

# INTERNATIONAL STANDARD

# ISO/IEC 8208

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**AMENDMENT 3**  
1991-06-01

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## Information technology — Data communications — X.25 Packet Layer Protocol for Data Terminal Equipment

### AMENDMENT 3: Conformance requirements

*Technologies de l'information — Communication de données — Protocole X.25 de  
couche paquet pour terminal de données*

*AMENDEMENT 3: Prescriptions de conformité*



Reference number  
ISO/IEC 8208 : 1990/Amd.3 : 1991 (E)

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## Foreword

ISO (the International Organization for Standardization) and IEC (the International Electrotechnical Commission) form the specialized system for worldwide standardization. National bodies that are members of ISO or IEC participate in the development of International Standards through technical committees established by the respective organization to deal with particular fields of technical activity. ISO and IEC technical committees collaborate in fields of mutual interest. Other international organizations, governmental and non-governmental, in liaison with ISO and IEC, also take part in the work.

In the field of information technology, ISO and IEC have established a joint technical committee, ISO/IEC JTC 1. Draft International Standards adopted by the joint technical committee are circulated to national bodies for voting. Publication as an International Standard requires approval by at least 75 % of the national bodies casting a vote.

Amendment 3 to International Standard ISO/IEC 8208 : 1990 was prepared by Joint Technical Committee ISO/IEC JTC 1, *Information technology*.

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## Introduction

This amendment to ISO/IEC 8208: 1990 consists of four items to be added to ISO/IEC 8208:1990. The two main items are a new clause 21 which states the conformance requirements for implementations of ISO/IEC 8208, and a new annex containing the Protocol Implementation Conformance Statement (PICS) proforma for ISO/IEC 8208:1990. The other two items add related material to clauses 1 and 2 (Scope and Normative references). The remaining clauses 3 to 20, and the present annexes, of ISO/IEC 8208:1990 are unchanged by this amendment.

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# Information technology — Data communications — X.25

## Packet Layer Protocol for Data Terminal Equipment

### AMENDMENT 3: Conformance requirements

*Instructions for amending ISO/IEC 8208 : 1990 are given in italics and numbered from 1 to 4; clause numbers and titles in this amendment correspond to those in ISO/IEC 8208 : 1990.*

## 1 Scope

*1. Add the following paragraph at the end of clause 1, Scope.*

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. This International Standard provides the PICS proforma in compliance with the relevant requirements, and in accordance with the relevant guidance, given in ISO/IEC 9646-2.

## 2 Normative references

*2. Add the following references in clause 2, Normative references, after that for ISO/IEC 9574:1989.*

ISO/IEC 9646-1:1991, *Information technology — OSI conformance testing methodology and framework — Part 1: General concepts.*

ISO/IEC 9646-2:1991, *Information technology — OSI conformance testing methodology and framework — Part 2: Abstract test suite specification.*

*3. Add the following new clause 21.*

## 21 Conformance

### 21.1 Static conformance

NOTE — Many DTE capabilities are optional. Designers of DTEs should be aware that use by a DTE of certain options to the exclusion of others may adversely affect the DTE's general interconnection capabilities, since complementary options may not be supported by the DXE or remote DTE (for example, the use of

only modulo 128 packet sequencing, or use of only Fast Select in call setup).

#### 21.1.1 General requirements

A DTE that claims conformance to this International Standard shall implement:

- a) either Permanent Virtual Circuit Service or Virtual Call Service (and may support both);
- b) operation in either a DTE/DCE or DTE/DTE environment (and may support both);
- c) in the case of operation in a DTE/DTE environment, operation with the role as DTE or DCE either
  - 1) initialized to DTE, or
  - 2) initialized to DCE, or
  - 3) dynamically selected according to the procedures in 4.5

(and may support more than one of these methods of role selection);

d) either modulo 8 packet sequencing or modulo 128 packet sequencing (and may support both);

e) the functions specified in table 37 as Mandatory or as Conditional when the relevant conditions apply, according to the procedures specified in the clauses to which the table items refer;

f) the timers and retransmission counters specified in table 38 as Mandatory, or as Conditional when the relevant conditions apply;

g) the mapping onto the Data Link Layer as specified in clause 3, third items (a) to (c); 3.3 first item (d); clause 10; and 12.1 (Data Link Layer Information Fields, Data Link Service data units)

Such a DTE shall not implement the functions specified in table 37 as Prohibited, when the relevant conditions apply.

Table 37 — DTE capabilities for static conformance

| Item no. | DTE capability [ Clauses specifying the corresponding procedures ]                                                              | Service:           |                    |
|----------|---------------------------------------------------------------------------------------------------------------------------------|--------------------|--------------------|
|          |                                                                                                                                 | PVC                | VC                 |
| 1        | Restarting the packet layer:                                                                                                    |                    |                    |
| 1a       | - as initiator [ 4, 4.1, 4.3, 4.4 ]                                                                                             | M                  | M                  |
| 1b       | - as responder [ 4, 4.2, 4.3, 4.4 ]                                                                                             | M                  | M                  |
| 2        | Support of DIAGNOSTIC packet:                                                                                                   |                    |                    |
| 2a       | - receipt [ 11.1 ]                                                                                                              | M                  | M                  |
| 2b       | - sending [ 11.1 ]                                                                                                              | /DCE: X<br>/DTE: O | /DCE: X<br>/DTE: O |
| 3        | Virtual Call setup:                                                                                                             |                    | [M]                |
| 3a       | - initiating an outgoing VC, with subsequent acceptance or rejection [ 5, 5.2.1, 5.2.4, 5.2.5, 5.5.2, 5.5.4 ] (Note 1)          | -                  | O                  |
| 3b       | Receiving an incoming VC and responding by:                                                                                     |                    |                    |
| 3b       | - acceptance [ 5, 5.2.2, 5.2.3, 5.2.5 ] (Note 1)                                                                                | -                  | O                  |
| 3c       | - rejection [ 5, 5.2.2, 5.2.5, 5.3, 5.5, 5.5.1, 5.5.3, 5.5.4 ] (Notes 1, 2)                                                     | -                  | O                  |
| 4        | Aborting an outgoing VC attempt, by clearing [ 5.4, 5.5, 5.5.1, 5.5.3, 5.5.4 ] (Note 3)                                         |                    | O                  |
| 5        | Clearing an established VC (Note 3)                                                                                             |                    |                    |
| 5a       | - as initiator [ 5.5, 5.5.1, 5.5.3, 5.5.4 ]                                                                                     | -                  | O                  |
| 5b       | - as responder [ 5.5, 5.5.2, 5.5.4 ]                                                                                            | -                  | O                  |
| 6        | Response to errors and unsupported packets on an assigned logical channel                                                       | -                  | [M]                |
|          | - expiry of T21 [ 5.2.1, 5.4 ] or R22 [ 8.1 ]                                                                                   |                    |                    |
|          | - received packets causing the ERROR procedure in Call Setup and Call Clearing states [ table 33 ]                              |                    |                    |
|          | - received CLEAR INDICATION if clearing as responder is not supported (item 5b)                                                 |                    |                    |
|          | - received RESET INDICATION if resetting as responder is not supported (item 8b)                                                |                    |                    |
|          | by:                                                                                                                             |                    |                    |
| 6a       | - initiating clearing                                                                                                           |                    | O                  |
| 6b       | - initiating restarting (Notes 4, 5, 6, 7)                                                                                      |                    | O                  |
| 6c       | - other                                                                                                                         |                    | X                  |
| 7        | Response to other errors and to receipt of other unsupported packets, or fields of packets, on an assigned logical channel, by: | [M]                | [M]                |
| 7a       | - initiating clearing [ 6.3, 6.4, 6.6, 6.8.1, 6.8.2, 7.1.3, 7.1.4, 8.2, 11.2.1, 13.4.1, tables 34, 35, 36 ] (Notes 5, 6, 7, 8)  | -                  | O                  |
| 7b       | - initiating restarting                                                                                                         | O                  | O                  |
| 7c       | - initiating resetting                                                                                                          | O                  | O                  |
| 7d       | - other                                                                                                                         | X                  | X                  |
| 8        | Resetting a logical channel:                                                                                                    |                    |                    |
| 8a       | - as initiator [ 8, 8.1, 8.3, 8.4 ] (Note 9)                                                                                    | O                  | O                  |
| 8b       | - as responder [ 8, 8.2, 8.3, 8.4 ] (Note 10)                                                                                   | O                  | O                  |

Where:

M = Mandatory      X = Prohibited      O = Optional  
 [M] = at least one of the items in this group shall be supported  
 - = not applicable to the PVC service  
 /DCE: = specification for operation in a DTE/DCE environment  
 /DTE: = specification for operation in a DTE/DTE environment

## NOTES

- The reference to 5.2.5 (call collision) applies only if two-way logical channels are supported.
- Rejection because of errors is covered by item 6.

Table 37 (concluded)

- 3 Although many implementations that support VCs will be designed to implement call clearing as a matter of course, clearing is classed as optional because implementations are free to initiate a restart at any time; some implementations, therefore, may exercise this freedom in situations where call clearing would otherwise apply.
- 4 This item does not include unrecognized or unsupported facility codes within a Facilities Field (15.1).
- 5 Where optional capabilities are specified for these items, the DTE may choose any permitted option on each occasion that an error, etc., occurs, independently of the options chosen on other occasions or for other errors, etc.
- 6 Packets with LCI = 0 are excluded, since that is not an assigned logical channel (figure 1).
- 7 The clauses and tables listed are those specifying the occurrence of errors: items 5, 8 and 9 cover the error procedures themselves.
- 8 Although many implementations will be designed to reset on the errors covered by item 7, resetting is classed as optional in item 7 because implementations are free to initiate a restart, or to initiate clearing of a virtual call, at any time; some implementations, therefore, may exercise this freedom in situations where resetting would otherwise apply.
- 9 Initiation of resetting is optional: a) because of the considerations in Note 8 with respect to events internal to the packet layer; and b) because initiation of resetting on request from the higher-layer entity is intrinsically optional, in that an implementation could be designed for use specifically by a higher-layer entity that in turn is designed never to request resetting.
- 10 Although many implementations will be designed to reset a logical channel by responding to a reset, response to resetting is classed as optional because implementations are free to initiate restarting, or to initiate clearing of a virtual call, at any time; some implementations, therefore, may exercise this freedom in situations where resetting would otherwise apply.

