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Information technology — Open Systems Interconnection — Connection-oriented Session protocol: Protocol Implementation Conformance Statement (PICS) proforma

Technologies de l'information — Interconnexion de systèmes ouverts (OSI) — Protocole de session en mode orienté connexion: Formulaire de déclaration de conformité de la mise en œuvre du protocole (PICS)

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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.

International Standard ISO/IEC 8327-2 was prepared by Joint Technical Committee ISO/IEC JTC 1, *Information technology*, Subcommittee SC 21, *Open Systems Interconnection, data management and open distributed processing*, in collaboration with ITU-T. The identical text is published as ITU-T Recommendation X.245.

ISO/IEC 8327 consists of the following parts, under the general title *Information technology — Open Systems Interconnection — Connection-oriented Session protocol*:

— *Part 1: Protocol specification*

— *Part 2: Protocol Implementation Conformance Statement (PICS) proforma*

Annex A forms an integral part of this part of ISO/IEC 8327. Annexes B and C are for information only.

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Introduction

This Recommendation | International Standard is one of a set of Recommendations | International Standards produced to facilitate the interconnection of information processing systems. It is related to other Recommendations and International Standards in the set as defined by the Reference Model for Open Systems Interconnection (see ITU-T Rec. X.200 | ISO/IEC 7498-1). The Reference Model subdivides the area of standardization for interconnection into a series of layers of specification, each of manageable size.

The goal of Open Systems Interconnection is to allow, with a minimum of technical agreement outside the interconnection standards, the interconnection of information processing systems:

- from different manufacturers;
- under different managements;
- of different levels of complexity; and
- of different technologies.

ITU-T Rec. X.225 | ISO/IEC 8327-1 specifies the Connection-Oriented Session Protocol.

To evaluate the conformance of a particular implementation, it is necessary to have a description of the capabilities and options which have been implemented. Such a description is called a Protocol Implementation Conformance Statement (PICS).

This Recommendation | International Standard includes the PICS proforma for the Connection-Oriented Session Protocol as defined in ITU-T Rec. X.225 | ISO/IEC 8327-1.

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INTERNATIONAL STANDARD

ITU-T RECOMMENDATION

INFORMATION TECHNOLOGY – OPEN SYSTEMS INTERCONNECTION – CONNECTION-ORIENTED SESSION PROTOCOL: PROTOCOL IMPLEMENTATION CONFORMANCE STATEMENT (PICS) PROFORMA

1 Scope

This Recommendation | International Standard provides the Protocol Implementation Conformance Statement (PICS) proforma for the connection-oriented Session protocol specification ITU-T Rec. X.225 | ISO/IEC 8327-1. This PICS proforma is in compliance with the relevant requirements, and in accordance with the relevant guidance for a PICS proforma, given in ITU-T Rec. X.296 | ISO/IEC 9646-7. Detail of the use of this proforma is provided in this Recommendation | International Standard.

The supplier of an implementation which is claimed to conform to ITU-T Rec. X.225 | ISO/IEC 8327-1 is required to complete a copy of the PICS proforma provided in Annex A, and is required to provide the information necessary to uniquely identify both the supplier and the implementation.

2 Normative references

The following Recommendations and International Standards contain provisions which, through reference in this text, constitute provisions of this Recommendation | International Standard. At the time of publication, the editions indicated were valid. All Recommendations and Standards are subject to revision, and the parties to agreement based on this Recommendation | International Standard are encouraged to investigate the possibility of applying the most recent edition of the Recommendations and Standards indicated below. Members of IEC and ISO maintain registers of currently valid International Standards. The Telecommunications Standardization Bureau of the ITU maintains a list of currently valid ITU-T Recommendations.

2.1 Identical Recommendations | International Standards

- ITU-T Recommendation X.200 (1994) | ISO/IEC 7498-1:1994, *Information technology – Open Systems Interconnection – Basic Reference Model: The Basic Model.*
- ITU-T Recommendation X.214 (1993) | ISO/IEC 8072:1994, *Information technology – Open Systems Interconnection – Transport service definition.*
- ITU-T Recommendation X.215 (1995) | ISO/IEC 8326:1996, *Information technology – Open Systems Interconnection – Session service definition.*
- ITU-T Recommendation X.225 (1995) | ISO/IEC 8327-1:1996, *Information technology – Open Systems Interconnection – Connection-oriented Session protocol – Protocol specification.*

2.2 Paired Recommendations | International Standards equivalent in technical content

- ITU-T Recommendation X.290 (1995), *OSI conformance testing methodology and framework for protocol Recommendations for ITU-T applications – General concepts.*

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

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- ITU-T Recommendation X.296 (1995), *OSI conformance testing methodology and framework for protocol Recommendations for ITU-T applications – Implementation conformance statements.*

  ISO/IEC 9646-7:1995, *Information technology – Open Systems Interconnection – Conformance testing methodology and framework – Part 7: Implementation Conformance Statements.*

3 Definitions

For the purposes of this Recommendation | International Standard, the following definitions apply.

3.1 Terms defined in ITU-T Rec. X.225 | ISO/IEC 8327-1.

3.2 The following terms defined in ITU-T Rec. X.290 | ISO/IEC 9646-1:

a) Protocol Implementation Conformance Statement (PICS);

b) PICS proforma.

3.3 Additional terms:

- Requestor: the SPM that initiates a particular action;
- Acceptor: the SPM that accepts a particular action.

4 Abbreviations

4.1 Abbreviations are given in ITU-T Rec. X.225 | ISO/IEC 8327-1 and in clause 8.

4.2 This Recommendation | International Standard makes use of the following abbreviation given in ITU-T Rec. X.290 | ISO/IEC 9646-1:

- PICS.

4.3 For the purposes of this Recommendation | International Standard, the following abbreviations also apply:

Sts Status column

Spt Support column

Sdr Sender

Rcv Receiver

5 Conformance

A conforming PICS shall be technically equivalent to the ITU | ISO/IEC published PICS proforma and shall preserve the numbering and ordering of the items in the ITU | ISO/IEC PICS proforma.

A PICS which conforms to this Recommendation | International Standard shall:

a) describe an implementation which conforms to ITU-T Rec. X.225 | ISO/IEC 8327-1;

b) be a conforming PICS proforma, which has been completed in accordance with the instructions for completion given in A.2;

c) include the information necessary to uniquely identify both the supplier and the implementation.

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Annex A

Protocol Implementation Conformance Statement (PICS) Proforma for the Connection-Oriented Session Protocol[1)]

(This annex forms an integral part of this Recommendation | International Standard)

A.1 Identification of PICS proforma corrigenda

The supplier of the PICS proforma shall identify any corrigenda (i.e. Technical Corrigenda or equivalent) to the published proforma that have been applied. Suppliers of the proforma should modify the proforma, or attach relevant additional pages in order to apply the corrigenda, and then record the application of the corrigenda in the table below.

Identification of corrigenda applied to this PICS proforma	ITU-T Rec. X.245 (1995) | ISO/IEC 8327-2:1996 Corr: Corr: Corr:

A.2 Instructions

A.2.1 Purpose and structure of the proforma

The purpose of this PICS proforma is to provide suppliers of implementation of ITU-T Rec. X.225 | ISO/IEC 8327-1 with a consistent means of stating which capabilities have been implemented.

The proforma is in form of a questionnaire and consists of a set of items. An item is provided for each capability for which an implementation choice is allowed. Items are also provided for major mandatory capabilities for which no implementation choice is allowed. Each item includes an item number, an item description, a status value specifying the support requirement, and room for a support answer to be provided by the supplier.

This clause provides general information and instructions for completion of the proforma.

Subclause A.3 is for identification of the implementation.

Subclause A.4 contains the means of specifying, at high level, the protocol and corrigenda that have been implemented.

Subclause A.5 contains the global statement of conformance.

Subclauses A.6 onwards contain tables in which the supplier specifies details of the implementation options chosen.

NOTE – Throughout the PICS proforma, tables specifying Requestor and Accpetor roles are inserted as required for precise definition of the status of SPDUs and SPDU parameters, but these tables shall not be used for static conformance review nor for test case selection.

A.2.2 Symbols, terms and abbreviations

A.2.2.1 Introduction

Notations have been introduced in order to reduce the size of tables in the PICS proforma. These have allowed the use of multi-column layout where the colums are headed 'Status', 'Support', 'Value', 'Mnemonic' and 'Length'. The definition of each are given below.

Additionally, the following definitions apply.

A.2.2.1.1 (PICS) item: A row in a PICS proforma table.

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

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A.2.2.1.2 (PICS) question: The question to be answered in the intersection of a PICS item and either a support column (i.e. "Is this item supported in the context applying to this table and column") or supported values column (i.e. "What values are supported for this item in the context applying to this table and column") in a PICS proforma table.

A.2.2.1.3 status (value): An allowed entry in the status column for an item in a PICS proforma table.

A.2.2.1.4 (support) answer: An allowed entry in the support or supported values columns for an item in a PICS, in answer to a PICS question.

A.2.2.2 Item numbering

Each line within the PICS proforma which requires implementation detail to be entered is given an item number in the first column. The item number column provides a means of uniquely referencing each possible answer within the PICS proforma. Such referencing is necessary for specifying predicates, conditional expressions, test suite parameters, and test suite selection expressions.

The means of referencing individual answers is to specify the following sequence:

a) if, and only if, the reference is being made from another Specification, then start with an unambiguous identifier for the relevant ICS proforma specification, enclosed in parentheses – this identifier is stated in the PICS proforma specification and is updated whenever the PICS proforma is updated – it is recommended that this identifier should be relevant Specification number and year of publication, as is used in a Normative References clause, and this is the default for such identifiers;

b) the number of the relevant table or, if the tables are not numbered, of the smallest subclause enclosing the relevant table;

c) a solidus character, "/";

d) the item number or mnemonic reference to the item, to identify the row in which the answer appears;

e) if, and only if, more than one question occurs in the row identified by the item number or mnemonic reference, then each possible answer is implicitly labelled a, b, c, etc., from left to right, and this letter is appended to the sequence, prefixed by a solidus character ("/") if a mnemonic reference is used.

If mnemonic references are specified and each uniquely identify an item in the PICS proforma, then entries b) and c) in the above sequence may be omitted.

A.2.2.3 Status column

This column indicates the level of support required for conformance to ITU-T Rec. X225 | ISO/IEC 8327-1, the given values are taken from the Session Protocol Specification (see ITU-T Rec. X.225 | ISO/IEC 8327-1).

A.2.2.3.1 Definitions applying to the tables in clauses A.4 to A.6

The values are as follows:

- 'm' Mandatory support is required. The implementation shall support the functionalities described in ITU-T Rec. X.225 | ISO/IEC 8327-1 for the specified item.
- 'o' Optional support is permitted for conformance to ITU-T Rec. X.225 | ISO/IEC 8327-1. According to some specific reason, the implementation is not obliged to support the specified item. If implemented, it shall conform to the specifications and restrictions contained in ITU-T Rec. X.225 | ISO/IEC 8327-1. Therefore the constraints described for the mandatory support above also apply.
- 'o.*n*' Selectable options among a set of items (where *n* is the number which identifies the group of optionals which are linked together). The implementation shall support at least one of the given items. [For the selected item(s), the constraints described for the mandatory support above also apply.]
- 'c*n*' The item is conditional (where *n* is the number which identifies the condition which is applicable). The definitions for the conditional statements used in Annex A are written under the table where they are used, and indexed in Annex B.
- 'n/a' The item is not applicable.

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A.2.2.3.2 Definitions applying to the tables in clause A.7 (Supported SPDUs)

The values are as follows:

Sender item:

- 'm' Mandatory support is required. The implementation shall be able:
  - to build the SPDU (i.e. to build correctly the heading and all the mandatory parameters within the SPDU) in the situations required by the Protocol Machine; and
  - to encode the SPDU into the TSDU, according to a valid encoding format.
- 'o' Optional support is permitted for conformance to ITU-T Rec. X.225 | ISO/IEC 8327-1. According to some specific reason, the implementation is not obliged to be able to build the SPDU. If implemented, it shall conform to the specifications and restrictions contained in ITU-T Rec. X.225 | ISO/IEC 8327-1. Therefore the constraints described for the mandatory support above also apply.
- 'o.*n*' Selectable options among a set of items (where *n* is the number which identifies the group of optionals which are linked together). The implementation shall support at least one of the given items. [For the selected item(s), the constraints described for the mandatory support above also apply.]
- 'c*n*' The item is conditional (where *n* is the number which identifies the condition which is applicable). The definitions for the conditional statements used in Annex A are written under the table where they are used, and indexed in Annex B. Resolution of the condition (e.g. depending on protocol version, protocol mechanism, etc.) yields to 'm', 'o' or 'n/a'.
- 'n/a' The item is not applicable.

