets.						

10.2 Configuration control protocol

Table 98

Item	Feature	Reference	Status	Predicate	Value	Support
10.1	Generation of subnetwork configuration	10.2.3	m			Y[ ] N[ ] X_
10.2	Default configuration state machine	10.2.4	c: m	CC_D		Y[ ] N[ ] X_
10.3	Configuration control type 2 (NOTE 1)	10.2.5	c: m	CC_D		Y[ ] N[ ] X_
10.4	Configuration control type 2 (NOTE 2)	10.2.5	c: m	HOB		Y[ ] N[ ] X_
10.5	Configuration control type 2 (NOTE 3)	10.2.5	c: m	NOT (CC_D or HOB)		Y[ ] N[ ] X_
10.6	Configuration control type 1 (NOTE 4)	10.2.6	c: m	HOB		Y[ ] N[ ] X_
10.7	Configuration control type 1 (NOTE 3)	10.2.6	c: m	NOT (CC_D or HOB)		Y[ ] N[ ] X_
NOTE 1: With CC_D2_Control set to equal NORMAL.						
NOTE 2: With CC_12_Control allowed to equal NORMAL.						
NOTE 3: With CC_12_Control fixed at DISABLED.						
NOTE 4: With CC_12_Control allowed to equal NORMAL.						

10.3 Message identifier page allocation protocol

Table 99

Item	Feature	Reference	Status	Predicate	Value	Support
10.1	Page counter state machine for head of bus A	10.3.1	c: m	HOB or HOB_CC		Y[ ] N[ ] X_
10.2	Page reservation sate machine for head fo bus A	10.3.2	c: m	HOB or HOB_CC		Y[ ] N[ ] X_
10.3	Page counter modulus operation for head of bus A	10.3.3	c: m	HOB or HOB_CC		Y[ ] N[ ] X_
10.4	Page counter state machine for bus A or bus B	10.3.4	m			Y[ ] N[ ] X_
10.5	Keep page state machine	10.3.5	m			Y[ ] N[ ] X_
10.6	Get page state machine	10.3.6	m			Y[ ] N[ ] X_

11 Physical layer principles of operation

This Clause contains the conformance requirements for the physical layer principles of operation of any implementation for which compliance with ETS 300 212 [2] is claimed.

Table 100

Item	Feature	Reference	Status	Predicate	Value	Support
11.1	Transmission links duplex with identical slot rates	11.3	m			Y[ ] N[ ] X_
11.2	Physical layer connection state machine	11.3.1, table 11.1 figure 11.1	o			Y[ ] N[ ] X_
11.3	Link status signal	11.3.2	m			Y[ ] N[ ] X_

11.1 Physical layer maintenance functions

Table 101

Item	Feature	Reference	Status	Predicate	Value	Support
11.1	Physical layer monitors node operation per section 4.3 of IEEE Standard 802.6 [1]	11.5.1, 4.3	m			Y[ ] N[ ] X_
11.2	Node isolation provided	11.5.2	m			Y[ ] N[ ] X1
11.3	Physical layer monitors error performance	11.5.3	m			Y[ ] N[ ] X_
11.4	Nodes not supporting HOB can signal downstream in the event of failure	11.4	m			Y[ ] N[ ] X2

11.2 Physical layer facilities

Table 102

Item	Feature	Reference	Status	Predicate	Value	Support
11.1	Physical Layer Connection State Machine (PLCSM) control flags supported	11.6.1	c: m	11.2		Y[ ] N[ ] X_
11.2	Head of bus capable flag supported	11.6.2	m			Y[ ] N[ ] X_

Annex A (normative): Coding of the PI field

PI Range	Protocol Entity
1	Reserved for Logical Link Control
2	Reserved for MAN layer management (see NOTE 1)
3	Reserved for ISO TR 9577 "Protocol identification in the network layer"
44-47	Reserved for network usage (see NOTE 2)
48-63	Reserved for use by local administration (see NOTE 1)
Other values	Reserved for further standardisation

NOTE 1: No filtering is required by the network on the basis of these values.

NOTE 2: These values shall never be set by a DQDB user. Any IMPDU having the PI field set to any of these values shall be discarded by the network.

History

Document history	
March 1994	First Edition
March 1996	Converted into Adobe Acrobat Portable Document Format (PDF)