Table 38 - Static conformance: required timers and retransmission counters

|     |                                     |     |     |                                             |     |
|-----|-------------------------------------|-----|-----|---------------------------------------------|-----|
| T20 | Restart Request Response Timer      | and | R20 | Restart Request Retransmission Counter      | M   |
| T21 | Call Request Response Timer         |     |     |                                             | C.1 |
| T22 | Reset Request Response Timer        | and | R22 | Reset Request Retransmission Counter        | C.2 |
| T23 | Clear Request Response Timer        | and | R23 | Clear Request Retransmission Counter        | C.3 |
| T24 | Window Status Transmission Timer    |     |     |                                             | C.4 |
| T25 | Window Rotation Timer               | and | R25 | Data Packet Retransmission Counter          | C.5 |
| T26 | Interrupt Response Timer            |     |     |                                             | C.6 |
| T27 | Reject Response Timer               | and | R27 | Reject Retransmission Counter               | C.7 |
| T28 | Registration Request Response Timer | and | R28 | Registration Request Retransmission Counter | C.8 |

Where: M = Mandatory C.n = Conditional, as follows:

- C.1 = required if the DTE initiates Virtual Calls
- C.2 = required if the DTE initiates resetting
- C.3 = required if the DTE implements the Virtual Call service and initiates clearing
- C.4 = required if the DTE implements the optional procedure for window status transmission, specified in 11.2.2
- C.5 = required if the DTE implements either of the optional procedures relating to the receipt of window rotation information, specified in 11.2.1
- C.6 = required if the DTE supports sending of Interrupt data
- C.7 = required if the DTE supports the optional user facility for Packet Retransmission
- C.8 = required if the DTE supports the optional user facility for On-line Facility Registration

### 21.1.2 Options

A DTE that claims conformance to this International Standard is not required to:

- a) send DIAGNOSTIC packets (3.3, second item (d); 11.1);
- b) support any optional user facilities (clause 13);
- c) support any optional CCITT-specified DTE facilities (clause 14);
- d) transmit a specific value of the Q-bit in DATA packets

(6.6);

e) support either the use of the D-bit, or the optional mechanism for negotiating use or non-use of the D-bit (6.3);

f) transmit specific diagnostic code values when originating restarting, clearing or resetting (tables 24 and 25; 12.2.3.1, 12.5.1, 12.6.1);

g) implement transient states r3, p3, p7, d3, j2;

h) transmit RNR packets (7.1.6);

j) implement any of the optional procedures relating to non-receipt of window rotation information (11.2.1, 11.2.2);

k) implement either of the non-standard alternative modes of recovery from receipt of out of sequence DATA packets (11.3 (b) and (c));

l) support Interrupt data transfer (6.8);

m) support transfer of user data in call setup and clearing packets (5.2.1, 5.2.2, 5.2.3, 5.2.4, 5.5.1, 5.5.2);

n) support DATA packet transfer (clause 6);

p) support DATA packets with the M-bit set to 1 (6.4, 6.7);

q) transmit updated window rotation information (7.1.3);

r) transmit RR packets (7.1.5)

In items (b), (c), (e), (l), (m), (n) and (p) support refers to transmission and reception, independently.

NOTE — Non-support by a DTE of any of items (l) to (r), and to a lesser extent of item (d), would normally be appropriate only for an unusual and highly application-specific implementation; these items, although strictly optional, are generally expected to be part of the normal functionality of a DTE.

## 21.2 Protocol Implementation Conformance Statement

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

## 21.3 Dynamic conformance

A DTE for which conformance to this International Standard is claimed shall exhibit external behaviour consistent with having implemented, for each function that the PICS states to be supported,

- a) the corresponding Packet Layer procedures and
- b) the encoding of any transmitted packets

as specified in the clauses to which the PICS proforma entry for the function refers, and using the Data Link Layer as specified in 3.3, clause 10, and 12.1.

4. Add a new normative annex C as follows.

## Annex C \*

### (normative)

## PICS Proforma

### C.1 Introduction

The supplier of a protocol implementation which is claimed to conform to ISO/IEC 8208:1990 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 check-list to reduce the risk of failure to conform to the standard through oversight;

— by the supplier and acquirer — or potential acquirer — 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 PICSs);

— by a protocol tester, as the basis for selecting appropriate tests against which to assess the claim for conformance of the implementation.

### C.2 Abbreviations and special symbols

#### C.2.1 Status symbols

M mandatory  
O optional  
O.*n* optional, but support of at least one of the group of options labelled by the same numeral *n* is required  
X prohibited  
*pred.* conditional-item symbol, including predicate identification: see C.3.4  
logical negation, applied to a conditional item's predicate

#### C.2.2 General abbreviations

LC logical channel

N/A not applicable  
PICS Protocol Implementation Conformance Statement  
PVC Permanent Virtual Circuit

#### C.2.3 Item references

PICS items dealing with related functions are identified by item references sharing the same initial letter or letter-pair (in capitals). There follow two lists of those initials, first in the order in which the items occur in the PICS proforma, and then in alphabetical order.

##### C.2.3.1 In order of occurrence

V permanent Virtual circuit or Virtual call service  
E Environment: DTE/DCE or DTE/DTE; X.25 1988, 1984 or 1980  
M Modulo 8 or Modulo 128 packet sequence numbers  
RN Reference Number optional user facility  
L Link layer interactions  
P general Packet formatting  
Z packet layer functions independent of logical channels (packets with LC identifier Zero)  
S call Setup  
SP call Setup Packets  
DN D-bit Negotiation  
C call Clearing  
CP call Clearing Packets  
RS ReSetting of logical channels  
W error procedures (response to Wrong behaviour)  
I Interrupt transfer  
DS Data packet Sending  
DR Data packet Receiving  
DC Delivery Confirmation  
Y cause and diagnostic code values (whY resets, etc., initiated)  
O Observability of transient states  
B X.25 (1980) interworking: Backward compatibility  
N X.25 Network differences from ISO/IEC 8208  
FS Facilities Sent during call setup and clearing  
FR Facilities Received during call setup and clearing  
GS reGistration facilities Sent  
GR reGistration facilities Received  
V parameter Values and ranges  
T Timers  
R Retransmission counts  
LC Logical Channel ranges

\*) Copyright release for PICS proformas

Users of this International Standard may freely reproduce the PICS proforma in this annex so that it can be used for the intended purpose and may further publish the completed PICS.

- A Additional information
- X eXception information

### C.2.3.2 In alphabetical order

- A Additional information
- B X.25 (1980) interworking: Backwards compatibility
- C call Clearing
- CP call Clearing Packets
- DC Delivery Confirmation
- DN D-bit Negotiation
- DR Data packet Receiving
- DS Data packet Sending
- E Environment: DTE/DCE or DTE/DTE; X.25 1988, 1984 or 1980
- FR Facilities Received during call setup and clearing
- FS Facilities Sent during call setup and clearing
- GR reGistration facilities Received
- GS reGistration facilities Sent
- I Interrupt transfer
- L Link layer interactions
- LC Logical Channel ranges
- M Modulo 8 or Modulo 128 packet sequence numbers
- N X.25 Network differences from ISO/IEC 8208
- O Observability of transient states
- P general Packet formatting
- R Retransmission counts
- RN Reference Number optional user facility
- RS ReSetting of logical channels
- S call Setup
- SP call Setup Packets
- T Timers
- V permanent Virtual circuit or Virtual call service
- V<sub>n</sub> parameter Values and ranges
- W error procedures (response to Wrong behaviour)
- X eXception information
- Y cause and diagnostic code values (why resets, etc., initiated)
- Z packet layer functions independent of logical channels (packets with LC identifier Zero)

## C.3 Instructions for completing the PICS proforma

### C.3.1 General structure of the PICS proforma

The first part of the PICS proforma – Identification, C.4 – 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 six major subclauses; these can be divided into further subclauses each containing a group 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 or No), or by entering a value or a set or range of values. Note that there are some items where two or more choices from a set of possible answers can apply: all relevant choices are to 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 ISO/IEC 8208 : 1990. 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 C.3.4 below. (Status is sometimes indicated by other means than a separate Status column: for example, where the same status applies to a whole group of items, as in C.8.1.)

A supplier may also provide, or can 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 labelled A<sub>i</sub> or X<sub>i</sub> 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 Protocol Implementation Conformance Statement for the implementation in question.

NOTE — Where an implementation is capable of being configured in more than one way according, for example, to the items in C.5, 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 makes for easier and clearer presentation of the information.

### C.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 will be supplied, and a PICS can be considered complete without any such information. Examples 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 needs – for the exclusion of features which, although optional, are nonetheless commonly present in implementations of the X.25 packet layer 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.

### C.3.3 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 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<sub>i</sub> 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 ISO/IEC 8208 : 1990.

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

### C.3.4 Conditional status

#### C.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.

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 C.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 C.3.4.2), 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.)

#### C.3.4.2 Predicates

A predicate is one of the following:

- a) 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; or
- b) a predicate name, for a predicate defined elsewhere in the PICS proforma: see below; or
- c) the logical negation symbol "¬" prefixed to an item-reference or predicate name: the value of the predicate is true if the value of the predicate obtained by omitting the "¬" symbol is false, and vice versa.

The definition for a predicate name is a boolean expression constructed by combining simple predicates, as at (a) or (b) above, 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 item-references are interpreted as at (a) above.

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

C.4 Identification

C.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 systems; 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).

C.4.2 Protocol summary

|                                                                                                                                               |                                                                                              |
|-----------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------|
| Identification of protocol specification                                                                                                      | ISO/IEC 8208 : 1990<br>ISO/IEC 8208 : 1990/Amd.1 : 1990                                      |
| Identification of amendments and corrigenda to this PICS proforma which have been completed as part of this PICS                              | ISO/IEC 8208 : 1990/<br>Amd. : Corr. :<br>Amd. : Corr. :<br>Amd. : Corr. :<br>Amd. : Corr. : |
| Have any Exception items been required (see C.3.3)?<br>(The answer Yes means that the implementation does not conform to ISO/IEC 8208 : 1990) | No <input type="checkbox"/> Yes <input type="checkbox"/>                                     |
| Date of Statement                                                                                                                             |                                                                                              |

## C.5 General DTE Characteristics

| Item   | Protocol Feature                                                                                                               | References                                                     | Status          | Support                                                                               |
|--------|--------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------|-----------------|---------------------------------------------------------------------------------------|
| * Vs   | Service supported:                                                                                                             |                                                                | O.1             | Yes <input type="checkbox"/> No <input type="checkbox"/>                              |
|        | – Virtual Call                                                                                                                 |                                                                |                 |                                                                                       |
| * Vp   | – Permanent Virtual Circuit                                                                                                    |                                                                | O.1             | Yes <input type="checkbox"/> No <input type="checkbox"/>                              |
|        | What environments are supported?                                                                                               | 3, 3.2                                                         |                 |                                                                                       |
| Ec/8   | – DTE/DCE (1988)                                                                                                               |                                                                | O.2             | Yes <input type="checkbox"/> No <input type="checkbox"/>                              |
| Ec/4   | – DTE/DCE (1984)                                                                                                               |                                                                | O.2             | Yes <input type="checkbox"/> No <input type="checkbox"/>                              |
| * Ec/0 | – DTE/DCE (1980)                                                                                                               |                                                                | O.2             | Yes <input type="checkbox"/> No <input type="checkbox"/>                              |
| Et/t   | – DTE/DTE in fixed role as DTE                                                                                                 |                                                                | O.2             | Yes <input type="checkbox"/> No <input type="checkbox"/>                              |
| Et/c   | – DTE/DTE in fixed role as DCE                                                                                                 |                                                                | Vs: O.2         | N/A <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> |
| Et/d   | – DTE/DTE with dynamic role selection                                                                                          | 4.5                                                            | Vs: O.2         | N/A <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> |
|        | What packet sequence numbering is supported?                                                                                   |                                                                |                 |                                                                                       |
| * M8   | – Modulo 8                                                                                                                     | 13.2, 12.1.1, table 3                                          | O.3             | Yes <input type="checkbox"/> No <input type="checkbox"/>                              |
| * M128 | – Modulo 128 (extended)                                                                                                        | 13.2, 12.1.1, table 3                                          | O.3             | Yes <input type="checkbox"/> No <input type="checkbox"/>                              |
|        | Is the Reference Number optional user facility supported, for the alternative Logical Channel Identifier assignment mechanism: | 13.28, 13.28.1, 13.28.2, 13.28.3, 13.28.3, 13.28.4, figure 36, |                 |                                                                                       |
| RNa    | – without reversion to use of logical channel ranges?                                                                          | 13.28.2.1                                                      | Et: O<br>¬Et: X | N/A <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> |
| RNb    | – with possible reversion of operating mode to use logical channel ranges?                                                     | 13.28.2.1                                                      | Et: O<br>¬Et: X | N/A <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> |