Receiver item:

- 'm' Mandatory support is required. The implementation shall be able:
  - to syntactically identify the SPDU [i.e. to decode the heading and all of the parameters which are present (Type and Length in TLV coding scheme)]; and
  - to process it correctly.
- 'o' Optional support is permitted for conformance to ITU-T Rec. X.225 | ISO/IEC 8327-1. If implemented, it shall conform to the specifications and restrictions contained in ITU-T Rec. X.225 | ISO/IEC 8327-1. Therefore the constraints described for the mandatory support above also apply.
- 'o.*n*' Selectable options among a set of items (where *n* is the number which identifies the group of optionals which are linked together). The implementation shall support at least one of the given items. [For the selected item(s), the constraints described for the mandatory support above also apply.]
- 'c*n*' The item is conditional (where *n* is the number which identifies the condition which is applicable). The definitions for the conditional statements used in Annex A are written under the table where they are used, and indexed in Annex B. Resolution of the condition (e.g. depending on protocol version, protocol mechanism, etc.) yields to 'm', 'o' or 'n/a'.
- 'n/a' The item is not applicable.

A.2.2.3.3 Definitions applying to the tables in clause A.8 (Supported SPDU parameters)

NOTE – The status indicated for the parameters reflects static conformance requirements. The details about the use of these parameters in specific instances of communications (i.e. dynamic conformance) are to be found in the Session protocol standard (ITU-T Rec. X.225 | ISO/IEC 8327-1). It is reminded that a parameter with the Length equal to zero shall be considered as absent.

The values are as follows:

Sender item:

- 'm' Mandatory support is required. The implementation shall be able to build and to encode this parameter within the appropriate SPDU.
- 'o' Optional support is permitted for conformance to ITU-T Rec. X.225 | ISO/IEC 8327-1. According to some specific reason, the implementation is not obliged to be able to build the parameter. If implemented, it shall conform to the specifications and restrictions contained in ITU-T Rec. X.225 | ISO/IEC 8327-1. Therefore the constraints described for the mandatory support above also apply.

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- 'c*n*' The item is conditional (where *n* is the number which identifies the condition which is applicable). The definitions for the conditional statements used in Annex A are written under the table where they are used, and indexed in Annex B. Resolution of the condition (e.g. depending on protocol version, protocol mechanism, etc.) yields to 'm', 'o' or 'n/a'.
- 'n/a' The item is not applicable.

Receiver item:

- 'm' Mandatory support is required. The implementation shall be able to syntactically and semantically identify the SPDU parameter and to process it correctly.
- 'o' Optional support is permitted for conformance to ITU-T Rec. X.225 | ISO/IEC 8327-1. If implemented, it shall conform to the specifications and restrictions contained in ITU-T Rec. X.225 | ISO/IEC 8327-1. Therefore the constraints described for the mandatory support above also apply.
- 'c*n*' The item is conditional (where *n* is the number which identifies the condition which is applicable). The definitions for the conditional statements used in Annex A are written under the table where they are used, and indexed in Annex B. Resolution of the condition (e.g. depending on protocol version, protocol mechanism, etc.) yields to 'm', 'o' or 'n/a'.
- 'n/a' The item is not applicable.

A.2.2.4 Support column

The 'Support' column shall be completed by the supplier or implementor to indicate the level of implementation of each feature. The proforma has been designed such that the only entries required in the 'Support' column are:

If the Status column yields to 'm' or 'o', the following answers are valid:

'Y' Yes, the feature has been implemented.

'N' No, the feature has not been implemented.

If the Status column yields to 'n/a', the unique following answer is valid:

'–' Not applicable.

A.2.2.5 Value column

The 'Value' column requires the specification of the range of values implemented for a feature, where relevant.

A.2.2.6 Mnemonic column

The 'Mnemonic' column is given to facilitate the interpretation of the conditional statements throughout the PICS proforma.

The mnemonics are designed so that the implementor should easily understand their contents. Their names are generated as follows:

a) a character identifying the Session layer (S);

b) an hyphen character;

c) a sequence of character which is derived, where possible, from the abbreviations used in the Session protocol specification.

A full alphanumerical list of all the defined 'Mnemonics' is given in Annex C.

A.2.2.7 Length column

The 'Length' column is given for information only in A.8, in order to indicate a specific length requirement for a parameter. Otherwise, it is recommended not to fill in this column.

If values are given in the 'Support' columns (Sender and/or Receiver), they shall conform to the value(s) given in the 'Status' column.

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The values are as follows:

- 'x' A specific number of octets is given in ITU-T Rec. X.225 | ISO/IEC 8327-1.
- '0-y' A range of number of octets is given in ITU-T Rec. X.225 | ISO/IEC 8327-1.
- 'see Ref.' For a specific reason (total length of the SPDU), an explicit range of number of octets can not be given in the PICS proforma. For more details, the implementor shall refer to ITU-T Rec. X.225 | ISO/IEC 8327-1.

A.2.3 Instructions for completion

The supplier shall complete all entries in the column marked 'Support'. In certain clauses of the PICS proforma further guidance for completion may be necessary. Such guidance shall supplement the guidance given in this clause and shall have a scope restricted to the clause in which it appears. In addition, other specifically identified information shall be provided by the implementor where requested. No changes shall be made to the proforma except the completion as required. Recognising that the level of detail required may, in some instances, exceed the space available for responses a number of responses specifically allow for the addition of appendices to the PICS.

A.3 Identification of the implementation

A.3.1 Date of statement

1	Date of statement? (yy-mm-dd)

A.3.2 Implementation details

The supplier of the protocol implementation shall specify the information necessary to uniquely identify the implementation and the system in which it may reside. This may include details of:

a) supplier, implementation name, operating system, suitable hardware;

b) system supplier and/or client of the test laboratory that is to test the implementation;

c) information on whom to contact if there are queries concerning the content of the PICS.

1	

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A.4 Protocol Identification

A.4.1 ITU-T Rec. X.225 | ISO/IEC 8327-1 protocol details

	Identification of Protocol Specification	Support	Comment
–	ITU-T Rec. X.225 (1994) | ISO/IEC 8327-1:1996		
1			
2			
3			

A.4.2 ITU-T Rec. X.225 | ISO/IEC 8327-1 protocol versions

Which version of the Session Protocol is described in this PICS?

		Status	Support	Mnemonic	Comment
1	Version 1	o.1		S-V1	
2	Version 2	o.1			
o.1:	the implementation of one, and only one, version of the protocol shall be described in this proforma (see below).				

An implementation shall be described by completing a separate PICS proforma for each supported protocol version. PICS document for all versions of the protocol for which conformance is claimed should be attached to each other, and used together.

Which other versions of the Session Protocol does the implementation support?

		Status	Support	Comment
3	Version 1	o		
4	Version 2	o		

A.4.3 ITU-T Rec. X.225 | ISO/IEC 8327-1 technical corrigenda implemented

Identification of corrigenda applied to the implementation	ITU-T Rec. X.225 (1994) | ISO/IEC 8327-1:1996 Corr: Corr: Corr: Corr: Corr:

A.5 Global statement of conformance

1	Are all mandatory features implemented? (yes or no)
NOTE – If a positive response is not given to this box, then the implementation does not conform to ITU-T Rec. X.225 | ISO/IEC 8327-1.	

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A.6 Supported functional units and protocol mechanisms

A.6.1 Functional units

	Functional Unit	Status	Support	Mnemonic	Comment
1	Kernel	m			
2	Negotiated Release	o		S-FU(NR)	
3	Half Duplex	o.2		S-FU(HD)	
4	Duplex	o.2		S-FU(FD)	
5	Expedited Data (Note)	o		S-FU(EX)	
6	Typed Data	o		S-FU(TD)	
7	Capability Data Exchange	c1		S-FU(CD)	
8	Minor Synchronize	o		S-FU(SY)	
9	Symmetric Synchronize	o		S-FU(SS)	
10	Data Separation	c2		S-FU(DS)	
11	Major Synchronize	o		S-FU(MA)	
12	Resynchronize	o		S-FU(RESYN)	
13	Exceptions	c3		S-FU(EXCEP)	
14	Activity management	o		S-FU(ACT)	

o.2: at least one of the functional units Duplex and Half Duplex shall be implemented.

c1: if [S-FU(ACT)] then o else n/a.

c2: if [S-FU(SY) or S-FU(SS)] then o else n/a.

c3: if [S-FU(HD)] then o else n/a.

NOTE – The TRANSPORT Expedited data service is required to support the SESSION Expedited data functional unit.

A.6.2 Protocol mechanisms

	Mechanism	Status	Support	Range of values	Mnemonic	Comment
1	Use of transport expedited data (Extended control Quality of Service)	c4		–	S-EXP_T	
2	Reuse of transport connection	o		–	S-REUSE_T	
3	Basic concatenation	m		–		
4	Extended concatenation (sending)	o		–		
5	Extended concatenation (receiving)	o		–	S-XCONC_RCV	
6	Segmenting (sending)	o			S-SEG_SDR	
7	Segmenting (receiving)	o			S-SEG_RCV	
8	Max size of SS-user-data (S-CONNECT) > 512	o			S-MAXSIZE_512	
9	Max size of SS-user-data (S-CONNECT) > 10240	o			S-MAXSIZE_10240	
10	Max size of SS-user-data (S-ABORT) > 9	o			S-MAXSIZE_9	

c4: if [S-FU(EX)] then m else o.

NOTES

1 The use of the TRANSPORT Expedited data service is mandatory in order to support the SESSION Expedited data functional unit, but is also related to the Extended Control of Quality of Service.

2 Two kinds of segmentation exist in the Session protocol. Lines 6 and 7 address the segmentation of SPDUs into several TSDUs. Lines 8, 9 and 10 adress Session Version 2 (Unlimited User Data and Enclosure Item) with segmentation of an SSDU into several SPDUs.

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A.7 Supported SPDUs

A.7.1 Kernel functional unit

A.7.1.1 Supported roles

A.7.1.1.1 Session Connection

Does the implementation support the Session Connection as:

	Role	Status	Support	Mnemonic	Comment
1	Initiator	o.3		S-CON_initiator	
2	Responder	o.3		S-CON_responder	
o.3: a conforming implementation shall support at least one of the above roles.					

A.7.1.1.2 Orderly Release

Does the implementation support the Orderly Release as:

	Role	Status	Support	Mnemonic	Comment
1	Requestor	o.4		S-REL_requestor	
2	Acceptor	o.4		S-REL_acceptor	
o.4: a conforming implementation shall support at least one of the above roles.					

A.7.1.1.3 Normal Data Transfer

Does the implementation support the Normal Data Transfer as:

	Role	Status	Support	Mnemonic	Comment
1	Requestor	o.5		S-DATA_requestor	
2	Acceptor	o.5		S-DATA_acceptor	
o.5: a conforming implementation shall support at least one of the above roles.					

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A.7.1.2 Support for the SPDUs associated with the Kernel functional unit

	SPDU	Sender		Receiver		Mnemonics		Comment
		Status	Support	Status	Support	Sender	Receiver	
1	Connect (CN)	c5		c6				
2	Overflow Accept (OA)	c7		c8		S-OA_SDR	S-OA_RCV	
3	Connect Data Overflow (CDO)	c9		c10		S-CDO_SDR	S-CDO_RCV	
4	Accept (AC)	c6		c5				
5	Refuse (RF)	c6		c5				
6	Finish (FN)	c11		c12				
7	Disconnect (DN)	c12		c11				
8	Abort (AB)	m		m				
9	Abort Accept (AA)	o		m				
10	Data Transfer (DT)	c13		c14				
11	Prepare (PR)	c15		c15		S-PR_SDR	S-PR_RCV	

c5: if [S-CON_initiator] then m else n/a.
c6: if [S-CON_responder] then m else n/a.
c7: if [S-V1 or NOT S-CON_responder] then n/a else if [S-MAXSIZE_10240] then m else o.
c8: if [NOT S-V1 and S-CON_initiator and S-MAXSIZE_10240] then m else n/a.
c9: if [S-V1 or NOT S-CON_initiator] then n/a else if [S-MAXSIZE_10240] then m else o.
c10: if [NOT S-V1 and S-CON_responder and S-MAXSIZE_10240] then m else n/a.
c11: if [S-REL_requestor] then m else n/a.
c12: if [S-REL_acceptor] then m else n/a.
c13: if [S-DATA_requestor] then m else n/a.
c14: if [S-DATA_acceptor] then m else n/a.
c15: if [NOT S-V1 and S-MAXSIZE_9 and S-EXP_T] then m else n/a.