Predicate definitions and usage:

Et = Et/t OR Et/c OR Et/d is used in items RNa, RNb, Z2s, Z4r, DS6, DS7b

Ec = Ec/8 OR Ec/4 OR Ec/0 is used in items Y2b, Y4b, Y6b, GS3id, GS3ig, GS4ic

RN = RNa OR RNb is used in items CP2e (predicate C1rn), CP4e (predicate C2rnci), FS14, FR14

Vs is used in items Et/c, Et/d, O2, O3, LC8; and in C.6.4, C.6.6, C.7.1, C.7.2, C.8.1, C.9.1.1, C.9.1.2, C.9.2.1, C.9.2.2, C.10.1

Vp is used in item LC7; and in C.6.6, C.10.2

Ec/0 is used in C.7.2

M8 and M128 are used in items V2s, V2r, V10s, V10r, V15s, V15r

## C.6 Procedures, packet types and packet formats

### C.6.1 Link layer interactions

| Item | Protocol Feature                                                                           | References | Status | Support                                                  |
|------|--------------------------------------------------------------------------------------------|------------|--------|----------------------------------------------------------|
| L1a  | Is restarting of the packet layer initiated:                                               | 3.10       | M      | Yes <input type="checkbox"/>                             |
|      | — on completion of link layer initialization?                                              |            |        |                                                          |
| L1b  | — on recovery from failure of the link layer?                                              | 10         | M      | Yes <input type="checkbox"/>                             |
| * L2 | Can packets consisting of a non-integral number of octets be received from the link layer? |            |        | Yes <input type="checkbox"/> No <input type="checkbox"/> |

Predicate usage: L2 is used in item P1

## C.6.2 General Packet formatting

| Item | Protocol Feature                                                                                            | References                                               | Status | Support                                                   |
|------|-------------------------------------------------------------------------------------------------------------|----------------------------------------------------------|--------|-----------------------------------------------------------|
| P1   | If Yes to L2, are such packets treated as erroneous?                                                        | 11.3, 12.1, tables 31 – 36                               | L2: M  | N/A <input type="checkbox"/> Yes <input type="checkbox"/> |
| P2   | Do all transmitted packets consist of an integral number of octets?                                         |                                                          | M      | Yes <input type="checkbox"/>                              |
|      | Do all transmitted packets contain the following fields, as specified in the referenced clauses and tables: | 12.1                                                     |        |                                                           |
| P3a  | — General Format Identifier?                                                                                | 12.1.1, table 3                                          | M      | Yes <input type="checkbox"/>                              |
| P3b  | — Logical Channel Identifier?                                                                               | 12.1.2                                                   | M      | Yes <input type="checkbox"/>                              |
| P3c  | — Packet Type Identifier?                                                                                   | 12.1.3, table 4                                          | M      | Yes <input type="checkbox"/>                              |
| P4   | Are all received packets that do not contain valid GFI, LCI and PTI fields treated as erroneous?            | 12.1.1, table 3, 12.1.3, 12.1.2, table 4, tables 31 – 36 | M      | Yes <input type="checkbox"/>                              |

## C.6.3 Packet layer functions independent of logical channels

| Item | Protocol Feature                                                                                                         | References                                                           | Status          | Support                                                                               |
|------|--------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------|-----------------|---------------------------------------------------------------------------------------|
|      | Are the following packet layer functions supported?                                                                      |                                                                      |                 |                                                                                       |
|      | Restarting the packet layer:                                                                                             | 4, 4.3, 4.4, table 32,                                               |                 |                                                                                       |
| Z1i  | — as initiator:<br>send RESTART REQUEST<br>receive RESTART CONFIRMATION / INDICATION                                     | 4.1,<br>12.6.1,<br>12.6.2, 12.6.1                                    | M               | Yes <input type="checkbox"/>                                                          |
| Z1r  | — as responder:<br>receive RESTART INDICATION<br>send RESTART CONFIRMATION                                               | 4.2,<br>12.6.1,<br>12.6.2                                            | M               | Yes <input type="checkbox"/>                                                          |
| Z2r  | Receiving DIAGNOSTIC packet                                                                                              | 11.1, 12.7                                                           | M               | Yes <input type="checkbox"/>                                                          |
| Z2s  | Sending DIAGNOSTIC packet                                                                                                | 12.7, table 24                                                       | Et: O<br>-Et: X | N/A <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> |
| Z3   | DISCARD, or ERROR restart, on erroneous received packets not assignable to a logical channel and not covered by item Z2s | 11.1, tables 31 – 32                                                 | M               | Yes <input type="checkbox"/>                                                          |
| *Z4i | Initiating On-line Facility Registration:<br>send REGISTRATION REQUEST<br>receive REGISTRATION CONFIRMATION              | 13.1, 13.1.1.1,<br>13.1.1.3, 13.1.1.4,<br>12.9.1,<br>12.9.2, table 8 | O               | Yes <input type="checkbox"/> No <input type="checkbox"/>                              |
| *Z4r | Response to On-line Facility Registration:<br>receive REGISTRATION REQUEST<br>send REGISTRATION CONFIRMATION             | 13.1, 13.1.1.2,<br>13.1.1.4,<br>12.9.1,<br>12.9.2, table 8           | Et: O           | N/A <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> |

Predicate usage:

Z4i is used in items T28, R28; and in C.9.1, C.9.1.1, C.9.2.1

Z4r is used in C.9.1, C.9.1.2, C.9.2.2

**C.6.4 Call setup and clearing**

If the Virtual Call service, item Vs, is not supported, mark N/A and continue at C.6.5:

N/A ☐

**C.6.4.1 Call Setup**

| Item | Protocol Feature                            | References              | Status     | Support                                                                               |
|------|---------------------------------------------|-------------------------|------------|---------------------------------------------------------------------------------------|
|      | Are outgoing Virtual Calls supported:       | 5.2.1, 5.2.5, table 33, |            |                                                                                       |
| S1a  | — Fast Select, no restriction on response?  | 5.2.4, 13.16            | O          | Yes <input type="checkbox"/> No <input type="checkbox"/>                              |
| S1b  | — Fast Select with restricted response?     | 13.16                   | O          | Yes <input type="checkbox"/> No <input type="checkbox"/>                              |
| S1c  | — non-Fast-Select?                          | 5.2.4                   | O          | Yes <input type="checkbox"/> No <input type="checkbox"/>                              |
| SP1b | send CALL REQUEST, basic format             | 12.2.1.1                | S1c: M     | N/A <input type="checkbox"/> Yes <input type="checkbox"/>                             |
|      |                                             |                         | S1ab: O.4  | N/A <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> |
| SP1e | send CALL REQUEST, extended format          | 12.2.1.1, 12.2.1.2      | S1ab: O.4  | N/A <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> |
| SP2b | receive CALL CONNECTED, basic format        | 12.2.2.1                | S1ac: M    | N/A <input type="checkbox"/> Yes <input type="checkbox"/>                             |
| SP2e | receive CALL CONNECTED, extended format     | 12.2.2.1, 12.2.2.2      | S1a: M     | N/A <input type="checkbox"/> Yes <input type="checkbox"/>                             |
|      | Are incoming Virtual Calls supported:       | 5.2.2, 5.2.5, table 33, |            |                                                                                       |
| S2a  | — Fast Select with acceptance possible?     | 5.2.3, 13.17            | O          | Yes <input type="checkbox"/> No <input type="checkbox"/>                              |
| S2b  | — Fast Select, always cleared?              | 13.17                   | O          | Yes <input type="checkbox"/> No <input type="checkbox"/>                              |
| S2c  | — non-Fast-Select with acceptance possible? | 5.2.3                   | O          | Yes <input type="checkbox"/> No <input type="checkbox"/>                              |
| S2d  | — non-Fast-Select, always cleared?          | 5.2.3                   | O          | Yes <input type="checkbox"/> No <input type="checkbox"/>                              |
| SP3b | receive INCOMING CALL, basic format         | 12.2.1.1                | S2: M      | N/A <input type="checkbox"/> Yes <input type="checkbox"/>                             |
| SP3e | receive INCOMING CALL, extended format      | 12.2.1.1, 12.2.1.2      | S2ab: M    | N/A <input type="checkbox"/> Yes <input type="checkbox"/>                             |
| SP4b | send CALL ACCEPTED, basic format            | 12.2.2.1                | S2c: M     | N/A <input type="checkbox"/> Yes <input type="checkbox"/>                             |
|      |                                             |                         | S2axc: O.5 | N/A <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> |
| SP4e | send CALL ACCEPTED, extended format         | 12.2.2.1, 12.2.2.2      | S2axc: O.5 | N/A <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> |
|      |                                             |                         | S2anc: O   | N/A <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> |
|      | Is D-bit negotiation supported:             |                         |            |                                                                                       |
| DN1  | — for outgoing Virtual Calls?               | 6.3                     | S1ac: O    | N/A <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> |
| DN2  | — for incoming Virtual Calls?               | 6.3                     | S2ac: O    | N/A <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> |

Predicate definitions and usage (use within this subclause is not explicitly noted):

- S1 = S1a OR S1b OR S1c is used in items C2a, T21; and in C.8.1.1  
 S1ab = (S1a OR S1b) AND NOT S1  
 S1ac = S1a OR S1c is used in C.8.2.2  
 S2 = S2a OR S2b OR S2c OR S2d is used in C.8.2.1  
 S2ac = S2a OR S2c is used in C.8.1.2  
 S2ab = S1a OR S2b  
 S2axc = S2a AND NOT S2c  
 S2anc = S2a AND S2c  
 S2bd = S2b OR S2d is used in item C2b  
 S2acxbd = (S2a OR S2c) AND NOT (S2b OR S2d) is used in item C2b

## C.6.4.2 Call clearing

| Item | Protocol Feature                                       | References         | Status      | Support                      |                                                          |
|------|--------------------------------------------------------|--------------------|-------------|------------------------------|----------------------------------------------------------|
|      | Is call clearing supported, as:                        | 5.5.4, table 33,   |             |                              |                                                          |
| * C1 | — response to indication of clearing?                  | 5.5.2              | O           | Yes <input type="checkbox"/> | No <input type="checkbox"/>                              |
| C2a  | — aborting an outgoing Virtual Call attempt?           | 5.4, 5.5.1, 5.5.3  | S1: O       | N/A <input type="checkbox"/> | Yes <input type="checkbox"/> No <input type="checkbox"/> |
| C2b  | — rejecting an incoming Virtual Call?                  | 5.3, 5.5.1, 5.5.3  | S2bd: M     | N/A <input type="checkbox"/> | Yes <input type="checkbox"/> No <input type="checkbox"/> |
| C2c  | — originating clearing of an established Virtual Call? | 5.5.1, 5.5.3       | S2acxbd: O  | N/A <input type="checkbox"/> | Yes <input type="checkbox"/> No <input type="checkbox"/> |
| CP1b | receive CLEAR INDICATION, basic format                 | 12.2.3.1           | Cany: M     | N/A <input type="checkbox"/> | Yes <input type="checkbox"/>                             |
| CP1e | receive CLEAR INDICATION, extended format              | 12.2.3.1, 12.2.3.2 | Cany: M     | N/A <input type="checkbox"/> | Yes <input type="checkbox"/>                             |
| CP2b | send CLEAR CONFIRMATION, basic format                  | 12.2.4.1           | C1: M       | N/A <input type="checkbox"/> | Yes <input type="checkbox"/>                             |
| CP2e | send CLEAR CONFIRMATION, extended format               | 12.2.4.1, 12.2.4.2 | C1rn: M     | N/A <input type="checkbox"/> | Yes <input type="checkbox"/>                             |
| CP3b | send CLEAR REQUEST, basic format                       | 12.2.3.1           | C2a: M      | N/A <input type="checkbox"/> | Yes <input type="checkbox"/>                             |
| CP3e | send CLEAR REQUEST, extended format                    | 12.2.3.1, 12.2.3.2 | C2bcxa: O.6 | N/A <input type="checkbox"/> | Yes <input type="checkbox"/> No <input type="checkbox"/> |
|      |                                                        |                    | C2bcxa: O.6 | N/A <input type="checkbox"/> | Yes <input type="checkbox"/> No <input type="checkbox"/> |
|      |                                                        |                    | C2axbc: X   | N/A <input type="checkbox"/> | No <input type="checkbox"/>                              |
| CP4b | receive CLEAR CONFIRMATION, basic format               | 12.2.4.1           | C2: M       | N/A <input type="checkbox"/> | Yes <input type="checkbox"/>                             |
| CP4e | receive CLEAR CONFIRMATION, extended format            | 12.2.4.1, 12.2.4.2 | C2rnci: M   | N/A <input type="checkbox"/> | Yes <input type="checkbox"/>                             |

Predicate definitions and usage (use within this subclause is not explicitly noted):

C1rn = C1 AND RN

C2 = C2a OR C2b OR C2c

C2any = C1 OR C2a OR C2b OR C2c

C2bc = C2b OR C2c

C2bcxa = (C2b OR C2c) AND NOT C2a

C2axbc = C2a AND NOT (C2b OR C2c)

C2rnci = C2 AND (RN OR FR8f)

is used in items T23, R23; and in C.7.1, C.8.1.3, C.8.2.4

C1 is used in C.7.1, C.8.2.3

## C.6.5 Resetting of logical channels

| Item  | Protocol Feature                        | References             | Status | Support                      |                             |
|-------|-----------------------------------------|------------------------|--------|------------------------------|-----------------------------|
|       | Is resetting supported:                 | 8, 8.3, 8.4, table 34, |        |                              |                             |
| * RSi | — as initiator?                         | 8.1,                   | O      | Yes <input type="checkbox"/> | No <input type="checkbox"/> |
|       | send RESET REQUEST                      | 12.5.1,                |        |                              |                             |
|       | receive RESET CONFIRMATION / INDICATION | 12.5.2                 |        |                              |                             |
| * RSr | — as responder?                         | 8.2,                   | O      | Yes <input type="checkbox"/> | No <input type="checkbox"/> |
|       | receive RESET INDICATION                | 12.5.1,                |        |                              |                             |
|       | send RESET CONFIRMATION                 | 12.5.2                 |        |                              |                             |

Predicate usage:

RSi is used in items T22, R22; and in C.7.1

RSr is used in item O4; and in C.7.1

## C.6.6 Error procedures

| Item  | Protocol Feature (Notes 1, 2)                                                                    | References (Note 3)                                                            | Status | Support                                                  |
|-------|--------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------|--------|----------------------------------------------------------|
|       | If the Virtual Call service, item Vs, is not supported, mark N/A and continue at (W2p) below.    |                                                                                |        | N/A <input type="checkbox"/>                             |
|       | Is ERROR-C procedure:                                                                            | 5.2.1, 5.4, 8.1, table 33                                                      |        |                                                          |
| W1a   | — clear the Virtual Call?                                                                        |                                                                                | O.7    | Yes <input type="checkbox"/> No <input type="checkbox"/> |
| W1b   | — restart the packet layer?                                                                      |                                                                                | O.7    | Yes <input type="checkbox"/> No <input type="checkbox"/> |
| W1c   | — other?                                                                                         |                                                                                | X      | No <input type="checkbox"/>                              |
|       | Is ERROR-R procedure for Virtual Calls:                                                          | 6.3, 6.4, 6.6, 6.8.1, 6.8.2, 7.1.3, 7.1.4, 8.2, 11.2.1, 13.4.1, tables 34 – 36 |        |                                                          |
| W2sa  | — reset the logical channel?                                                                     |                                                                                | O.8    | Yes <input type="checkbox"/> No <input type="checkbox"/> |
| W2sb  | — clear the Virtual Call?                                                                        |                                                                                | O.8    | Yes <input type="checkbox"/> No <input type="checkbox"/> |
| W2sc  | — restart the packet layer?                                                                      |                                                                                | O.8    | Yes <input type="checkbox"/> No <input type="checkbox"/> |
| W2sd  | — other?                                                                                         |                                                                                | X      | No <input type="checkbox"/>                              |
| (W2p) | If Permanent Virtual Circuit service, item Vp, is not supported, mark N/A and continue at C.6.7. |                                                                                |        | N/A <input type="checkbox"/>                             |
|       | Is ERROR-R procedure for Permanent Virtual Circuits:                                             |                                                                                |        |                                                          |
| W2pa  | — reset the logical channel?                                                                     | 6.3, 6.4, 6.6, 6.8.1, 6.8.2, 7.1.3, 7.1.4, 8.2, 11.2.1, 13.4.1, tables 34 – 36 | O.9    | Yes <input type="checkbox"/> No <input type="checkbox"/> |
| W2pb  | — restart the packet layer?                                                                      |                                                                                | O.9    | Yes <input type="checkbox"/> No <input type="checkbox"/> |
| W2pc  | — other?                                                                                         |                                                                                | X      | No <input type="checkbox"/>                              |

## NOTES

- 1 ERROR-C procedure is specified as clearing the Virtual Call in question, but restarting of the packet layer is a permissible alternative (see 4.1 and Note 1 to table 25).
- 2 ERROR-R procedure is specified as resetting the logical channel in question, but clearing is a permissible alternative for a Virtual Call (5.5, table 25 Note 1), and so also is restarting of the packet layer for a Virtual Call or Permanent Virtual Circuit (4.1, table 25 Note 1).
- 3 References are to the subclauses and tables specifying invocation of the error procedures, not to the specifications of the procedures themselves (for which see C.6.4.2, C.6.5, C.6.3).

## C.6.7 Interrupt transfer

| Item | Protocol Feature                   | References                   | Status | Support                                                  |
|------|------------------------------------|------------------------------|--------|----------------------------------------------------------|
| * Is | Is sending interrupts supported?   | 6.8, 6.8.1, 6.8.3, table 35, | O      | Yes <input type="checkbox"/> No <input type="checkbox"/> |
|      | send INTERRUPT REQUEST             | 12.3.2,                      |        |                                                          |
|      | receive INTERRUPT CONFIRMATION     | 12.3.3                       |        |                                                          |
| * Ir | Is receiving interrupts supported? | 6.8, 6.8.2, 6.8.3, table 35, | O      | Yes <input type="checkbox"/> No <input type="checkbox"/> |
|      | receive INTERRUPT INDICATION       | 12.3.2,                      |        |                                                          |
|      | send INTERRUPT CONFIRMATION        | 12.3.3                       |        |                                                          |

Predicate usage: Is is used in item T26

Ir is used in item O5

## C.6.8 Normal data transfer and flow control

## C.6.8.1 Sending data

| Item | Protocol Feature                                                         | References                               | Status | Support                                                                               |
|------|--------------------------------------------------------------------------|------------------------------------------|--------|---------------------------------------------------------------------------------------|
| DS1  | Is sending of DATA packets supported?                                    | 6, 6.1, 6.2, 7.1.1, 7.1.2, 7.1.3, 12.3.1 | O      | Yes <input type="checkbox"/> No <input type="checkbox"/>                              |
|      | If DS1 is not supported, mark N/A and continue at C.6.8.2.               |                                          |        | N/A <input type="checkbox"/>                                                          |
|      | Otherwise, are the following supported?                                  |                                          |        |                                                                                       |
| DS2  | — Send-window rotation on receiving updated P(R) values                  | 7.1, 7.1.2, 7.1.3                        | O      | Yes <input type="checkbox"/> No <input type="checkbox"/>                              |
| DS3  | — Response to flow control by received RNR and RR packets                | 7.1.5, 7.1.6, 12.4.1, 12.4.2             | M      | Yes <input type="checkbox"/>                                                          |
| DS4a | — Sending M = 0 in DATA packets                                          | 6.4, 6.5, 6.7                            | M      | Yes <input type="checkbox"/>                                                          |
| DS4b | — Sending M = 1 in DATA packets                                          | 6.4, 6.5, 6.7                            | O      | Yes <input type="checkbox"/> No <input type="checkbox"/>                              |
| DS5a | — Sending Q = 0 in DATA packets                                          | 6.6                                      | O.10   | Yes <input type="checkbox"/> No <input type="checkbox"/>                              |
| DS5b | — Sending Q = 1 in DATA packets                                          | 6.6                                      | O.10   | Yes <input type="checkbox"/> No <input type="checkbox"/>                              |
| DS6  | — Responding to packet retransmission requests (received REJECT packets) | 13.4.2, 12.8                             | Et: O  | N/A <input type="checkbox"/> No <input type="checkbox"/> Yes <input type="checkbox"/> |
|      | — Window Rotation Timer procedure:                                       |                                          |        |                                                                                       |
| DS7a | — ERROR-R action on expiry                                               | 11.2.1 (a)                               | O      | No <input type="checkbox"/> Yes <input type="checkbox"/>                              |
| DS7b | — packet retransmission on expiry                                        | 11.2.1 (b)                               | Et: O  | N/A <input type="checkbox"/> No <input type="checkbox"/> Yes <input type="checkbox"/> |
|      |                                                                          |                                          | ¬Et: X | N/A <input type="checkbox"/> No <input type="checkbox"/>                              |
| DS8  | — Discard of over-length flow control packets (instead of ERROR-R)       | table 36 Note 2                          | O      | No <input type="checkbox"/> Yes <input type="checkbox"/>                              |