A.7.1.3 Support for the SPDUs associated with Token Exchange

	SPDU	Sender		Receiver		Comment
		Status	Support	Status	Support	
1	Give Tokens (GT)	m		m		
2	Please Tokens (PT)	m		m		

NOTE – These two SPDUs are used for Token Exchange, but they are also used as category 0 SPDUs in basic concatenation. Therefore, their implementation is mandatory even if no token is supported. (Reference to ISO/IEC 8327-1, 7.16 and 7.17.)

A.7.2 Negotiated Release functional unit

A.7.2.1 Supported roles

The roles supported by the implementation for the Negotiated Release functional unit are the same as for the Orderly Release (see clause A.7.1.1.2).

A.7.2.2 Support for the SPDUs associated with the Negotiated Release functional unit

	SPDU	Sender		Receiver		Comment
		Status	Support	Status	Support	
1	Not Finished (NF)	c16		c17		
2	Give Tokens (GT)	----------(A.7.1.3)----------				
3	Please Tokens (PT)	----------(A.7.1.3)----------				

c16: if [S-FU(NR) and S-REL_acceptor] then m else n/a.
c17: if [S-FU(NR) and S-REL_requestor] then m else n/a.

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A.7.3 Half Duplex functional unit

A.7.3.1 Supported roles

Does the implementation support the Half Duplex functional unit as:

	Role	Status	Support	Comment
1	Requestor	c18		
2	Acceptor	c18		
c18: if [S-FU(HD)] then m else n/a.				

A.7.3.2 Support for the SPDUs associated with the Half Duplex functional unit

	SPDU	Sender		Receiver		Comment
		Status	Support	Status	Support	
1	Give Tokens (GT)	----------(A.7.1.3)----------				
2	Please Tokens (PT)	----------(A.7.1.3)----------				

A.7.4 Duplex functional unit

No additional SPDUs *(this clause is present for completness).*

A.7.5 Expedited Data functional unit

A.7.5.1 Supported roles

Does the implementation support the Expedited Data functional unit as:

	Role	Status	Support	Mnemonic	Comment
1	Requestor	o.6		S-XDATA_requestor	
2	Acceptor	o.6		S-XDATA_acceptor	
o.6: if [S-FU(EX)] then a conforming implementation shall support at least one of the above roles else n/a.					

A.7.5.2 Support for the SPDU associated with the Expedited Data functional unit

	SPDU	Sender		Receiver		Comment
		Status	Support	Status	Support	
1	Expedited Data (EX)	c19		c20		
c19: if [S-XDATA_requestor] then m else n/a. c20: if [S-XDATA_acceptor] then m else n/a.						

A.7.6 Typed Data functional unit

A.7.6.1 Supported roles

Does the implementation support the Typed Data functional unit as:

	Role	Status	Support	Mnemonic	Comment
1	Requestor	o.7		S-TDATA_requestor	
2	Acceptor	o.7		S-TDATA_acceptor	
o.7: if [S-FU(TD)] then a conforming implementation shall support at least one of the above roles else n/a.					

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A.7.6.2 Support for the SPDU associated with the Typed Data functional unit

	SPDU	Sender		Receiver		Comment
		Status	Support	Status	Support	
1	Typed Data (TD)	c21		c22		
c21: if [S-TDATA_requestor] then m else n/a. c22: if [S-TDATA_acceptor] then m else n/a.						

A.7.7 Capability Data functional unit

A.7.7.1 Supported roles

Does the implementation support the Capability Data functional unit as:

	Role	Status	Support	Mnemonic	Comment
1	Requestor	o.8		S-CAP_requestor	
2	Acceptor	o.8		S-CAP_acceptor	
o.8: if [S-FU(CD)] then a conforming implementation shall support at least one of the above roles else n/a.					

A.7.7.2 Support for the SPDUs associated with the Capability Data functional unit

	SPDU	Sender		Receiver		Comment
		Status	Support	Status	Support	
1	Capability Data (CD)	c23		c24		
2	Capability Data Ack (CDA)	c24		c23		
c23: if [S-CAP_requestor] then m else n/a. c24: if [S-CAP_acceptor] then m else n/a.						

A.7.8 Minor synchronize functional unit

A.7.8.1 Supported roles

Does the implementation support the Minor synchronize functional unit as:

	Role	Status	Support	Mnemonic	Comment
1	Requestor	o.9		S-MIN_requestor	
2	Acceptor	o.9		S-MIN_acceptor	
o.9: if [S-FU(SY)] then a conforming implementation shall support at least one of the above roles else n/a.					

A.7.8.2 Support for the SPDUs associated with the Minor synchronize functional unit

	SPDU	Sender		Receiver		Comment
		Status	Support	Status	Support	
1	Minor Sync Point (MIP)	c25		c26		
2	Minor Sync Ack (MIA)	c27		c25		
3	Give Tokens (GT)	----------(A.7.1.3)----------				
4	Please Tokens (PT)	----------(A.7.1.3)----------				
c25: if [S-MIN_requestor] then m else n/a. c26: if [S-MIN_acceptor] then m else n/a. c27: if [S-MIN_acceptor] then o else n/a.						

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A.7.9 Symmetric synchronize functional unit

A.7.9.1 Supported roles

Does the implementation support the Symmetric synchronize functional unit as:

	Role	Status	Support	Comment
1	Requestor	c28		
2	Acceptor	c28		
c28: if [S-FU(SS)] then m else n/a.				

A.7.9.2 Support for the SPDUs associated with the Symmetric synchronize functional unit

	SPDU	Sender		Receiver		Comment
		Status	Support	Status	Support	
1	Minor Sync Point (MIP)	c28		c28		
2	Minor Sync Ack (MIA)	c29		c28		
c28: if [S-FU(SS)] then m else n/a. c29: if [S-FU(SS)] then o else n/a.						

A.7.10 Data separation functional unit

No additional SPDUs *(this clause is present for completness).*

A.7.11 Major synchronize functional unit

A.7.11.1 Supported roles

Does the implementation support the Major synchronize functional unit as:

	Role	Status	Support	Mnemonic	Comment
1	Requestor	o.10		S-MAJ_requestor	
2	Acceptor	o.10		S-MAJ_acceptor	
o.10: if [S-FU(MA)] then a conforming implementation shall support at least one of the above roles else n/a.					

A.7.11.2 Support for the SPDUs associated with the Major synchronize functional unit

	SPDU	Sender		Receiver		Comment
		Status	Support	Status	Support	
1	Major Sync Point (MAP)	c30		c31		
2	Major Sync Ack (MAA)	c31		c30		
3	Give Tokens (GT)	----------(A.7.1.3)----------				
4	Please Tokens (PT)	----------(A.7.1.3)----------				
5	Prepare (PR)	c32		c33		
c30: if [S-MAJ_requestor] then m else n/a. c31: if [S-MAJ_acceptor] then m else n/a. c32: if [S-MAJ_acceptor and S-EXP_T] then m else n/a. c33: if [S-MAJ_requestor and S-EXP_T] then m else n/a.						

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A.7.12 Resynchronize functional unit

A.7.12.1 Supported roles

Does the implementation support the Resynchronize functional unit as:

	Role	Status	Support	Comment
1	Requestor	c34		
2	Acceptor	c34		
c34: if [S-FU(RESYN)] then m else n/a. NOTE – The Resynchronize functional unit provides an emergency service. Therefore, if the functional unit is supported, a conforming implementation shall support both roles (requestor and acceptor).				

A.7.12.2 Supported resynchronize types

Does the implementation support the following Resynchronize types:

	Type	Status	Support	Comment
1	Abandon	o.11		
2	Set	o.11		
3	Restart	o.11		
o.11: if [S-FU(RESYN)] then a conforming implementation shall support at least one of the above roles else n/a.				

A.7.12.3 Support for the SPDUs associated with the Resynchronize functional unit

	SPDU	Sender		Receiver		Comment
		Status	Support	Status	Support	
1	Resynchronize (RS)	c34		c34		
2	Resynchronize Ack (RA)	c34		c34		
3	Prepare (PR)	c35		c35		
c34: if [S-FU(RESYN)] then m else n/a. c35: if [S-FU(RESYN) and S-EXP_T] then m else n/a.						

A.7.13 Exceptions functional unit

A.7.13.1 Supported roles

Does the implementation support the Exceptions functional unit as:

	Role	Status	Support	Comment
1	Requestor	c36		
2	Acceptor	c36		
c36: if [S-FU(EXCEP)] then m else n/a. NOTE – The Exceptions functional unit provides an emergency service. Therefore, if the functional unit is supported, a conforming implementation shall support both roles (requestor and acceptor).				

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A.7.13.2 Support for the SPDUs associated with the Exceptions functional unit

	SPDU	Sender		Receiver		Mnemonic	Comment
		Status	Support	Status	Support	(Sender side only)	
1	Exception Report (ER)	c37		c36		S-ER_SDR	
2	Exception Data (ED)	c36		c36			
c36: if [S-FU(EXCEP)] then m else n/a. c37: if [S-FU(EXCEP)] then o else n/a.							

A.7.14 Activity management functional unit

A.7.14.1 Supported roles

A.7.14.1.1 Activity start

Does the implementation support the Activity start as:

	Role	Status	Support	Mnemonic	Comment
1	Requestor	o.12		S-ACTS_requestor	
2	Acceptor	o.12		S-ACTS_acceptor	
o.12: if [S-FU(ACT)] then a conforming implementation shall support at least one of the above roles else n/a.					

A.7.14.1.2 Activity resume

Does the implementation support the Activity resume as:

	Role	Status	Support	Mnemonic	Comment
1	Requestor	o.13		S-ACTR_requestor	
2	Acceptor	o.13		S-ACTR_acceptor	
o.13: if [S-FU(ACT)] then a conforming implementation shall support at least one of the above roles else n/a.					

A.7.14.1.3 Activity interrupt

Does the implementation support the Activity interrupt as:

	Role	Status	Support	Mnemonic	Comment
1	Requestor	o.14		S-ACTI_requestor	
2	Acceptor	o.14		S-ACTI_acceptor	
o.14: if [S-FU(ACT)] then a conforming implementation shall support at least one of the above roles else n/a.					

A.7.14.1.4 Activity discard

Does the implementation support the Activity discard unit as:

	Role	Status	Support	Mnemonic	Comment
1	Requestor	o.15		S-ACTD_requestor	
2	Acceptor	o.15		S-ACTD_acceptor	
o.15: if [S-FU(ACT)] then a conforming implementation shall support at least one of the above roles else n/a.					

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A.7.14.1.5 Activity end

Does the implementation support the Activity end as:

	Role	Status	Support	Mnemonic	Comment
1	Requestor	o.16		S-ACTE_requestor	
2	Acceptor	o.16		S-ACTE_acceptor	
o.16: if [S-FU(ACT)] then a conforming implementation shall support at least one of the above roles else n/a.					

A.7.14.1.6 Give Tokens Confirm

Does the implementation support the Give Tokens Confirm as:

	Role	Status	Support	Mnemonic	Comment
1	Requestor	c1		S-GTC_requestor	
2	Acceptor	c1		S-GTC_acceptor	
c1: if [S-FU(ACT)] then o else n/a.					