## C.6.8.2 Receiving data

| Item  | Protocol Feature                                                                                          | References                               | Status | Support                      |                              |
|-------|-----------------------------------------------------------------------------------------------------------|------------------------------------------|--------|------------------------------|------------------------------|
| DR1   | Receiving DATA packets                                                                                    | 6, 6.1, 6.2, 7.1.1, 7.1.2, 7.1.3, 12.3.1 | O      | Yes <input type="checkbox"/> | No <input type="checkbox"/>  |
|       | If DR1 is not supported, mark N/A and continue at C.6.8.3.<br><br>Otherwise, are the following supported? |                                          |        | N/A <input type="checkbox"/> |                              |
| DR2   | — Receive-window rotation by sending updated P(R) values                                                  | 7.1.2, 7.1.3                             | O      | Yes <input type="checkbox"/> | No <input type="checkbox"/>  |
| DR3   | — Flow control by sending RNR and RR packets                                                              | 7.1.5, 7.1.6, 12.4.1, 12.4.2             | O      | Yes <input type="checkbox"/> | No <input type="checkbox"/>  |
| DR4a  | — Receiving M = 0 in DATA packets                                                                         | 6.4, 6.5, 6.7                            | M      | Yes <input type="checkbox"/> |                              |
| DR4b  | — Receiving M = 1 in DATA packets                                                                         | 6.4, 6.5, 6.7                            | O      | Yes <input type="checkbox"/> | No <input type="checkbox"/>  |
| DR5a  | — Receiving Q = 0 in DATA packets                                                                         | 6.6                                      | O.11   | Yes <input type="checkbox"/> | No <input type="checkbox"/>  |
| DR5b  | — Receiving Q = 1 in DATA packets                                                                         | 6.6                                      | O.11   | Yes <input type="checkbox"/> | No <input type="checkbox"/>  |
| * DR6 | — Requesting packet retransmission by sending REJECT packets                                              | 13.4.1, 12.8                             | O      | Yes <input type="checkbox"/> | No <input type="checkbox"/>  |
|       | — Recovery from receipt of DATA packets containing invalid P(S), by:                                      |                                          |        |                              |                              |
| DR7a  | — ERROR-R action                                                                                          | 11.3 (a)                                 | O.12   | Yes <input type="checkbox"/> | No <input type="checkbox"/>  |
| DR7b  | — requesting packet retransmission                                                                        | 11.3 (b)                                 | O.12   | No <input type="checkbox"/>  | Yes <input type="checkbox"/> |
| DR7c  | — ignoring the packet and waiting for a correct retransmitted packet                                      | 11.3 (c)                                 | O.12   | No <input type="checkbox"/>  | Yes <input type="checkbox"/> |
|       | — Recovery from receipt of DATA packets with invalid User Data field, by:                                 |                                          |        |                              |                              |
| DR8a  | — ERROR-R action                                                                                          | 11.3 (a)                                 | O.13   | Yes <input type="checkbox"/> | No <input type="checkbox"/>  |
| DR8b  | — requesting packet retransmission                                                                        | 11.3 (b)                                 | O.13   | No <input type="checkbox"/>  | Yes <input type="checkbox"/> |
| DR8c  | — ignoring the packet and waiting for a correct retransmitted packet                                      | 11.3 (c)                                 | O.13   | No <input type="checkbox"/>  | Yes <input type="checkbox"/> |
| DR9   | — Window Status Transmission Timer procedure                                                              | 11.2.2                                   | O      | Yes <input type="checkbox"/> | No <input type="checkbox"/>  |

Predicate usage: DR6 is used in items T27, R27.

## C.6.8.3 Delivery confirmation

| Item | Protocol Feature                    | References           | Status | Support                      |                             |
|------|-------------------------------------|----------------------|--------|------------------------------|-----------------------------|
| DC   | Is Delivery Confirmation supported? | 6.3, 6.5, 6.7, 7.1.4 | O      | Yes <input type="checkbox"/> | No <input type="checkbox"/> |

## C.7 Miscellaneous features and options

## C.7.1 Values of Cause and Diagnostic Code fields

| Item | Protocol Feature                                                                                | References                                | Status          | Support                                                                                                                                            |
|------|-------------------------------------------------------------------------------------------------|-------------------------------------------|-----------------|----------------------------------------------------------------------------------------------------------------------------------------------------|
| Y1a  | In RESTART REQUEST packets sent:<br>— Cause = 0, standard diagnostic codes,<br>— specific codes | 12.6.1.1, 12.6.1.2,<br>tables 24 – 25     | O.14            | Yes <input type="checkbox"/> No <input type="checkbox"/>                                                                                           |
| Y1b  | — generic codes (including zero)                                                                |                                           | O.14            | Yes <input type="checkbox"/> No <input type="checkbox"/>                                                                                           |
| Y1c  | — code zero, always                                                                             |                                           | O.14            | Yes <input type="checkbox"/> No <input type="checkbox"/>                                                                                           |
| Y1d  | — Cause = 128, private diagnostic codes                                                         |                                           | O.14            | Yes <input type="checkbox"/> No <input type="checkbox"/>                                                                                           |
| Y1e  | — other                                                                                         |                                           | X               | No <input type="checkbox"/>                                                                                                                        |
| Y2a  | In RESTART INDICATION packets received:<br>— Cause = 0 or 128, any diagnostic code value        | 12.6.1.1, table 7,<br>12.6.1.2            | M               | Yes <input type="checkbox"/>                                                                                                                       |
| Y2b  | — Cause not 0 or 128, any diagnostic code value                                                 |                                           | Ec: M<br>¬Ec: O | N/A <input type="checkbox"/> Yes <input type="checkbox"/><br>N/A <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> |
|      | If the Virtual Call service, item Vs, is not supported, mark N/A and continue at (Y5) below.    |                                           |                 | N/A <input type="checkbox"/>                                                                                                                       |
|      | If initiation of clearing, predicate C2, is not supported, mark N/A and continue at (Y4) below  |                                           |                 | N/A <input type="checkbox"/>                                                                                                                       |
| Y3a  | In CLEAR REQUEST packets sent:<br>— Cause = 0, standard diagnostic codes,<br>— specific codes   | 12.2.3.1.1, 12.2.3.1.2,<br>tables 24 – 25 | O.15            | Yes <input type="checkbox"/> No <input type="checkbox"/>                                                                                           |
| Y3b  | — generic codes (including zero)                                                                |                                           | O.15            | Yes <input type="checkbox"/> No <input type="checkbox"/>                                                                                           |
| Y3c  | — code zero, always                                                                             |                                           | O.15            | Yes <input type="checkbox"/> No <input type="checkbox"/>                                                                                           |
| Y3d  | — Cause = 128, private diagnostic codes                                                         |                                           | O.15            | Yes <input type="checkbox"/> No <input type="checkbox"/>                                                                                           |
| Y3e  | — other                                                                                         |                                           | X               | No <input type="checkbox"/>                                                                                                                        |
| (Y4) | If response to clearing, item C1, is not supported, mark N/A and continue at (Y5) below.        |                                           |                 | N/A <input type="checkbox"/>                                                                                                                       |
| Y4a  | In CLEAR INDICATION packets received:<br>— Cause = 0 or 128, any diagnostic code value          | 12.2.3.1.1, table 5,<br>12.2.3.1.2        | M               | Yes <input type="checkbox"/>                                                                                                                       |
| Y4b  | — Cause not 0 or 128, any diagnostic code value                                                 |                                           | Ec: M<br>¬Ec: O | N/A <input type="checkbox"/> Yes <input type="checkbox"/><br>N/A <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> |
| (Y5) | If initiation of resetting, item RSi, is not supported, mark N/A and continue at (Y6) below.    |                                           |                 | N/A <input type="checkbox"/>                                                                                                                       |
| Y5a  | In RESET REQUEST packets sent:<br>— Cause = 0, standard diagnostic codes,<br>— specific codes   | 12.5.1.1, 12.5.1.2,<br>tables 24 – 25     | O.16            | Yes <input type="checkbox"/> No <input type="checkbox"/>                                                                                           |
| Y5b  | — generic codes (including zero)                                                                |                                           | O.16            | Yes <input type="checkbox"/> No <input type="checkbox"/>                                                                                           |
| Y5c  | — code zero, always                                                                             |                                           | O.16            | Yes <input type="checkbox"/> No <input type="checkbox"/>                                                                                           |
| Y5d  | — Cause = 128, private diagnostic codes                                                         |                                           | O.16            | Yes <input type="checkbox"/> No <input type="checkbox"/>                                                                                           |
| Y5e  | — other                                                                                         |                                           | X               | No <input type="checkbox"/>                                                                                                                        |
| (Y6) | If response to resetting, item RSr, is not supported, mark N/A and continue at C.7.2 below.     |                                           |                 | N/A <input type="checkbox"/>                                                                                                                       |
| Y6a  | In RESET INDICATION packets received:<br>— Cause = 0 or 128, any diagnostic code value          | 12.5.1.1, table 6,<br>12.5.1.2            | M               | Yes <input type="checkbox"/>                                                                                                                       |
| Y6b  | — Cause not 0 or 128, any diagnostic code value                                                 |                                           | Ec: M<br>¬Ec: O | N/A <input type="checkbox"/> Yes <input type="checkbox"/><br>N/A <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> |