A.7.14.2 Support for the SPDUs associated with the Activity management functional unit

	SPDU	Sender		Receiver		Comment
		Status	Support	Status	Support	
1	Activity Start (AS)	c38		c39		
2	Activity Resume (AR)	c40		c41		
3	Activity Interrupt (AI)	c42		c43		
4	Activity Interrupt Ack (AIA)	c43		c42		
5	Activity Discard (AD)	c44		c45		
6	Activity Discard Ack (ADA)	c45		c44		
7	Activity End (AE)	c46		c47		
8	Activity End Ack (AEA)	c47		c46		
9	Prepare (PR)	c48		c48		
10	Give Tokens (GT)	----------(A.7.1.3)----------				
11	Please Tokens (PT)	----------(A.7.1.3)----------				
12	Give Tokens Confirm (GTC)	c49		c50		
13	Give Tokens Ack (GTA)	c50		c49		

c38: if [S-ACTS_requestor] then m else n/a.
c39: if [S-ACTS_acceptor] then m else n/a.
c40: if [S-ACTR_requestor] then m else n/a.
c41: if [S-ACTR_acceptor] then m else n/a.
c42: if [S-ACTI_requestor] then m else n/a.
c43: if [S-ACTI_acceptor] then m else n/a.
c44: if [S-ACTD_requestor] then m else n/a.
c45: if [S-ACTD_acceptor] then m else n/a.
c46: if [S-ACTE_requestor] then m else n/a.
c47: if [S-ACTE_acceptor] then m else n/a.
c48: if [S-FU(ACT) and S-EXP_T] then m else n/a.
c49: if [S-GTC_requestor] then m else n/a.
c50: if [S-GTC_acceptor] then m else n/a.

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A.8 Supported SPDU-parameters

A.8.1 Connect (CN) SPDU

(Ref. ITU-T Rec. X.225 | ISO/IEC 8327-1, subclause 8.3.1, Table 11)

A.8.1.1 Connection Identifier

	PGI "Connection Identifier"	Sender		Receiver		Length			Comment
		Status	Support	Status	Support	Status	Spt/Sdr	Spt/Rcv	
1	Calling SS-user Reference	c51		c6		0-64			
2	Common Reference	c51		c6		0-64			
3	Additional Reference Information	c51		c6		0-4			

c6: if [S-CON_responder] then m else n/a.
c51: if [S-CON_initiator] then o else n/a.

A.8.1.2 Connect/Accept Item

A.8.1.2.1 Connect/Accept Item parameters

NOTE – If presence of the PGI "Connect/accept Item" is supported (see A.8.1.2.2) then presence of Protocol Options and Version Number parameters shall be supported.

	PGI "Connect/Accept Item"	Sender		Receiver		Length			Comment
		Status	Support	Status	Support	Status	Spt/Sdr	Spt/Rcv	
1	Protocol Options	c52		c53		1			
2	TSDU maximum size	c54		c55		4			
3	Version Number	c56		c57		1			
4	Initial Serial Number	c58		c59		0-6			
5	Token Setting Item	c51		c60		1			
6	Second Initial Serial Number	c61		c62		0-6			

c51: if [S-CON_initiator] then o else n/a.
c52: if [NOT S-CON_initiator] then n/a else if [S-XCONC_RCV] then m else o.
c53: if [NOT S-CON_responder] then n/a else if [S-XCONC_RCV] then m else o.
c54: if [NOT S-CON_initiator] then n/a else if [S-SEG_SDR or S-SEG_RCV] then m else o.
c55: if [NOT S-CON_responder] then n/a else if [S-SEG_SDR or S-SEG_RCV] then m else o.
c56: if [NOT S-CON_initiator] then n/a else if [NOT S-V1] then m else o.
c57: if [NOT S-CON_responder] then n/a else if [NOT S-V1] then m else o.
c58: if [NOT S-CON_initiator] then n/a else if [{S-FU(SY) or S-FU(MA) or S-FU(SS) or S-FU(RESYN)} and NOT S-FU(ACT)] then m else o.
c59: if [NOT S-CON_responder] then n/a else if [{S-FU(SY) or s-FU(MA) or S-FU(SS) or S-FU(RESYN)} and NOT S-FU(ACT)] then m else o.
c60: if [S-CON_responder] then o else n/a.
c61: if [NOT S-CON_initiator] then n/a else if [S-FU(SS) and NOT S-FU(ACT)] then m else o.
c62: if [NOT S-CON_responder] then n/a else if [S-FU(SS) and NOT S-FU(ACT)] then m else o.

A.8.1.2.2 Presence of Connect/Accept Item

		Status	Support	Comment
1	Sender	c63		
2	Receiver	c6		

c6: if [S-CON_responder] then m else n/a.
c63: if [NOT S-CON_initiator] then n/a else if [A.8.1.2.1/1a or A.8.1.2.1/2a or A.8.1.2.1/3a or A.8.1.2.1/4a or A.8.1.2.1/5a or A.8.1.2.1/6a] then m else o.

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A.8.1.3 Single Items

	Single Items	Sender		Receiver		Length			Comment
		Status	Support	Status	Support	Status	Spt/Sdr	Spt/Rcv	
1	Session User Requirements	c64		c65		2			
2	Calling Session Selector	c51		c6		0-16			
3	Called Session Selector	c5		c6		0-16			
4	Data Overflow	c9		c7		1			
5	User Data	c5		c6		0-512			
6	Extended User Data	c66		c67		0-10240			
7	Upper Limit Serial Number	c51		c60					
8	Large Initial Serial Number	c68		c69					

c5: if [S-CON_initiator] then m else n/a.

c6: if [S-CON_responder] then m else n/a.

c7: if [S-V1 or NOT S-CON_responder] then n/a else if [S-MAXSIZE_10240] then m else o.

c9: if [S-V1 or NOT S-CON_initiator] then n/a else if [S-MAXSIZE_10240] then m else o.

c51: if [S-CON_initiator] then o else n/a.

c64: if [NOT S-CON_initiator] then n/a else if [S-FU(HD) and S-FU(SY) and S-FU(ACT) and S-FU(CD) and S-FU(EXCEP) and NOT S-FU(NR) and NOT S-FU(FD) and NOT S-FU(EX) and NOT S-FU(TD) and NOT S-FU(SS) and NOT S-FU(MA) and NOT S-FU(RESYN) and NOT S-FU(DS)] then o else m.

c65: if [NOT S-CON_responder] then n/a else if [S-FU(HD) and S-FU(SY) and S-FU(ACT) and S-FU(CD) and S-FU(EXCEP) and NOT S-FU(NR) and NOT S-FU(FD) and NOT S-FU(EX) and NOT S-FU(TD) and NOT S-FU(SS) and NOT S-FU(MA) and NOT S-FU(RESYN) and NOT S-FU(DS)] then o else m.

c66: if [NOT S-V1 and S-CON_initiator and S-MAXSIZE_512] then m else n/a.

c67: if [NOT S-V1 and S-CON_responder and S-MAXSIZE_512] then m else n/a.

c68: if [A.8.1.3/7a] then o else n/a.

c69: if [A.8.1.3/7b] then o else n/a.

A.8.2 Overflow Accept (OA) SPDU

(Ref. ITU-T Rec. X.225 | ISO/IEC 8327-1, subclause 8.3.2, Table 12)

	Single Items	Sender		Receiver		Length			Comment
		Status	Support	Status	Support	Status	Spt/Sdr	Spt/Rcv	
1	TSDU Maximum Size	c70		c71		4			
2	Version Number	c72		c73		1			

c70: if [NOT S-OA_SDR] then n/a else if [S-SEG_SDR or S-SEG_RCV] then m else o.

c71: if [NOT S-OA_RCV] then n/a else if [S-SEG_SDR or S-SEG_RCV] then m else o.

c72: if [S-OA_SDR] then m else n/a.

c73: if [S-OA_RCV] then m else n/a.

A.8.3 Connect Data Overflow (CDO) SPDU

(Ref. ITU-T Rec. X.225 | ISO/IEC 8327-1, subclause 8.3.3, Table 13)

	Single Items	Sender		Receiver		Length			Comment
		Status	Support	Status	Support	Status	Spt/Sdr	Spt/Rcv	
1	Enclosure Item	c74		c75		1			
2	User Data	c74		c75		0-65528			

c74: if [S-CDO_SDR] then m else n/a.

c75: if [S-CDO_RCV] then m else n/a.

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A.8.4 Accept (AC) SPDU

(Ref. ITU-T Rec. X.225 | ISO/IEC 8327-1, subclause 8.3.4, Table 14)

A.8.4.1 Connection Identifier

	PGI "Connection Identifier"	Sender		Receiver		Length			Comment
		Status	Support	Status	Support	Status	Spt/Sdr	Spt/Rcv	
1	Called SS-user Reference	c60		c5		0-64			
2	Common Reference	c60		c5		0-64			
3	Additional Reference Information	c60		c5		0-4			

c5: if [S-CON_initiator] then m else n/a.
c60: if [S-CON_responder] then o else n/a.

A.8.4.2 Connect/Accept Item

A.8.4.2.1 Connect/Accept Item parameters

NOTE – If presence of the PGI "Connect/accept Item" is supported (see A.8.4.2.2) then presence of Protocol Options and Version Number parameters shall be supported.

	PGI "Connect/Accept Item"	Sender		Receiver		Length			Comment
		Status	Support	Status	Support	Status	Spt/Sdr	Spt/Rcv	
1	Protocol Options	c53		c52		1			
2	TSDU maximum size	c55		c54		4			
3	Version Number	c57		c56		1			
4	Initial Serial Number	c59		c58		0-6			
5	Token Setting Item	c60		c51		1			
6	Second Initial Serial Number	c62		c61		0-6			

c51: if [S-CON_initiator] then o else n/a.
c52: if [NOT S-CON_initiator] then n/a else if [S-XCONC_RCV] then m else o.
c53: if [NOT S-CON_responder] then n/a else if [S-XCONC_RCV] then m else o.
c54: if [NOT S-CON_initiator] then n/a else if [S-SEG_SDR or S-SEG_RCV] then m else o.
c55: if [NOT S-CON_responder] then n/a else if [S-SEG_SDR or S-SEG_RCV] then m else o.
c56: if [NOT S-CON_initiator] then n/a else if [NOT S-V1] then m else o.
c57: if [NOT S-CON_responder] then n/a else if [NOT S-V1] then m else o.
c58: if [NOT S-CON_initiator] then n/a else if [{S-FU(SY) or s-FU(MA) or S-FU(SS) or S-FU(RESYN)} and NOT S-FU(ACT)] then m else o.
c59: if [NOT S-CON_responder] then n/a else if [{S-FU(SY) or s-FU(MA) or S-FU(SS) or S-FU(RESYN)} and NOT S-FU(ACT)] then m else o.
c60: if [S-CON_responder] then o else n/a.
c61: if [NOT S-CON_initiator] then n/a else if [S-FU(SS) and NOT S-FU(ACT)] then m else o.
c62: if [NOT S-CON_responder] then n/a else if [S-FU(SS) and NOT S-FU(ACT)] then m else o.

A.8.4.2.2 Presence of Connect/Accept Item

		Status	Support	Comment
1	Sender	c76		
2	Receiver	c5		

c5: if [S-CON_initiator] then m else n/a.
c76: if [NOT S-CON_responder] then n/a else if [A.8.4.2.1/1a or A.8.4.2.1/2a or A.8.4.2.1/3a or A.8.4.2.1/4a or A.8.4.2.1/5a or A.8.4.2.1/6a] then m else o.

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A.8.4.3 Single Items

	Single Items	Sender		Receiver		Length			Comment
		Status	Support	Status	Support	Status	Spt/Sdr	Spt/Rcv	
1	Token Item	c60		c5		1			
2	Session User Requirements	c65		c64		2			
3	Enclosure Item	c77		c78		1			
4	Calling Session Selector	c6		c51		0-16			
5	Responding Session Selector	c60		c5		0-16			
6	User Data	c6		c5		(Ref.)			
7	Upper Limit Serial Number	c60		c51					
8	Large Initial Serial Number	c79		c80					

c5: if [S-CON_initiator] then m else n/a.

c6: if [S-CON_responder] then m else n/a.

c51: if [S-CON_initiator] then o else n/a.

c60: if [S-CON_responder] then o else n/a.

c64: if [NOT S-CON_initiator] then n/a else if [S-FU(HD) and S-FU(SY) and S-FU(ACT) and S-FU(CD) and S-FU(EXCEP) and NOT S-FU(NR) and NOT S-FU(FD) and NOT S-FU(EX) and NOT S-FU(TD) and NOT S-FU(SS) and NOT S-FU(MA) and NOT S-FU(RESYN) and NOT S-FU(DS)] then o else m.

c65: if [NOT S-CON_responder] then n/a else if [S-FU(HD) and S-FU(SY) and S-FU(ACT) and S-FU(CD) and S-FU(EXCEP) and NOT S-FU(NR) and NOT S-FU(FD) and NOT S-FU(EX) and NOT S-FU(TD) and NOT S-FU(SS) and NOT S-FU(MA) and NOT S-FU(RESYN) and NOT S-FU(DS)] then o else m.

c77: if [S-CON_responder and NOT S-V1] then m else n/a.

c78: if [S-CON_initiator and NOT S-V1] then m else n/a.

c79: if [A.8.4.3/7a] then o else n/a.

c80: if [A.8.4.3/7b] then o else n/a.