**C.7.2 Operation in an X.25 (1980) environment**

If operation in an X.25 (1980) environment, item Ec/0, is not supported, mark N/A and continue at C.7.3: N/A ☐

| Item | Protocol Feature                                                                                 | References | Support (Note 1)             |                             |
|------|--------------------------------------------------------------------------------------------------|------------|------------------------------|-----------------------------|
|      | When operating in an X.25 (1980) DTE/DCE environment, are any of the following transmitted:      |            |                              |                             |
| B1   | INTERRUPT packets with User Data field longer than one octet?                                    | 3.1.2 (f)  | Yes <input type="checkbox"/> | No <input type="checkbox"/> |
|      | If the Virtual Call service, item Vs, is not supported, mark N/A and continue at C.7.3.          |            | N/A <input type="checkbox"/> |                             |
| B2   | Flow Control Parameter Negotiation facility elements offering a packet size of 2048 (Note 2)?    | 3.1.2 (a)  | Yes <input type="checkbox"/> | No <input type="checkbox"/> |
| B3   | CALL REQUEST, CALL ACCEPTED or CLEAR REQUEST packets with Facility fields longer than 63 octets? | 3.1.2 (b)  | Yes <input type="checkbox"/> | No <input type="checkbox"/> |
| B4   | RESTART REQUEST, CLEAR REQUEST or RESET REQUEST packets with bit 8 of the Cause code set to 1?   | 3.1.2 (c)  | Yes <input type="checkbox"/> | No <input type="checkbox"/> |
| B5a  | CLEAR REQUEST packets with non-zero Address Length or Facility Length fields?                    | 3.1.2 (d)  | Yes <input type="checkbox"/> | No <input type="checkbox"/> |
| B5b  | Extended format CLEAR REQUEST packets with no User Data field?                                   | 3.1.2 (d)  | Yes <input type="checkbox"/> | No <input type="checkbox"/> |
| B5c  | Extended format CLEAR REQUEST packets after completion of call setup?                            | 3.1.2 (h)  | Yes <input type="checkbox"/> | No <input type="checkbox"/> |
| B6   | REGISTRATION REQUEST packets?                                                                    | 3.1.2 (g)  | Yes <input type="checkbox"/> | No <input type="checkbox"/> |
| B7a  | Network User Identification facility elements?                                                   | 3.1.2 (g)  | Yes <input type="checkbox"/> | No <input type="checkbox"/> |
| B7b  | Charging Information Request facility elements?                                                  | 3.1.2 (g)  | Yes <input type="checkbox"/> | No <input type="checkbox"/> |
| B7c  | Called Line Address Modified Notification facility elements?                                     | 3.1.2 (g)  | Yes <input type="checkbox"/> | No <input type="checkbox"/> |
| B7d  | Transit Delay Selection And Indication facility elements?                                        | 3.1.2 (g)  | Yes <input type="checkbox"/> | No <input type="checkbox"/> |
| B7e  | Extended format Closed User Group Selection facility elements?                                   | 3.1.2 (h)  | Yes <input type="checkbox"/> | No <input type="checkbox"/> |
| B7f  | Closed User Group With Outgoing Access Selection facility elements?                              | 3.1.2 (h)  | Yes <input type="checkbox"/> | No <input type="checkbox"/> |
| B7g  | Extended format RPOA Selection facility elements?                                                | 3.1.2 (h)  | Yes <input type="checkbox"/> | No <input type="checkbox"/> |
| B7h  | Call Deflection Selection facility elements (Note 5)?                                            | 3.1.1 (a)  | Yes <input type="checkbox"/> | No <input type="checkbox"/> |
| B8   | Facility Marker for CCITT-specified DTE facilities (Note 3)?                                     | 3.1.2 (i)  | Yes <input type="checkbox"/> | No <input type="checkbox"/> |
| B9a  | Priority facility elements (Note 5)?                                                             | 3.1.1 (b)  | Yes <input type="checkbox"/> | No <input type="checkbox"/> |
| B9b  | Protection facility elements (Note 5)?                                                           | 3.3.3 (b)  | Yes <input type="checkbox"/> | No <input type="checkbox"/> |

**NOTES**

- 1 A "Yes" answer for any item indicates that operation is not compatible with X.25 (1980).
- 2 This item also covers the case of packet size 4096.
- 3 This item also covers facility elements for CCITT-specified DTE facilities.
- 4 Extended format CLEAR CONFIRMATION packets — see 3.1 (e) — are never transmitted by a DTE conforming to ISO 8208.
- 5 A "Yes" answer for this item indicates that operation is not compatible with either X.25 (1980) or X.25 (1984).

## C.7.3 Operation in an X.25 network environment

| Item | Protocol Feature                                                                                                                                                       | References (Note 2)         | Support (Note 1)                                         |
|------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------|----------------------------------------------------------|
| N1   | Is the Facility Length field always present in a basic format CALL ACCEPTED packet (Note 3)?                                                                           | 3.3 (a);<br>SP4b            | Yes <input type="checkbox"/> No <input type="checkbox"/> |
| N2   | Is the Diagnostic Code field always present in RESTART REQUEST, CLEAR REQUEST and RESET REQUEST packets?                                                               | 3.3 (b);<br>Z1i, CP3b, RSi  | Yes <input type="checkbox"/> No <input type="checkbox"/> |
| N3   | Are DATA packets with User Data fields shorter than the packet size for the logical channel and with the D-bit set to 0 always transmitted with the M-bit set to zero? | 3.3 (c);<br>DS1, DS4a, DS4b | Yes <input type="checkbox"/> No <input type="checkbox"/> |
| N4   | Is restarting of the Packet layer always initiated on completion of Link layer initialization and on recovery from failure of the Link layer?                          | 3.3 (d);<br>L1a, L1b        | Yes <input type="checkbox"/> No <input type="checkbox"/> |

## NOTES

- 1 A "No" answer for any of these items indicates failure of conformance to ISO/IEC 8208 : 1990, but the implementation's behaviour is nevertheless acceptable to a DCE according to CCITT Recommendation X.25.
- 2 This column includes cross-references to related PICS items.
- 3 This item also covers the case of omitted Address Length fields, since the Address Length field cannot be absent if the Facility Length field is present in a packet.

## C.7.4 Transient states

| Item | Protocol Feature                                             | References     | Status | Support                                                                               |
|------|--------------------------------------------------------------|----------------|--------|---------------------------------------------------------------------------------------|
|      | Are the following, potentially transient, states observable? | tables 30 – 35 |        |                                                                                       |
| O1   | — r3 (DXE RESTART INDICATION)                                |                | O      | Yes <input type="checkbox"/> No <input type="checkbox"/>                              |
| O2   | — p3 (DXE INCOMING CALL)                                     |                | Vs: O  | N/A <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> |
| O3   | — p7 (DXE CLEAR INDICATION)                                  |                | Vs: O  | N/A <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> |
| O4   | — d3 (DXE RESET INDICATION)                                  |                | RSr: O | N/A <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> |
| O5   | — j2 (DXE INTERRUPT SENT)                                    |                | Ir: O  | N/A <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> |

## C.8 Facilities

If the Virtual Call service, item Vs, is not supported, mark N/A and continue at C.9:

N/A ☐

## C.8.1 Facilities sent during call setup and clearing

| Item | Protocol Feature                                    | References                                    | Status | Support                                                   |
|------|-----------------------------------------------------|-----------------------------------------------|--------|-----------------------------------------------------------|
| FS0  | General coding of facilities in transmitted packets | 15.1, table 16, table 17,<br>15.3.1, table 19 | M      | Yes <input type="checkbox"/>                              |
| FS14 | Reference Number facility in transmitted packets    | 15.2.2.14                                     | RN: M  | N/A <input type="checkbox"/> Yes <input type="checkbox"/> |

Support for each of the remaining items in the following subclauses of C.8.1 is optional.

**C.8.1.1 Facilities sent in CALL REQUEST packets**

If outgoing Virtual Calls, predicate S1, are not supported, mark N/A and continue at C.8.1.2:

N/A ☐

| Item    | Protocol Feature                                                  | References                 | Support                      |                             |
|---------|-------------------------------------------------------------------|----------------------------|------------------------------|-----------------------------|
| * FS1pi | Flow Control Parameter Negotiation, packet size                   | 13.12, 15.2.2.1.1          | Yes <input type="checkbox"/> | No <input type="checkbox"/> |
| * FS1wi | Flow Control Parameter Negotiation, window size                   | 13.12, 15.2.2.1.2          | Yes <input type="checkbox"/> | No <input type="checkbox"/> |
| * FS2i  | Throughput Class Negotiation                                      | 13.13, 15.2.2.2, table 18  | Yes <input type="checkbox"/> | No <input type="checkbox"/> |
| FS3b    | Closed User Group Selection, basic format                         | 13.14.6, 15.2.2.3.1        | Yes <input type="checkbox"/> | No <input type="checkbox"/> |
| FS3e    | Closed User Group Selection, extended format                      | 13.14.6, 15.2.2.3.2        | Yes <input type="checkbox"/> | No <input type="checkbox"/> |
| FS4b    | Closed User Group With Outgoing Access Selection, basic format    | 13.4.7, 15.2.2.4.1         | Yes <input type="checkbox"/> | No <input type="checkbox"/> |
| FS4e    | Closed User Group With Outgoing Access Selection, extended format | 13.4.7, 15.2.2.4.2         | Yes <input type="checkbox"/> | No <input type="checkbox"/> |
| FS5     | Bilateral Closed User Group Selection                             | 13.15, 15.2.2.5            | Yes <input type="checkbox"/> | No <input type="checkbox"/> |
| FS6a    | Fast Select                                                       | 13.16, 15.2.2.6            | Yes <input type="checkbox"/> | No <input type="checkbox"/> |
| FS6b    | Reverse Charging                                                  | 13.18, 15.2.2.6            | Yes <input type="checkbox"/> | No <input type="checkbox"/> |
| FS7i    | Network User Identification                                       | 13.21, 13.21.3, 15.2.2.7   | Yes <input type="checkbox"/> | No <input type="checkbox"/> |
| FS8i    | Charging Information, requesting service                          | 13.22, 15.2.2.8.1          | Yes <input type="checkbox"/> | No <input type="checkbox"/> |
| FS9b    | RPOA Selection, basic format                                      | 13.23, 13.23.2, 15.2.2.9.1 | Yes <input type="checkbox"/> | No <input type="checkbox"/> |
| FS9e    | RPOA Selection, extended format                                   | 13.23, 13.23.2, 15.2.2.9.2 | Yes <input type="checkbox"/> | No <input type="checkbox"/> |
| FS12    | Transit Delay Selection And Indication                            | 13.27, 15.2.2.13           | Yes <input type="checkbox"/> | No <input type="checkbox"/> |
| FS99i   | Local non-X.25 facilities, following Facility Marker              | 15.1, table 16             | Yes <input type="checkbox"/> | No <input type="checkbox"/> |
| FS98i   | Remote non-X.25 facilities, following Facility Marker             | 15.1, table 16             | Yes <input type="checkbox"/> | No <input type="checkbox"/> |
| FS20i   | Facility Marker, CCITT-specified DTE facilities                   | 15.1                       | Yes <input type="checkbox"/> | No <input type="checkbox"/> |
| FS21i   | Calling Address Extension                                         | 14.1, 15.3.2.1             | Yes <input type="checkbox"/> | No <input type="checkbox"/> |
| FS22i   | Called Address Extension                                          | 14.2, 15.3.2.2             | Yes <input type="checkbox"/> | No <input type="checkbox"/> |
| FS23i   | Minimum Throughput Class Negotiation                              | 14.3, 15.3.2.3             | Yes <input type="checkbox"/> | No <input type="checkbox"/> |
| FS24i   | End-to-End Transit Delay Negotiation                              | 14.4, 15.3.2.4             | Yes <input type="checkbox"/> | No <input type="checkbox"/> |
| FS25i   | Expedited Data Negotiation                                        | 14.7, 15.3.2.7             | Yes <input type="checkbox"/> | No <input type="checkbox"/> |
| FS26i   | Priority                                                          | 14.5, 15.3.2.5             | Yes <input type="checkbox"/> | No <input type="checkbox"/> |
| FS27i   | Protection                                                        | 14.6, 15.3.2.6             | Yes <input type="checkbox"/> | No <input type="checkbox"/> |