A.8.5 Refuse (RF) SPDU

(Ref. ITU-T Rec. X.225 | ISO/IEC 8327-1, subclause 8.3.5, Table 15)

A.8.5.1 Connection Identifier

	PGI "Connection Identifier"	Sender		Receiver		Length			Comment
		Status	Support	Status	Support	Status	Spt/Sdr	Spt/Rcv	
1	Called SS-user Reference	c60		c5		0-64			
2	Common Reference	c60		c5		0-64			
3	Additional Reference Information	c60		c5		0-4			

c5: if [S-CON_initiator] then m else n/a.

c60: if [S-CON_responder] then o else n/a.

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A.8.5.2 Single Items

	Single Items	Sender		Receiver		Length			Comment
		Status	Support	Status	Support	Status	Spt/Sdr	Spt/Rcv	
1	Transport Disconnect	c81		c82		1			
2	Session User Requirements	c65		c64		2			
3	Version Number	c57		c56		1			
4	Enclosure Item	c77		c78		1			
5	Reason Code	c6		c5		(Ref.)			

c5: if [S-CON_initiator] then m else n/a.

c6: if [S-CON_responder] then m else n/a.

c56: if [NOT S-CON_initiator] then n/a else if [NOT S-V1] then m else o.

c57: if [NOT S-CON_responder] then n/a else if [NOT S-V1] then m else o.

c64: if [NOT S-CON_initiator] then n/a else if [S-FU(HD) and S-FU(SY) and S-FU(ACT) and S-FU(CD) and S-FU(EXCEP) and NOT S-FU(NR) and NOT S-FU(FD) and NOT S-FU(EX) and NOT S-FU(TD) and NOT S-FU(SS) and NOT S-FU(MA) and NOT S-FU(RESYN) and NOT S-FU(DS)] then o else m.

c65: if [NOT S-CON_responder] then n/a else if [S-FU(HD) and S-FU(SY) and S-FU(ACT) and S-FU(CD) and S-FU(EXCEP) and NOT S-FU(NR) and NOT S-FU(FD) and NOT S-FU(EX) and NOT S-FU(TD) and NOT S-FU(SS) and NOT S-FU(MA) and NOT S-FU(RESYN) and NOT S-FU(DS)] then o else m.

c77: if [S-CON_responder and NOT S-V1] then m else n/a.

c78: if [S-CON_initiator and NOT S-V1] then m else n/a.

c81: if [NOT S-CON_responder] then n/a else if [S-REUSE_T] then m else o.

c82: if [NOT S-CON_initiator] then n/a else if [S-REUSE_T] then m else o.

A.8.6 Finish (FN) SPDU

(Ref. ITU-T Rec. X.225 | ISO/IEC 8327-1, subclause 8.3.6, Table 16)

	Single Items	Sender		Receiver		Length			Comment
		Status	Support	Status	Support	Status	Spt/Sdr	Spt/Rcv	
1	Transport Disconnect	c83		c84		1			
2	Enclosure Item	c85		c86		1			
3	User Data	c87		c12		(Ref.)			

c12: if [S-REL_acceptor] then m else n/a.

c83: if [NOT S-REL_requestor] then n/a else if [S-REUSE_T] then m else o.

c84: if [NOT S-REL_acceptor] then n/a else if [S-REUSE_T] then m else o.

c85: if [S-REL_requestor and NOT S-V1] then m else n/a.

c86: if [S-REL_acceptor and NOT S-V1] then m else n/a.

c87: if [S-REL_requestor] then o else n/a.

A.8.7 Disconnect (DN) SPDU

(Ref. ITU-T Rec. X.225 | ISO/IEC 8327-1, subclause 8.3.7, Table 17)

	Single Items	Sender		Receiver		Length			Comment
		Status	Support	Status	Support	Status	Spt/Sdr	Spt/Rcv	
1	Enclosure Item	c86		c85		1			
2	User Data	c88		c11		(Ref.)			

c11: if [S-REL_requestor] then m else n/a.

c85: if [S-REL_requestor and NOT S-V1] then m else n/a.

c86: if [S-REL_acceptor and NOT S-V1] then m else n/a.

c88: if [S-REL_acceptor] then o else n/a.

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A.8.8 Not Finish (NF) SPDU

(Ref. ITU-T Rec. X.225 | ISO/IEC 8327-1, subclause 8.3.8, Table 18)

	Single Items	Sender		Receiver		Length			Comment
		Status	Support	Status	Support	Status	Spt/Sdr	Spt/Rcv	
1	Enclosure Item	c89		c90		1			
2	User Data	c91		c17		(Ref.)			
c17: if [S-FU(NR) and S-REL_requestor] then m else n/a. c89: if [S-FU(NR) and S-REL_acceptor and NOT S-V1] then m else n/a. c90: if [S-FU(NR) and S-REL_requestor and NOT S-V1] then m else n/a. c91: if [S-FU(NR) and S-REL_acceptor] then o else n/a.									

A.8.9 Abort (AB) SPDU

(Ref. ITU-T Rec. X.225 | ISO/IEC 8327-1, subclause 8.3.9, Table 19)

	Single Items	Sender		Receiver		Length			Comment
		Status	Support	Status	Support	Status	Spt/Sdr	Spt/Rcv	
1	Transport Disconnect	m		m		1			
2	Enclosure Item	c92		c92		1			
3	Reflect Parameter Values	o		o		0-9			
4	User Data	o		m		(Ref.)			
c92: if [NOT S-V1] then m else n/a.									

A.8.10 Abort Accept (AA) SPDU

(Ref. ITU-T Rec. X.225 | ISO/IEC 8327-1, subclause 8.3.10)

No parameter field.

A.8.11 Data Transfer (DT) SPDU

(Ref. ITU-T Rec. X.225 | ISO/IEC 8327-1, subclause 8.3.11, Table 20)

	Single Items	Sender		Receiver		Length			Comment
		Status	Support	Status	Support	Status	Spt/Sdr	Spt/Rcv	
1	Enclosure Item	c93		c94		1			
2	User Information Field	c13		c14		Unlimited			
c13: if [S-DATA_requestor] then m else n/a. c14: if [S-DATA_acceptor] then m else n/a. c93: if [S-DATA_requestor and S-SEG_SDR] then m else n/a. c94: if [S-DATA_acceptor and S-SEG_RCV] then m else n/a.									

A.8.12 Expedited Data (EX) SPDU

(Ref. ITU-T Rec. X.225 | ISO/IEC 8327-1, subclause 8.3.12, Table 21)

	Single Items	Sender		Receiver		Length			Comment
		Status	Support	Status	Support	Status	Spt/Sdr	Spt/Rcv	
1	User Information Field	c19		c20		0-14			
c19: if [S-XDATA_requestor] then m else n/a. c20: if [S-XDATA_acceptor] then m else n/a.									

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A.8.13 Typed Data (TD) SPDU

(Ref. ITU-T Rec. X.225 | ISO/IEC 8327-1, subclause 8.3.13, Table 22)

	Single Items	Sender		Receiver		Length			Comment
		Status	Support	Status	Support	Status	Spt/Sdr	Spt/Rcv	
1	Enclosure Item	c95		c96		1			
2	User Information Field	c21		c22		Unlimited			

c21: if [S-TDATA_requestor] then m else n/a.
c22: if [S-TDATA_acceptor] then m else n/a.
c95: if [S-TDATA_requestor and S-SEG_SDR] then m else n/a.
c96: if [S-TDATA_acceptor and S-SEG_RCV] then m else n/a.

A.8.14 Capability Data (CD) SPDU

(Ref. ITU-T Rec.X.225 | ISO/IEC 8327-1, subclause 8.3.14, Table 23)

	Single Items	Sender		Receiver		Length			Comment
		Status	Support	Status	Support	Status	Spt/Sdr	Spt/Rcv	
1	Enclosure Item	c97		c98		1			
2	User Data	c99		c24		(Ref.)			

c24: if [S-CAP_acceptor] then m else n/a.
c97: if [S-CAP_requestor and NOT S-V1] then m else n/a.
c98: if [S-CAP_acceptor and NOT S-V1] then m else n/a.
c99: if [S-CAP_requestor] then o else n/a.

A.8.15 Capability Data Ack (CDA) SPDU

(Ref. ITU-T Rec. X.225 | ISO/IEC 8327-1, subclause 8.3.15, Table 24)

	Single Items	Sender		Receiver		Length			Comment
		Status	Support	Status	Support	Status	Spt/Sdr	Spt/Rcv	
1	Enclosure Item	c98		c97		1			
2	User Data	c100		c23		(Ref.)			

c23: if [S-CAP_requestor] then m else n/a.
c97: if [S-CAP_requestor and NOT S-V1] then m else n/a.
c98: if [S-CAP_acceptor and NOT S-V1] then m else n/a.
c100: if [S-CAP_acceptor] then o else n/a.

A.8.16 Give Tokens (GT) SPDU

(Ref. ITU-T Rec. X.225 | ISO/IEC 8327-1, subclause 8.3.16, Table 25)

	Single Items	Sender		Receiver		Length			Comment
		Status	Support	Status	Support	Status	Spt/Sdr	Spt/Rcv	
1	Token Item	c101		c102		1			
2	Enclosure Item	c92		c92		1			
3	User Data	c103		c92		(Ref.)			

c92: if [NOT S-V1] then m else n/a.
c101: if [S-FU(NR) or S-FU(HD) or S-FU(SY) or S-FU(MA) or S-FU(ACT)] then o else n/a.
c102: if [S-FU(NR) or S-FU(HD) or S-FU(SY) or S-FU(MA) or S-FU(ACT)] then m else n/a.
c103: if [NOT S-V1 and A.8.16/1a] then o else n/a.

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A.8.17 Please Tokens (PT) SPDU

(Ref. ITU-T Rec. X.225 | ISO/IEC 8327-1, subclause 8.3.17, Table 26)

	Single Items	Sender		Receiver		Length			Comment
		Status	Support	Status	Support	Status	Spt/Sdr	Spt/Rcv	
1	Token Item	c101		c102		1			
2	Enclosure Item	c92		c92		1			
3	User Data	c104		c105		(Ref.)			

c92: if [NOT S-V1] then m else n/a.
c101: if [S-FU(NR) or S-FU(HD) or S-FU(SY) or S-FU(MA) or S-FU(ACT)] then o else n/a.
c102: if [S-FU(NR) or S-FU(HD) or S-FU(SY) or S-FU(MA) or S-FU(ACT)] then m else n/a.
c104: if [A.8.17/1a] then o else n/a.
c105: if [A.8.17/1b] then m else n/a.

A.8.18 Minor Sync Point (MIP) SPDU

(Ref. ITU-T Rec. X.225 | ISO/IEC 8327-1, subclause 8.3.20, Table 28)

	Single Items	Sender		Receiver		Length			Comment
		Status	Support	Status	Support	Status	Spt/Sdr	Spt/Rcv	
1	Sync Type Item	c106		c107		1			
2	Enclosure Item	c108		c109		1			
3	Serial Number	c110		c111		0-6			
4	User Data	c112		c111		(Ref.)			

c106: if [(S-MIN_requestor or S-FU(SS)) and S-FU(DS)] then m else if [(S-MIN_requestor or S-FU(SS)) and NOT S-FU(DS)] then o else n/a.
c107: if [S-MIN_acceptor or S-FU(SS)] then o else n/a.
c108: if [{S-MIN_requestor and NOT S-V1} or {S-FU(SS) and NOT S-V1}] then m else n/a.
c109: if [{S-MIN_acceptor and NOT S-V1} or {S-FU(SS) and NOT S-V1}] then m else n/a.
c110: if [S-MIN_requestor or S-FU(SS)] then m else n/a.
c111: if [S-MIN_acceptor or S-FU(SS)] then m else n/a.
c112: if [S-MIN_requestor or S-FU(SS)] then o else n/a.

A.8.19 Minor Sync Ack (MIA) SPDU

(Ref. ITU-T Rec. X.225 | ISO/IEC 8327-1, subclause 8.3.21, Table 29)

	Single Items	Sender		Receiver		Length			Comment
		Status	Support	Status	Support	Status	Spt/Sdr	Spt/Rcv	
1	Enclosure Item	c109		c108		1			
2	Serial Number	c111		c110		0-6			
3	User Data	c107		c110		(Ref.)			

c107: if [S-MIN_acceptor or S-FU(SS)] then o else n/a.
c108: if [{S-MIN_requestor and NOT S-V1} or {S-FU(SS) and NOT S-V1}] then m else n/a.
c109: if [{S-MIN_acceptor and NOT S-V1} or {S-FU(SS) and NOT S-V1}] then m else n/a.
c110: if [S-MIN_requestor or S-FU(SS)] then m else n/a.
c111: if [S-MIN_acceptor or S-FU(SS)] then m else n/a.

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A.8.20 Major Sync Point (MAP) SPDU

(Ref. ITU-T Rec. X.225 | ISO/IEC 8327-1, subclause 8.3.22, Table 30)

	Single Items	Sender		Receiver		Length			Comment
		Status	Support	Status	Support	Status	Spt/Sdr	Spt/Rcv	
1	Sync Type Item	c30		c31		1			
2	Enclosure Item	c113		c114		1			
3	Serial Number	c30		c31		0-6			
4	User Data	c115		c31		(Ref.)			

c30: if [S-MAJ_requestor] then m else n/a.
c31: if [S-MAJ_acceptor] then m else n/a.
c113: if [S-MAJ_requestor and NOT S-V1] then m else n/a.
c114: if [S-MAJ_acceptor and NOT S-V1] then m else n/a.
c115: if [S-MAJ_requestor] then o else n/a.

A.8.21 Major Sync Ack (MAA) SPDU

(Ref. ITU-T Rec. X.225 | ISO/IEC 8327-1, subclause 8.3.23, Table 31)

	Single Items	Sender		Receiver		Length			Comment
		Status	Support	Status	Support	Status	Spt/Sdr	Spt/Rcv	
1	Enclosure Item	c114		c113		1			
2	Serial Number	c116		c117		0-6			
3	Second Serial Number	c118		c119		0-6			
4	User Data	c120		c30		(Ref.)			

c30: if [S-MAJ_requestor] then m else n/a.
c113: if [S-MAJ_requestor and NOT S-V1] then m else n/a.
c114: if [S-MAJ_acceptor and NOT S-V1] then m else n/a.
c116: if [NOT S-MAJ_acceptor] then n/a else if [NOT S-FU(SS)] then m else o.
c117: if [NOT S-MAJ_requestor] then n/a else if [NOT S-FU(SS)] then m else o.
c118: if [NOT S-MAJ_acceptor] then n/a else if [S-FU(SS)] then m else o.
c119: if [NOT S-MAJ_requestor] then n/a else if [S-FU(SS)] then m else o.
c120: if [S-MAJ_acceptor] then o else n/a.

A.8.22 Resynchronize (RS) SPDU

(Ref. ITU-T Rec. X.225 | ISO/IEC 8327-1, subclause 8.3.24, Table 32)

	Single Items	Sender		Receiver		Length			Comment
		Status	Support	Status	Support	Status	Spt/Sdr	Spt/Rcv	
1	Enclosure Item	c121		c121		1			
2	Token Setting Item	c102		c102		1			
3	Resync Type	c122		c122		1			
4	Serial Number	c122		c122		0-6			
5	Second Resync Type	c123		c124		1			
6	Second Serial Number	c123		c124		0-6			
7	User Data	c125		c34		(Ref.)			

c34: if [S-FU(RESYN)] then m else n/a.
c102: if [S-FU(NR) or S-FU(HD) or S-FU(SY) or S-FU(MA) or S-FU(ACT)] then m else n/a.
c121: if [S-FU(RESYN) and NOT S-V1] then m else n/a.
c122: if [NOT S-FU(RESYN)] then n/a else if [S-FU(SY) or S-FU(MA)] then m else o.
c123: if [S-FU(RESYN) and S-FU(SS)] then o else n/a.
c124: if [S-FU(RESYN) and S-FU(SS)] then m else n/a.
c125: if [S-FU(RESYN)] then o else n/a.

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A.8.23 Resynchronize Ack (RA) SPDU

(Ref. ITU-T Rec. X.225 | ISO/IEC 8327-1, subclause 8.3.25, Table 33)

	Single Items	Sender		Receiver		Length			Comment
		Status	Support	Status	Support	Status	Spt/Sdr	Spt/Rcv	
1	Enclosure Item	c121		c121		1			
2	Token Setting Item	c102		c102		1			
3	Resync Type	c123		c124		1			
4	Serial Number	c126		c34		0-6			
5	Second Resync Type	c123		c124		1			
6	Second Serial Number	c123		c124		0-6			
7	User Data	c125		c34		(Ref.)			

c34: if [S-FU(RESYN)] then m else n/a.
c102: if [S-FU(NR) or S-FU(HD) or S-FU(SY) or S-FU(MA) or S-FU(ACT)] then m else n/a.
c121: if [S-FU(RESYN) and NOT S-V1] then m else n/a.
c123: if [S-FU(RESYN) and S-FU(SS)] then o else n/a.
c124: if [S-FU(RESYN) and S-FU(SS)] then m else n/a.
c125: if [S-FU(RESYN)] then o else n/a.
c126: if [NOT S-FU(RESYN)] then n/a else if [NOT S-FU(SS)] then m else o.

A.8.24 Prepare (PR) SPDU

(Ref. ITU-T Rec. X.225 | ISO/IEC 8327-1, subclause 8.3.26, Table 34)

	Single Items	Sender		Receiver		Length			Comment
		Status	Support	Status	Support	Status	Spt/Sdr	Spt/Rcv	
1	Prepare Type	c127		c128		1			
2	Resync Type	c129		c129		1			
3	Second Resync Type	c129		c129		1			

c127: if [{S-MAJ_acceptor and S-EXP_T} or {S-FU(RESYN) and S-EXP_T} or {S-FU(ACT) and S-EXP_T} or {S-PR_SDR}] then m else n/a.
c128: if [{S-MAJ_requestor and S-EXP_T} or {S-FU(RESYN) and S-EXP_T} or {S-FU(ACT) and S-EXP_T} or {S-PR_RCV}] then m else n/a.
c129: if [S-FU(SS) and S-EXP_T] then m else n/a.

A.8.25 Exception Report (ER) SPDU

(Ref. ITU-T X.225 | ISO/IEC 8327-1, subclause 8.3.27, Table 35)

	Single Items	Sender		Receiver		Length			Comment
		Status	Support	Status	Support	Status	Spt/Sdr	Spt/Rcv	
1	Reflect Parameter Values	c130		c36		0-65531			

c36: if [S-FU(EXCEP)] then m else n/a.
c130: if [S-ER_SDR] then m else n/a.

A.8.26 Exception Data (ED) SPDU

(Ref. ITU-T Rec. X.225 | ISO/IEC 8327-1, subclause 8.3.28, Table 36)

	Single Items	Sender		Receiver		Length			Comment
		Status	Support	Status	Support	Status	Spt/Sdr	Spt/Rcv	
1	Enclosure Item	c131		c131		1			
2	Reason Code	c36		c36		1			
3	User Data	c132		c36		(Ref.)			

c36: if [S-FU(EXCEP)] then m else n/a.
c131: if [S-FU(EXCEP) and NOT S-V1] then m else n/a.
c132: if [S-FU(EXCEP)] then o else n/a.

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A.8.27 Give Tokens Confirm (GTC) SPDU

(Ref. ITU-T Rec. X.225 | ISO/IEC 8327-1, subclause 8.3.18, Table 27)

	Single Items	Sender		Receiver		Length			Comment
		Status	Support	Status	Support	Status	Spt/Sdr	Spt/Rcv	
1	Enclosure Item	c133		c134		1			
2	User Data	c135		c134		(Ref.)			

c133: if [S-GTC_requestor and NOT S-V1] then m else n/a.
c134: if [S-GTC_acceptor and NOT S-V1] then m else n/a.
c135: if [S-GTC_requestor and NOT S-V1] then o else n/a.

A.8.28 Give Tokens Ack (GTA) SPDU

No parameter field.

A.8.29 Activity Start (AS) SPDU

(Ref. ITU-T Rec. X.225 | ISO/IEC 8327-1, subclause 8.3.29, Table 37)

	Single Items	Sender		Receiver		Length			Comment
		Status	Support	Status	Support	Status	Spt/Sdr	Spt/Rcv	
1	Enclosure Item	c136		c136		1			
2	Activity Identifier	c38		c39		0-6			
3	User Data	c137		c39		(Ref.)			

c38: if [S-ACTS_requestor] then m else n/a.
c39: if [S-ACTS_acceptor] then m else n/a.
c136: if [S-ACTS_acceptor and NOT S-V1] then m else n/a.
c137: if [S-ACTS_requestor] then o else n/a.

A.8.30 Activity Resume (AR) SPDU

(Ref. ITU-T Rec. X.225 | ISO/IEC 8327-1, subclause 8.3.30, Table 38)

A.8.30.1 Linking Information

	PGI "Linking Information"	Sender		Receiver		Length			Comment
		Status	Support	Status	Support	Status	Spt/Sdr	Spt/Rcv	
1	Called SS-user Reference	c138		c41		0-64			
2	Calling SS-user Reference	c138		c41		0-64			
3	Common Reference	c138		c41		0-64			
4	Additional Reference Information	c138		c41		0-4			
5	Old Activity Identifier	c40		c41		0-6			
6	Serial Number	c40		c41		0-6			
7	Second Serial Number	c139		c140		0-6			

c40: if [S-ACTR_requestor] then m else n/a.
c41: if [S-ACTR_acceptor] then m else n/a.
c138: if [S-ACTR_requestor] then o else n/a.
c139: if [S-ACTR_requestor and S-FU(SS)] then m else n/a.
c140: if [S-ACTR_acceptor and S-FU(SS)] then m else n/a.

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A.8.30.2 Single Items

	Single Items	Sender		Receiver		Length			Comment
		Status	Support	Status	Support	Status	Spt/Sdr	Spt/Rcv	
1	Enclosure Item	c141		c142		1			
2	New Activity Identifier	c40		c41		0-6			
3	User Data	c138		c41		(Ref.)			

c40: if [S-ACTR_requestor] then m else n/a.
c41: if [S-ACTR_acceptor] then m else n/a.
c138: if [S-ACTR_requestor] then o else n/a.
c141: if [S-ACTR_requestor and NOT S-V1] then m else n/a.
c142: if [S-ACTR_acceptor and NOT S-V1] then m else n/a.

A.8.31 Activity Interrupt (AI) SPDU

(Ref. ITU-T Rec. X.225 | ISO/IEC 8327-1, subclause 8.3.31, Table 39)

	Single Items	Sender		Receiver		Length			Comment
		Status	Support	Status	Support	Status	Spt/Sdr	Spt/Rcv	
1	Enclosure Item	c143		c144		1			
2	Reason Code	c42		c43		1			
3	User Data	c145		c144		(Ref.)			

c42: if [S-ACTI_requestor] then m else n/a.
c43: if [S-ACTI_acceptor] then m else n/a.
c143: if [S-ACTI_requestor and NOT S-V1] then m else n/a.
c144: if [S-ACTI_acceptor and NOT S-V1] then m else n/a.
c145: if [S-ACTI_requestor and NOT S-V1] then o else n/a.

A.8.32 Activity Interrupt Ack (AIA) SPDU

(Ref. ITU-T Rec. X.225 | ISO/IEC 8327-1, subclause 8.3.32, Table 40)

	Single Items	Sender		Receiver		Length			Comment
		Status	Support	Status	Support	Status	Spt/Sdr	Spt/Rcv	
1	Enclosure Item	c144		c143		1			
2	User Data	c146		c143		(Ref.)			

c143: if [S-ACTI_requestor and NOT S-V1] then m else n/a.
c144: if [S-ACTI_acceptor and NOT S-V1] then m else n/a.
c146: if [S-ACTI_acceptor and NOT S-V1] then o else n/a.