Predicate usage: FS1pi, FS1wi, FS2i are used in C.10.1

**C.8.1.2 Facilities sent in CALL ACCEPT packets**

If acceptance of incoming Virtual Calls, predicate S2ac, is not supported, mark N/A and continue at C.8.1.3: N/A ☐

| Item    | Protocol Feature                                      | References                  | Support                      |                             |
|---------|-------------------------------------------------------|-----------------------------|------------------------------|-----------------------------|
| * FS1pr | Flow Control Parameter Negotiation, packet size       | 13.12, 15.2.2.1.1, table 11 | Yes <input type="checkbox"/> | No <input type="checkbox"/> |
| * FS1wr | Flow Control Parameter Negotiation, window size       | 13.12, 15.2.2.1.2, table 11 | Yes <input type="checkbox"/> | No <input type="checkbox"/> |
| * FS2r  | Throughput Class Negotiation                          | 13.13, 15.2.2.2, table 18   | Yes <input type="checkbox"/> | No <input type="checkbox"/> |
| FS7r    | Network User Identification                           | 13.21, 13.21.3, 15.2.2.7    | Yes <input type="checkbox"/> | No <input type="checkbox"/> |
| FS8r    | Charging Information, requesting service              | 13.22, 15.2.2.8.1           | Yes <input type="checkbox"/> | No <input type="checkbox"/> |
| FS10r   | Called Line Address Modified Notification             | 13.26, 15.2.2.12            | Yes <input type="checkbox"/> | No <input type="checkbox"/> |
| FS99r   | Local non-X.25 facilities, following Facility Marker  | 15.1, table 16              | Yes <input type="checkbox"/> | No <input type="checkbox"/> |
| FS98r   | Remote non-X.25 facilities, following Facility Marker | 15.1, table 16              | Yes <input type="checkbox"/> | No <input type="checkbox"/> |
| FS20r   | Facility Marker, CCITT-specified DTE facilities       | 15.1                        | Yes <input type="checkbox"/> | No <input type="checkbox"/> |
| FS22r   | Called Address Extension                              | 14.2, 15.3.2.2              | Yes <input type="checkbox"/> | No <input type="checkbox"/> |
| FS24r   | End-to-End Transit Delay Negotiation                  | 14.4, 15.3.2.4              | Yes <input type="checkbox"/> | No <input type="checkbox"/> |
| FS25r   | Expedited Data Negotiation                            | 14.7, 15.3.2.7              | Yes <input type="checkbox"/> | No <input type="checkbox"/> |
| FS26r   | Priority                                              | 14.5, 15.3.2.5              | Yes <input type="checkbox"/> | No <input type="checkbox"/> |
| FS27r   | Protection                                            | 14.6, 15.3.2.6              | Yes <input type="checkbox"/> | No <input type="checkbox"/> |

Predicate usage: FS1pr, FS1wr, FS2r are used in C.10.1

**C.8.1.3 Facilities sent in CLEAR REQUEST packets**

If initiation of call clearing, predicate C2, is not supported, mark N/A and continue at C.8.2:

N/A ☐

| Item  | Protocol Feature                                                                           | References           | Support                      |                             |
|-------|--------------------------------------------------------------------------------------------|----------------------|------------------------------|-----------------------------|
| FS10d | Called Line Address Modified Notification                                                  | 13.26, 15.2.2.12     | Yes <input type="checkbox"/> | No <input type="checkbox"/> |
| FS13  | Call Deflection Selection                                                                  | 13.25.2.2, 15.2.2.10 | Yes <input type="checkbox"/> | No <input type="checkbox"/> |
| FS99d | Local non-X.25 facilities, following Facility Marker                                       | 15.1, table 16       | Yes <input type="checkbox"/> | No <input type="checkbox"/> |
| FS98d | Remote non-X.25 facilities, following Facility Marker                                      | 15.1, table 16       | Yes <input type="checkbox"/> | No <input type="checkbox"/> |
| FS20d | Facility Marker, CCITT-specified DTE facilities                                            | 15.1                 | Yes <input type="checkbox"/> | No <input type="checkbox"/> |
| FS22d | Called Address Extension                                                                   | 14.2, 15.3.2.2       | Yes <input type="checkbox"/> | No <input type="checkbox"/> |
|       | If Call Deflection Selection, item FS13, is not supported, mark N/A and continue at C.8.2. |                      | N/A <input type="checkbox"/> |                             |
| FS21d | Calling Address Extension                                                                  | 14.1, 15.3.2.1       | Yes <input type="checkbox"/> | No <input type="checkbox"/> |
| FS23d | Minimum Throughput Class Negotiation                                                       | 14.3, 15.3.2.3       | Yes <input type="checkbox"/> | No <input type="checkbox"/> |
| FS24d | End-to-End Transit Delay Negotiation                                                       | 14.4, 15.3.2.4       | Yes <input type="checkbox"/> | No <input type="checkbox"/> |
| FS25d | Expedited Data Negotiation                                                                 | 14.7, 15.3.2.7       | Yes <input type="checkbox"/> | No <input type="checkbox"/> |
| FS26d | Priority                                                                                   | 14.5, 15.3.2.5       | Yes <input type="checkbox"/> | No <input type="checkbox"/> |
| FS27d | Protection                                                                                 | 14.6, 15.3.2.6       | Yes <input type="checkbox"/> | No <input type="checkbox"/> |

**C.8.2 Facilities received during call setup and clearing**

| Item | Protocol Feature                                 | References                                 | Status | Support                                                   |
|------|--------------------------------------------------|--------------------------------------------|--------|-----------------------------------------------------------|
| FR0  | General coding of facilities in received packets | 15.1, table 16, table 17, 15.3.1, table 19 | M      | Yes <input type="checkbox"/>                              |
| FR14 | Reference Number facility in received packets    | 15.2.2.14                                  | RN: M  | N/A <input type="checkbox"/> Yes <input type="checkbox"/> |

Support for each of the items in the following subclauses of C.8.2 is optional. Mark "Ignore" for unsupported facilities that are ignored on receipt; mark "Error" for unsupported facilities that cause ERROR-C action on receipt.

**C.8.2.1 Facilities received in INCOMING CALL packets**

If incoming Virtual Calls, predicate S2, are not supported, mark N/A and continue at C.8.2.2:

N/A ☐

| Item    | Protocol Feature                                                  | References                | Support                                                                                     |
|---------|-------------------------------------------------------------------|---------------------------|---------------------------------------------------------------------------------------------|
| * FR1pi | Flow Control Parameter Negotiation, packet size                   | 13.12, 15.2.2.1.1         | Yes <input type="checkbox"/> Ignore <input type="checkbox"/> Error <input type="checkbox"/> |
| * FR1wi | Flow Control Parameter Negotiation, window size                   | 13.12, 15.2.2.1.2         | Yes <input type="checkbox"/> Ignore <input type="checkbox"/> Error <input type="checkbox"/> |
| * FR2i  | Throughput Class Negotiation                                      | 13.13, 15.2.2.2, table 18 | Yes <input type="checkbox"/> Ignore <input type="checkbox"/> Error <input type="checkbox"/> |
| FR3b    | Closed User Group Selection, basic format                         | 13.14.6, 15.2.2.3.1       | Yes <input type="checkbox"/> Ignore <input type="checkbox"/> Error <input type="checkbox"/> |
| FR3e    | Closed User Group Selection, extended format                      | 13.14.6, 15.2.2.3.2       | Yes <input type="checkbox"/> Ignore <input type="checkbox"/> Error <input type="checkbox"/> |
| FR4b    | Closed User Group With Outgoing Access Selection, basic format    | 13.4.7, 15.2.2.4.1        | Yes <input type="checkbox"/> Ignore <input type="checkbox"/> Error <input type="checkbox"/> |
| FR4e    | Closed User Group With Outgoing Access Selection, extended format | 13.4.7, 15.2.2.4.2        | Yes <input type="checkbox"/> Ignore <input type="checkbox"/> Error <input type="checkbox"/> |
| FR5     | Bilateral Closed User Group Selection                             | 13.15, 15.2.2.5           | Yes <input type="checkbox"/> Ignore <input type="checkbox"/> Error <input type="checkbox"/> |
| FR6a    | Fast Select                                                       | 13.16, 13.17, 15.2.2.6    | Yes <input type="checkbox"/> Ignore <input type="checkbox"/> Error <input type="checkbox"/> |
| FR6b    | Reverse Charging                                                  | 13.18, 13.19, 15.2.2.6    | Yes <input type="checkbox"/> Ignore <input type="checkbox"/> Error <input type="checkbox"/> |
| FR11    | Call Redirection or Call Deflection Notification                  | 13.25.3, 15.2.2.11        | Yes <input type="checkbox"/> Ignore <input type="checkbox"/> Error <input type="checkbox"/> |
| FR12i   | Transit Delay Selection And Indication                            | 13.27, 15.2.2.13          | Yes <input type="checkbox"/> Ignore <input type="checkbox"/> Error <input type="checkbox"/> |
| FR99i   | Local non-X.25 facilities, following Facility Marker              | 15.1, table 16            | Yes <input type="checkbox"/> Ignore <input type="checkbox"/> Error <input type="checkbox"/> |
| FR20i   | Facility Marker, CCITT-specified DTE facilities                   | 15.1                      | Yes <input type="checkbox"/> Ignore <input type="checkbox"/> Error <input type="checkbox"/> |
| FR21    | Calling Address Extension                                         | 14.1, 15.3.2.1            | Yes <input type="checkbox"/> Ignore <input type="checkbox"/> Error <input type="checkbox"/> |
| FR22i   | Called Address Extension                                          | 14.2, 15.3.2.2            | Yes <input type="checkbox"/> Ignore <input type="checkbox"/> Error <input type="checkbox"/> |
| FR23    | Minimum Throughput Class Negotiation                              | 14.3, 15.3.2.3            | Yes <input type="checkbox"/> Ignore <input type="checkbox"/> Error <input type="checkbox"/> |
| FR24i   | End-to-End Transit Delay Negotiation                              | 14.4, 15.3.2.4            | Yes <input type="checkbox"/> Ignore <input type="checkbox"/> Error <input type="checkbox"/> |
| FR25i   | Expedited Data Negotiation                                        | 14.7, 15.3.2.7            | Yes <input type="checkbox"/> Ignore <input type="checkbox"/> Error <input type="checkbox"/> |
| FR26i   | Priority                                                          | 14.5, 15.3.2.5            | Yes <input type="checkbox"/> Ignore <input type="checkbox"/> Error <input type="checkbox"/> |
| FR27i   | Protection                                                        | 14.6, 15.3.2.6            | Yes <input type="checkbox"/> Ignore <input type="checkbox"/> Error <input type="checkbox"/> |