A.8.33 Activity Discard (AD) SPDU

(Ref. ITU-T Rec. X.225 | ISO/IEC 8327-1, subclause 8.3.33, Table 41)

	Single Items	Sender		Receiver		Length			Comment
		Status	Support	Status	Support	Status	Spt/Sdr	Spt/Rcv	
1	Enclosure Item	c147		c148		1			
2	Reason Code	c44		c45		1			
3	User Data	c149		c148		(Ref.)			

c44: if [S-ACTD_requestor] then m else n/a.
c45: if [S-ACTD_acceptor] then m else n/a.
c147: if [S-ACTD_requestor and NOT S-V1] then m else n/a.
c148: if [S-ACTD_acceptor and NOT S-V1] then m else n/a.
c149: if [S-ACTD_requestor and NOT S-V1] then o else n/a.

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A.8.34 Activity Discard Ack (ADA) SPDU

(Ref. ITU-T Rec. X.225 | ISO/IEC 8327-1, subclause 8.3.34, Table 42)

	Single Items	Sender		Receiver		Length			Comment
		Status	Support	Status	Support	Status	Spt/Sdr	Spt/Rcv	
1	Enclosure Item	c148		c147		1			
2	User Data	c150		c147		(Ref.)			

c147: if [S-ACTD_requestor and NOT S-V1] then m else n/a.
c148: if [S-ACTD_acceptor and NOT S-V1] then m else n/a.
c150: if [S-ACTD_acceptor and NOT S-V1] then o else n/a.

A.8.35 Activity End (AE) SPDU

(Ref. ITU-T Rec. X.225 | ISO/IEC 8327-1, subclause 8.3.35, Table 43)

	Single Items	Sender		Receiver		Length			Comment
		Status	Support	Status	Support	Status	Spt/Sdr	Spt/Rcv	
1	Enclosure Item	c151		c152		1			
2	Serial Number	c46		c47		0-6			
3	User Data	c153		c47		(Ref.)			

c46: if [S-ACTE_requestor] then m else n/a.
c47: if [S-ACTE_acceptor] then m else n/a.
c151: if [S-ACTE_requestor and NOT S-V1] then m else n/a.
c152: if [S-ACTE_acceptor and NOT S-V1] then m else n/a.
c153: if [S-ACTE_requestor] then o else n/a.

A.8.36 Activity End Ack (AEA) SPDU

(Ref. ITU-T Rec. X.225 | ISO/IEC 8327-1, subclause 8.3.36, Table 31)

	Single Items	Sender		Receiver		Length			Comment
		Status	Support	Status	Support	Status	Spt/Sdr	Spt/Rcv	
1	Enclosure Item	c152		c151		1			
2	Serial Number	c154		c155		0-6			
3	Second Serial Number	c156		c157		0-6			
4	User Data	c158		c46		(Ref.)			

c46: if [S-ACTE_requestor] then m else n/a.
c151: if [S-ACTE_requestor and NOT S-V1] then m else n/a.
c152: if [S-ACTE_acceptor and NOT S-V1] then m else n/a.
c154: if [NOT S-ACTE_acceptor] then n/a else if [NOT S-FU(SS)] then m else o.
c155: if [NOT S-ACTE_requestor] then n/a else if [NOT S-FU(SS)] then m else o.
c156: if [NOT S-ACTE_acceptor] then n/a else if [S-FU(SS)] then m else o.
c157: if [NOT S-ACTE_requestor] then n/a else if [S-FU(SS)] then m else o.
c158: if [S-ACTE_acceptor] then o else n/a.

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Annex B

List of conditional statements

(This annex does not form an integral part of this Recommendation I International Standard)

c1: if [S-FU(ACT)] then o else n/a.
c2: if [S-FU(SY) or S-FU(SS)] then o else n/a.
c3: if [S-FU(HD)] then o else n/a.
c4: if [S-FU(EX)] then m else o.
c5: if [S-CON_initiator] then m else n/a.
c6: if [S-CON_responder] then m else n/a.
c7: if [S-V1 or NOT S-CON_responder] then n/a else if [S-MAXSIZE_10240] then m else o.
c8: if [NOT S-V1 and S-CON_initiator and S-MAXSIZE_10240] then m else n/a.
c9: if [S-V1 or NOT S-CON_initiator] then n/a else if [S-MAXSIZE_10240] then m else o.
c10: if [NOT S-V1 and S-CON_responder and S-MAXSIZE_10240] then m else n/a.
c11: if [S-REL_requestor] then m else n/a.
c12: if [S-REL_acceptor] then m else n/a.
c13: if [S-DATA_requestor] then m else n/a.
c14: if [S-DATA_acceptor] then m else n/a.
c15: if [NOT S-V1 andS-MAXSIZE_9 and S-EXP_T] then m else n/a.
c16: if [S-FU(NR) and S-REL_acceptor] then m else n/a.
c17: if [S-FU(NR) and S-REL_requestor] then m else n/a.
c18: if [S-FU(HD)] then m else n/a.
c19: if [S-XDATA_requestor] then m else n/a.
c20: if [S-XDATA_acceptor] then m else n/a.
c21: if [S-TDATA_requestor] then m else n/a.
c22: if [S-TDATA_acceptor] then m else n/a.
c23: if [S-CAP_requestor] then m else n/a.
c24: if [S-CAP_acceptor] then m else n/a.
c25: if [S-MIN_requestor] then m else n/a.
c26: if [S-MIN_acceptor] then m else n/a.
c27: if [S-MIN_acceptor] then o else n/a.
c28: if [S-FU(SS)] then m else n/a.
c29: if [S-FU(SS)] then o else n/a.
c30: if [S-MAJ_requestor] then m else n/a.
c31: if [S-MAJ_acceptor] then m else n/a.
c32: if [S-MAJ_acceptor and S-EXP_T] then m else n/a.
c33: if [S-MAJ_requestor and S-EXP_T] then m else n/a.
c34: if [S-FU(RESYN)] then m else n/a.
c35: if [S-FU(RESYN) and S-EXP_T] then m else n/a.
c36: if [S-FU(EXCEP)] then m else n/a.
c37: if [S-FU(EXCEP)] then o else n/a.
c38: if [S-ACTS_requestor] then m else n/a.
c39: if [S-ACTS_acceptor] then m else n/a.
c40: if [S-ACTR_requestor] then m else n/a.
c41: if [S-ACTR_acceptor] then m else n/a.
c42: if [S-ACTI_requestor] then m else n/a.
c43: if [S-ACTI_acceptor] then m else n/a.
c44: if [S-ACTD_requestor] then m else n/a.
c45: if [S-ACTD_acceptor] then m else n/a.
c46: if [S-ACTE_requestor] then m else n/a.
c47: if [S-ACTE_acceptor] then m else n/a.

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c48: if [S-FU(ACT) and S-EXP_T] then m else n/a.

c49: if [S-GTC_requestor] then m else n/a.

c50: if [S-GTC_acceptor] then m else n/a.

c51: if [S-CON_initiator] then o else n/a.

c52: if [NOT S-CON_initiator] then n/a else if [S-XCONC_RCV] then m else o.

c53: if [NOT S-CON_responder] then n/a else if [S-XCONC_RCV] then m else o.

c54: if [NOT S-CON_initiator] then n/a else if [S-SEG_SDR or S-SEG_RCV] then m else o.

c55: if [NOT S-CON_responder] then n/a else if [S-SEG_SDR or S-SEG_RCV] then m else o.

c56: if [NOT S-CON_initiator] then n/a else if [NOT S-V1] then m else o.

c57: if [NOT S-CON_responder] then n/a else if [NOT S-V1] then m else o.

c58: if [NOT S-CON_initiator] then n/a else if [{S-FU(SY) or s-FU(MA) or S-FU(SS) or S-FU(RESYN)} and NOT S-FU(ACT)] then m else o.

c59: if [NOT S-CON_responder] then n/a else if [{S-FU(SY) or s-FU(MA) or S-FU(SS) or S-FU(RESYN)} and NOT S-FU(ACT)] then m else o.

c60: if [S-CON_responder] then o else n/a.

c61: if [NOT S-CON_initiator] then n/a else if [S-FU(SS) and NOT S-FU(ACT)] then m else o.

c62: if [NOT S-CON_responder] then n/a else if [S-FU(SS) and NOT S-FU(ACT)] then m else o.

c63: if [NOT S-CON_initiator] then n/a else if [A.8.1.2.1/1a or A.8.1.2.1/2a or A.8.1.2.1/3a or A.8.1.2.1/4a or A.8.1.2.1/5a or A.8.1.2.1/6a] then m else o.

c64: if [NOT S-CON_initiator] then n/a else if [S-FU(HD) and S-FU(SY) and S-FU(ACT) and S-FU(CD) and S-FU(EXCEP) and NOT S-FU(NR) and NOT S-FU(FD) and NOT S-FU(EX) and NOT S-FU(TD) and NOT S-FU(SS) and NOT S-FU(MA) and NOT S-FU(RESYN) and NOT S-FU(DS)] then o else m.

c65: if [NOT S-CON_responder] then n/a else if [S-FU(HD) and S-FU(SY) and S-FU(ACT) and S-FU(CD) and S-FU(EXCEP) and NOT S-FU(NR) and NOT S-FU(FD) and NOT S-FU(EX) and NOT S-FU(TD) and NOT S-FU(SS) and NOT S-FU(MA) and NOT S-FU(RESYN) and NOT S-FU(DS)] then o else m.

c66: if [NOT S-V1 and S-CON_initiator and S-MAXSIZE_512] then m else n/a.

c67: if [NOT S-V1 and S-CON_responder and S-MAXSIZE_512] then m else n/a.

c68: if [A.8.1.3/7a] then o else n/a.

c69: if [A.8.1.3/7b] then o else n/a.

c70: if [NOT S-OA_SDR] then n/a else if [S-SEG_SDR or S-SEG_RCV] then m else o.

c71: if [NOT S-OA_RCV] then n/a else if [S-SEG_SDR or S-SEG_RCV] then m else o.

c72: if [S-OA_SDR] then m else n/a.

c73: if [S-OA_RCV] then m else n/a.

c74: if [S-CDO_SDR] then m else n/a.

c75: if [S-CDO_RCV] then m else n/a.

c76: if [NOT S-CON_responder] then n/a else if [A.8.4.2.1/1a or A.8.4.2.1/2a or A.8.4.2.1/3a or A.8.4.2.1/4a or A.8.4.2.1/5a or A.8.4.2.1/6a] then m else o.

c77: if [S-CON_responder and NOT S-V1] then m else n/a.

c78: if [S-CON_initiator and NOT S-V1] then m else n/a.

c79: if [A.8.4.3/7a] then o else n/a.

c80: if [A.8.4.3/7b] then o else n/a.

c81: if [NOT S-CON_responder] then n/a else if [S-REUSE_T] then m else o.

c82: if [NOT S-CON_initiator] then n/a else if [S-REUSE_T] then m else o.

c83: if [NOT S-REL_requestor] then n/a else if [S-REUSE_T] then m else o.

c84: if [NOT S-REL_acceptor] then n/a else if [S-REUSE_T] then m else o.

c85: if [S-REL_requestor and NOT S-V1] then m else n/a.

c86: if [S-REL_acceptor and NOT S-V1] then m else n/a.

c87: if [S-REL_requestor] then o else n/a.

c88: if [S-REL_acceptor] then o else n/a.

c89: if [S-FU(NR) and S-REL_acceptor and NOT S-V1] then m else n/a.

c90: if [S-FU(NR) and S-REL_requestor and NOT S-V1] then m else n/a.

c91: if [S-FU(NR) and S-REL_acceptor] then o else n/a.

c92: if [NOT S-V1] then m else n/a.

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c93: if [S-DATA_requestor and S-SEG_SDR] then m else n/a.

c94: if [S-DATA_acceptor and S-SEG_RCV] then m else n/a.

c95: if [S-TDATA_requestor and S-SEG_SDR] then m else n/a.

c96: if [S-TDATA_acceptor and S-SEG_RCV] then m else n/a.

c97: if [S-CAP_requestor and NOT S-V1] then m else n/a.

c98: if [S-CAP_acceptor and NOT S-V1] then m else n/a.

c99: if [S-CAP_requestor] then o else n/a.

c100: if [S-CAP_acceptor] then o else n/a.

c101: if [S-FU(NR) or S-FU(HD) or S-FU(SY) or S-FU(MA) or S-FU(ACT)] then o else n/a.

c102: if [S-FU(NR) or S-FU(HD) or S-FU(SY) or S-FU(MA) or S-FU(ACT)] then m else n/a.

c103: if [NOT S-V1 and A.8.16/1a] then o else n/a.

c104: if [A.8.17/1a] then o else n/a.

c105: if [A.8.17/1b] then m else n/a.

c106: if [(S-MIN_requestor or S-FU(SS)) and S-FU(DS)] then m else if [(S-MIN_requestor or S-FU(SS)) and NOT S-FU(DS)] then o else n/a.

c107: if [S-MIN_acceptor or S-FU(SS)] then o else n/a.

c108: if [{S-MIN_requestor and NOT S-V1} or { S-FU(SS) and NOT S-V1}] then m else n/a.

c109: if [{S-MIN_acceptor and NOT S-V1} or { S-FU(SS) and NOT S-V1}] then m else n/a.

c110: if [S-MIN_requestor or S-FU(SS)] then m else n/a.

c111: if [S-MIN_acceptor or S-FU(SS)] then m else n/a.

c112: if [S-MIN_requestor or S-FU(SS)] then o else n/a.

c113: if [S-MAJ_requestor and NOT S-V1] then m else n/a.

c114: if [S-MAJ_acceptor and NOT S-V1] then m else n/a.

c115: if [S-MAJ_requestor] then o else n/a.

c116: if [NOT S-MAJ_acceptor] then n/a else if [NOT S-FU(SS)] then m else o.

c117: if [NOT S-MAJ_requestor] then n/a else if [NOT S-FU(SS)] then m else o.

c118: if [NOT S-MAJ_acceptor] then n/a else if [S-FU(SS)] then m else o.

c119: if [NOT S-MAJ_requestor] then n/a else if [S-FU(SS)] then m else o.

c120: if [S-MAJ_acceptor] then o else n/a.

c121: if [S-FU(RESYN) and NOT S-V1] then m else n/a.

c122: if [NOT S-FU(RESYN)] then n/a else if [S-FU(SY) or S-FU(MA)] then m else o.

c123: if [S-FU(RESYN) and S-FU(SS)] then o else n/a.

c124: if [S-FU(RESYN) and S-FU(SS)] then m else n/a.

c125: if [S-FU(RESYN)] then o else n/a.

c126: if [NOT S-FU(RESYN)] then n/a else if [NOT S-FU(SS)] then m else o.

c127: if [{S-MAJ_acceptor and S-EXP_T} or {S-FU(RESYN) and S-EXP_T} or {S-FU(ACT) and S-EXP_T} or {S-PR_SDR}] then m else n/a.

c128: if [{S-MAJ_requestor and S-EXP_T} or {S-FU(RESYN) and S-EXP_T} or {S-FU(ACT) and S-EXP_T} or {S-PR_RCV}] then m else n/a.

c129: if [S-FU(SS) and S-EXP_T] then m else n/a.

c130: if [S-ER_SDR] then m else n/a.

c131: if [S-FU(EXCEP) and NOT S-V1] then m else n/a.

c132: if [S-FU(EXCEP)] then o else n/a.

c133: if [S-GTC_requestor and NOT S-V1] then m else n/a.

c134: if [S-GTC_acceptor and NOT S-V1] then m else n/a.

c135: if [S-GTC_requestor and NOT S-V1] then o else n/a.

c136: if [S-ACTS_acceptor and NOT S-V1] then m else n/a.

c137: if [S-ACTS_requestor] then o else n/a.

c138: if [S-ACTR_requestor] then o else n/a.

c139: if [S-ACTR_requestor and S-FU(SS)] then m else n/a.

c140: if [S-ACTR_acceptor and S-FU(SS)] then m else n/a.

c141: if [S-ACTR_requestor and NOT S-V1] then m else n/a.

c142: if [S-ACTR_acceptor and NOT S-V1] then m else n/a.

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c143: if [S-ACTI_requestor and NOT S-V1] then m else n/a.

c144: if [S-ACTI_acceptor and NOT S-V1] then m else n/a.

c145: if [S-ACTI_requestor and NOT S-V1] then o else n/a.

c146: if [S-ACTI_acceptor and NOT S-V1] then o else n/a.

c147: if [S-ACTD_requestor and NOT S-V1] then m else n/a.

c148: if [S-ACTD_acceptor and NOT S-V1] then m else n/a.

c149: if [S-ACTD_requestor and NOT S-V1] then o else n/a.

c150: if [S-ACTD_acceptor and NOT S-V1] then o else n/a.

c151: if [S-ACTE_requestor and NOT S-V1] then m else n/a.

c152: if [S-ACTE_acceptor and NOT S-V1] then m else n/a.

c153: if [S-ACTE_requestor] then o else n/a.

c154: if [NOT S-ACTE_acceptor] then n/a else if [NOT S-FU(SS)] then m else o.

c155: if [NOT S-ACTE_requestor] then n/a else if [NOT S-FU(SS)] then m else o.

c156: if [NOT S-ACTE_acceptor] then n/a else if [S-FU(SS)] then m else o.

c157: if [NOT S-ACTE_requestor] then n/a else if [S-FU(SS)] then m else o.

c158: if [S-ACTE_acceptor] then o else n/a.

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Annex C

List of mnemonics used in the conditional and optional statements

(This annex does not form an integral part of this Recommendation | International Standard)

Mnemonic	Clause where it is defined	Clauses where it is used
S-ACTD_acceptor	A.7.14.1.4	A.7.14.2, A.8.33, A.8.34
S-ACTD_requestor	A.7.14.1.4	A.7.14.2, A.8.33, A.8.34
S-ACTE_acceptor	A.7.14.1.5	A.7.14.2, A.8.35, A.8.36
S-ACTE_requestor	A.7.14.1.5	A.7.14.2, A.8.35, A.8.36
S-ACTI_acceptor	A.7.14.1.3	A.7.14.2, A.8.31, A.8.32
S-ACTI_requestor	A.7.14.1.3	A.7.14.2, A.8.31, A.8.32
S-ACTR_acceptor	A.7.14.1.2	A.7.14.2, A.8.30.1, A.8.30.2
S-ACTR_requestor	A.7.14.1.2	A.7.14.2, A.8.30.1, A.8.30.2
S-ACTS_acceptor	A.7.14.1.1	A.7.14.2, A.8.29
S-ACTS_requestor	A.7.14.1.1	A.7.14.2, A.8.29
S-CAP_acceptor	A.7.7.1	A.7.7.2, A.8.14, A.8.15
S-CAP_requestor	A.7.7.1	A.7.7.2, A.8.14, A.8.15
S-CDO_RCV	A.7.1.2	A.8.3
S-CDO_SDR	A.7.1.2	A.8.3
S-CON_initiator	A.7.1.1.1	A.7.1.2, A.8.1.1, A.8.1.2.1, A.8.1.2.2, A.8.1.3, A.8.4.1, A.8.4.2.1, A.8.4.2.2, A.8.4.3, A.8.5.1, A.8.5.2
S-CON_responder	A.7.1.1.1	A.7.1.2, A.8.1.1, A.8.1.2.1, A.8.1.2.2, A.8.1.3, A.8.4.1, A.8.4.2.1, A.8.4.2.2, A.8.4.3, A.8.5.1, A.8.5.2
S-DATA_acceptor	A.7.1.1.3	A.7.1.2, A.8.11
S-DATA_requestor	A.7.1.1.3	A.7.1.2, A.8.11
S-ER_SDR	A.7.13.2	A.8.25
S-EXP_T	A.6.2	A.7.1.2, A.7.11.2, A.7.12.3, A.7.14.2, A.8.24
S-FU(ACT)	A.6.1	A.6.1, A.7.14.1.1, A.7.14.1.2, A.7.14.1.3, A.7.14.1.4, A.7.14.1.5, A.7.14.1.6, A.7.14.2, A.8.1.2.1, A.8.1.3, A.8.4.2.1, A.8.4.3, A.8.5.2, A.8.16, A.8.17, A.8.22, A.8.23, A.8.24
S-FU(CD)	A.6.1	A.7.7.1, A.8.1.3, A.8.4.3, A.8.5.2
S-FU(DS)	A.6.1	A.8.1.3, A.8.4.3, A.8.5.2, A.8.18
S-FU(EX)	A.6.1	A.6.2, A.7.5.1, A.8.1.3, A.8.4.3, A.8.5.2
S-FU(EXCEP)	A.6.1	A.7.13.1, A.7.13.2, A.8.1.3, A.8.4.3, A.8.5.2, A.8.25, A.8.26
S-FU(FD)	A.6.1	A.8.1.3, A.8.4.3, A.8.5.2
S-FU(HD)	A.6.1	A.6.1, A.7.3.1, A.8.1.3, A.8.4.3, A.8.5.2, A.8.16, A.8.17, A.8.22, A.8.23
S-FU(MA)	A.6.1	A.7.11.1, A.8.1.2.1, A.8.1.3, A.8.4.2.1, A.8.4.3, A.8.5.2, A.8.16, A.8.17, A.8.22, A.8.23
S-FU(NR)	A.6.1	A.7.2.2, A.8.1.3, A.8.4.3, A.8.5.2, A.8.8, A.8.16, A.8.17, A.8.22, A.8.23
S-FU(RESYN)	A.6.1	A.7.12.1, A.7.12.2, A.7.12.3, A.8.1.2.1, A.8.1.3, A.8.4.2.1, A.8.4.3, A.8.5.2, A.8.22, A.8.23, A.8.24
S-FU(SS)	A.6.1	A.6.1, A.7.9.1, A.7.9.2, A.8.1.2.1, A.8.1.3, A.8.4.2.1, A.8.4.3, A.8.5.2, A.8.18, A.8.19, A.8.21, A.8.22, A.8.23, A.8.24, A.8.30.1, A.8.36
S-FU(SY)	A.6.1	A.6.1, A.7.8.1, A.8.1.2.1, A.8.1.3, A.8.4.2.1, A.8.4.3, A.8.5.2, A.8.16, A.8.17, A.8.22, A.8.23
S-FU(TD)	A.6.1	A.7.6.1, A.8.1.3, A.8.4.3, A.8.5.2
S-GTC_acceptor	A.7.14.1.6	A.7.14.2, A.8.27
S-GTC_requestor	A.7.14.1.6	A.7.14.2, A.8.27
S-MAJ_acceptor	A.7.11.1	A.7.11.2, A.8.20, A.8.21, A.8.24
S-MAJ_requestor	A.7.11.1	A.7.11.2, A.8.20, A.8.21, A.8.24
S-MAXSIZE_9	A.6.2	A.7.1.2
S-MAXSIZE_512	A.6.2	A.8.1.3
S-MAXSIZE_10240	A.6.2	A.7.1.2, A.8.1.3
S-MIN_acceptor	A.7.8.1	A.7.8.2, A.8.18, A.8.19

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Mnemonic	Clause where it is defined	Clauses where it is used
S-MIN_requestor	A.7.8.1	A.7.8.2, A.8.18, A.8.19
S-OA_RCV	A.7.1.2	A.8.2
S-OA_SDR	A.7.1.2	A.8.2
S-PR_RCV	A.7.1.2	A.8.24
S-PR_SDR	A.7.1.2	A.8.24
S-REL_acceptor	A.7.1.1.2	A.7.1.2, A.7.2.2, A.8.6, A.8.7, A.8.8
S-REL_requestor	A.7.1.1.2	A.7.1.2, A.7.2.2, A.8.6, A.8.7, A.8.8
S-REUSE_T	A.6.2	A.8.5.2, A.8.6
S-SEG_RCV	A.6.2	A.8.1.2.1, A.8.2, A.8.4.2.1, A.8.11, A.8.13
S-SEG_SDR	A.6.2	A.8.1.2.1, A.8.2, A.8.4.2.1, A.8.11, A.8.13
S-TDATA_acceptor	A.7.6.1	A.7.6.2, A.8.13
S-TDATA_requestor	A.7.6.1	A.7.6.2, A.8.13
S-V1	A.4.2	A.7.1.2, A.8.1.2.1, A.8.1.3, A.8.4.2.1, A.8.4.3, A.8.5.2, A.8.6, A.8.7, A.8.8, A.8.9, A.8.14, A.8.15, A.8.16, A.8.17, A.8.18, A.8.19, A.8.20, A.8.21, A.8.22, A.8.23, A.8.26, A.8.27, A.8.29, A.8.30.2, A.8.31, A.8.32, A.8.33, A.8.34, A.8.35, A.8.36
S-XCONC_RCV	A.6.2	A.8.1.2.1, A.8.4.2.1
S-XDATA_acceptor	A.7.5.1	A.7.5.2, A.8.12
S-XDATA_requestor	A.7.5.1	A.7.5.2, A.8.12

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