Predicate usage: FR1pi, FR1wi, FR2i are used in C.10.1

**C.8.2.2 Facilities received in CALL CONNECT packets**

If outgoing calls (without restricted response), predicate S1ac, are not supported, mark N/A and continue at C.8.2.3: N/A ☐

| Item    | Protocol Feature                                     | References                  | Support                      |                                 |                                |
|---------|------------------------------------------------------|-----------------------------|------------------------------|---------------------------------|--------------------------------|
| * FR1pr | Flow Control Parameter Negotiation, packet size      | 13.12, 15.2.2.1.1, table 12 | Yes <input type="checkbox"/> | Ignore <input type="checkbox"/> | Error <input type="checkbox"/> |
| * FR1wr | Flow Control Parameter Negotiation, window size      | 13.12, 15.2.2.1.2, table 12 | Yes <input type="checkbox"/> | Ignore <input type="checkbox"/> | Error <input type="checkbox"/> |
| * FR2r  | Throughput Class Negotiation                         | 13.13, 15.2.2.2, table 18   | Yes <input type="checkbox"/> | Ignore <input type="checkbox"/> | Error <input type="checkbox"/> |
| FR10r   | Called Line Address Modified Notification            | 13.26, 15.2.2.12            | Yes <input type="checkbox"/> | Ignore <input type="checkbox"/> | Error <input type="checkbox"/> |
| FR12r   | Transit Delay Selection And Indication               | 13.27, 15.2.2.13            | Yes <input type="checkbox"/> | Ignore <input type="checkbox"/> | Error <input type="checkbox"/> |
| FR99r   | Local non-X.25 facilities, following Facility Marker | 15.1, table 16              | Yes <input type="checkbox"/> | Ignore <input type="checkbox"/> | Error <input type="checkbox"/> |
| FR20r   | Facility Marker, CCITT-specified DTE facilities      | 15.1                        | Yes <input type="checkbox"/> | Ignore <input type="checkbox"/> | Error <input type="checkbox"/> |
| FR22r   | Called Address Extension                             | 14.2, 15.3.2.2              | Yes <input type="checkbox"/> | Ignore <input type="checkbox"/> | Error <input type="checkbox"/> |
| FR24r   | End-to-End Transit Delay Negotiation                 | 14.4, 15.3.2.4              | Yes <input type="checkbox"/> | Ignore <input type="checkbox"/> | Error <input type="checkbox"/> |
| FR25r   | Expedited Data Negotiation                           | 14.7, 15.3.2.7              | Yes <input type="checkbox"/> | Ignore <input type="checkbox"/> | Error <input type="checkbox"/> |
| FR26r   | Priority                                             | 14.5, 15.3.2.5              | Yes <input type="checkbox"/> | Ignore <input type="checkbox"/> | Error <input type="checkbox"/> |
| FR27r   | Protection                                           | 14.6, 15.3.2.6              | Yes <input type="checkbox"/> | Ignore <input type="checkbox"/> | Error <input type="checkbox"/> |

**C.8.2.3 Facilities received in CLEAR INDICATION packets**

If response to call clearing, item C1, is not supported, mark N/A and continue at C.8.2.4:

N/A ☐

| Item  | Protocol Feature                                     | References        | Support                      |                                 |                                |
|-------|------------------------------------------------------|-------------------|------------------------------|---------------------------------|--------------------------------|
| FR8ad | Charging Information, monetary unit                  | 13.22, 15.2.2.8.2 | Yes <input type="checkbox"/> | Ignore <input type="checkbox"/> | Error <input type="checkbox"/> |
| FR8bd | Charging Information, segment count                  | 13.22, 15.2.2.8.3 | Yes <input type="checkbox"/> | Ignore <input type="checkbox"/> | Error <input type="checkbox"/> |
| FR8cd | Charging Information, call duration                  | 13.22, 15.2.2.8.4 | Yes <input type="checkbox"/> | Ignore <input type="checkbox"/> | Error <input type="checkbox"/> |
| FR10d | Called Line Address Modified Notification            | 13.26, 15.2.2.12  | Yes <input type="checkbox"/> | Ignore <input type="checkbox"/> | Error <input type="checkbox"/> |
| FR99d | Local non-X.25 facilities, following Facility Marker | 15.1, table 16    | Yes <input type="checkbox"/> | Ignore <input type="checkbox"/> | Error <input type="checkbox"/> |
| FR20d | Facility Marker, CCITT-specified DTE facilities      | 15.1              | Yes <input type="checkbox"/> | Ignore <input type="checkbox"/> | Error <input type="checkbox"/> |
| FR22d | Called Address Extension                             | 14.2, 15.3.2.2    | Yes <input type="checkbox"/> | Ignore <input type="checkbox"/> | Error <input type="checkbox"/> |

**C.8.2.4 Facilities received in CLEAR CONFIRMATION packets**

If initiation of call clearing, predicate C2, is not supported, mark N/A and continue at C.9:

N/A ☐

| Item  | Protocol Feature                    | References        | Support                      |                                 |                                |
|-------|-------------------------------------|-------------------|------------------------------|---------------------------------|--------------------------------|
| FR8af | Charging Information, monetary unit | 13.22, 15.2.2.8.2 | Yes <input type="checkbox"/> | Ignore <input type="checkbox"/> | Error <input type="checkbox"/> |
| FR8bf | Charging Information, segment count | 13.22, 15.2.2.8.3 | Yes <input type="checkbox"/> | Ignore <input type="checkbox"/> | Error <input type="checkbox"/> |
| FR8cf | Charging Information, call duration | 13.22, 15.2.2.8.4 | Yes <input type="checkbox"/> | Ignore <input type="checkbox"/> | Error <input type="checkbox"/> |

Predicate definition and usage: FR8f = FR8af OR FR8bf OR FR8cf is used in item CP4e (predicate C2ci)

## C.9 Registration-facilities

### C.9.1 Registration-facilities sent

If On-line Facility Registration, item Z4i or Z4r, is not supported, mark N/A and continue at C.10:

N/A ☐

| Item | Protocol Feature                                                 | References               | Status | Support                      |
|------|------------------------------------------------------------------|--------------------------|--------|------------------------------|
| GS0  | General coding of Registration-Facilities in transmitted packets | 16.1, table 21, table 22 | M      | Yes <input type="checkbox"/> |

#### C.9.1.1 Registration-Facilities sent in REGISTRATION REQUEST packets

If initiation of On-line Facility Registration, item Z4i, is not supported, mark N/A and continue at C.9.1.2:

N/A ☐

| Item   | Protocol Feature                                                                                                              | References         | Status           | Support                                                                                                                                           |
|--------|-------------------------------------------------------------------------------------------------------------------------------|--------------------|------------------|---------------------------------------------------------------------------------------------------------------------------------------------------|
| GS1i   | Non-negotiable Facilities Values Registration-Facility                                                                        | 16.2.2.1           | X                | No <input type="checkbox"/>                                                                                                                       |
| GS2i   | Availability of Facilities Registration-Facility                                                                              | 16.2.2.2           | X                | No <input type="checkbox"/>                                                                                                                       |
| GS3i   | Facilities That May Be Negotiated At Any Time Registration-Facility                                                           | 16.2.2.3           | O                | Yes <input type="checkbox"/> No <input type="checkbox"/>                                                                                          |
|        | If item GS3i is not supported, mark N/A and continue at GS4i below.<br>Invocation indicated (see Note) :                      | 16.2.2.3           |                  | N/A <input type="checkbox"/>                                                                                                                      |
| GS3ia  | — Incoming Calls Barred                                                                                                       |                    | O                | Yes <input type="checkbox"/> No <input type="checkbox"/>                                                                                          |
| GS3ib  | — Outgoing Calls Barred                                                                                                       |                    | O                | Yes <input type="checkbox"/> No <input type="checkbox"/>                                                                                          |
| GS3ic  | — Fast Select Acceptance                                                                                                      |                    | O                | Yes <input type="checkbox"/> No <input type="checkbox"/>                                                                                          |
| GS3id  | — Reverse Charging Acceptance                                                                                                 |                    | Ec: O<br>else: X | N/A <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/><br>N/A <input type="checkbox"/> No <input type="checkbox"/> |
| GS3ie  | — Flow Control Parameter Negotiation                                                                                          |                    | O                | Yes <input type="checkbox"/> No <input type="checkbox"/>                                                                                          |
| GS3if  | — Throughput Class Negotiation                                                                                                |                    | O                | Yes <input type="checkbox"/> No <input type="checkbox"/>                                                                                          |
| GS3ig  | — Charging Information per Interface                                                                                          |                    | Ec: O<br>else: X | N/A <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/><br>N/A <input type="checkbox"/> No <input type="checkbox"/> |
| GS4i   | Facilities That May Be Negotiated Only When All Logical Channels Used For Virtual Calls Are In State p1 Registration-Facility | 16.2.2.4           | O                | Yes <input type="checkbox"/> No <input type="checkbox"/>                                                                                          |
|        | If item GS4i is not supported, mark N/A and continue at GS5i below.<br>Invocation indicated (see Note) :                      | 16.2.2.4           |                  | N/A <input type="checkbox"/>                                                                                                                      |
| GS4ia  | — Extended Packet Sequence Numbering                                                                                          |                    | O                | Yes <input type="checkbox"/> No <input type="checkbox"/>                                                                                          |
| GS4ib  | — Packet Retransmission                                                                                                       |                    | O                | Yes <input type="checkbox"/> No <input type="checkbox"/>                                                                                          |
| GS4ic  | — D-bit Modification                                                                                                          |                    | Ec: O<br>else: X | N/A <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/><br>N/A <input type="checkbox"/> No <input type="checkbox"/> |
|        | If Virtual Call service, item Vs, is not supported, mark N/A and continue at C.9.1.2                                          |                    |                  | N/A <input type="checkbox"/>                                                                                                                      |
| * GS5i | Nonstandard Default Packet Sizes Registration-Facility                                                                        | 16.2.2.5           | O                | Yes <input type="checkbox"/> No <input type="checkbox"/>                                                                                          |
| * GS6i | Nonstandard Default Window Sizes Registration-Facility                                                                        | 16.2.2.6           | O                | Yes <input type="checkbox"/> No <input type="checkbox"/>                                                                                          |
| * GS7i | Default Throughput Classes Assignment Registration-Facility                                                                   | 16.2.2.7, table 23 | O                | Yes <input type="checkbox"/> No <input type="checkbox"/>                                                                                          |
| * GS8i | Logical Channel Types Ranges Registration-Facility                                                                            | 16.2.2.8           | O                | Yes <input type="checkbox"/> No <input type="checkbox"/>                                                                                          |

NOTE — Each of the following items corresponds to negotiation of a single facility. A "Yes" answer means that the implementation (always or sometimes) sets the relevant bit in the Registration Parameter to 1, to indicate invocation of the facility; a "No" answer means that the bit is always set to 0 to indicate revocation.

Predicate usage: GS5i, GS6i, GS7i, GS8i are used in, respectively, items GR5i, GR6i, GR7i, GR8i.