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UIT-T

SECTOR DE NORMALIZACIÓN
DE LAS TELECOMUNICACIONES
DE LA UIT

X.246

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SERIE X: REDES DE DATOS Y COMUNICACIÓN
ENTRE SISTEMAS ABIERTOS

Interconexión de sistemas abiertos – Formularios para
declaraciones de conformidad de implementación de
protocolo

**Tecnología de la información –
Interconexión de sistemas abiertos –
Protocolo de presentación con conexión:
Formulario de declaración de conformidad
de implementación de protocolo**

Recomendación UIT-T X.246

(Anteriormente Recomendación del CCITT)

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PREFACIO

La UIT (Unión Internacional de Telecomunicaciones) es el organismo especializado de las Naciones Unidas en el campo de las telecomunicaciones. El UIT-T (Sector de Normalización de las Telecomunicaciones de la UIT) es un órgano permanente de la UIT. En el UIT-T, que es la entidad que establece normas mundiales (Recomendaciones) sobre las telecomunicaciones, participan unos 179 países miembros, 84 empresas de explotación de telecomunicaciones, 145 organizaciones científicas e industriales y 38 organizaciones internacionales.

Las Recomendaciones las aprueban los Miembros del UIT-T de acuerdo con el procedimiento establecido en la Resolución N.º 1 de la CMNT (Helsinki, 1993). Adicionalmente, la Conferencia Mundial de Normalización de las Telecomunicaciones (CMNT), que se celebra cada cuatro años, aprueba las Recomendaciones que para ello se le sometan y establece el programa de estudios para el periodo siguiente.

En ciertos sectores de la tecnología de la información que corresponden a la esfera de competencia del UIT-T, se preparan las normas necesarias en colaboración con la ISO y la CEI. El texto de la Recomendación UIT-T X.246 se aprobó el 5 de octubre de 1996. Su texto se publica también, en forma idéntica, como Norma Internacional ISO/CEI 8823-2.

NOTA

En esta Recomendación, la expresión «Administración» se utiliza para designar, en forma abreviada, tanto una administración de telecomunicaciones como una empresa de explotación reconocida de telecomunicaciones.

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Resumen

Esta Recomendación | Norma Internacional describe la declaración de conformidad de implementación de protocolo para el protocolo de presentación con conexión de OSI (véase la Rec. UIT-T X.226 | ISO/CEI 8823-1). La declaración de conformidad de implementación de protocolo presenta en forma tabular los elementos obligatorios y facultativos del protocolo de presentación. La declaración de conformidad de implementación de protocolo se utiliza para representar las opciones y características de una implementación determinada del protocolo de presentación de OSI.

Introducción

La presente Recomendación | Norma Internacional forma parte de un conjunto de Recomendaciones | Normas Internacionales elaboradas para facilitar la interconexión de sistemas de procesamiento de la información. Se relaciona con otras Recomendaciones y Normas Internacionales del conjunto definido por el modelo de referencia para la interconexión de sistemas abiertos (véase la Rec. UIT-T X.200 | ISO/CEI 7498-1). El modelo de referencia divide la espera de normalización para interconexión en una serie de capas de especificación, cada una de tamaño manejable.

El objetivo de la interconexión de sistemas abiertos es permitir la interconexión, con un mínimo de acuerdo técnico fuera de las normas de interconexión, de sistemas de procesamiento de la información:

- de fabricantes diferentes;
- sometidos a gestiones diferentes;
- de niveles de complejidad diferentes; y
- de tecnologías diferentes.

La Rec. UIT-T X.226 | ISO/CEI 8823-1 especifica el protocolo de presentación con conexión. Éste especifica una codificación común y varias unidades funcionales de procedimientos del protocolo de presentación que han de utilizarse para satisfacer las necesidades de los usuarios del servicio de presentación.

Para evaluar la conformidad de una implementación determinada, es necesario tener una descripción de las capacidades y opciones que han sido realizadas para una especificación dada de OSI. Esta descripción se denomina una declaración de conformidad de implementación de protocolo (PICS).

La presente Recomendación | Norma Internacional comprende el formulario de declaración de conformidad de implementación de protocolo (PICS) para el protocolo de presentación con conexión definido en la Rec. UIT-T X.226 | ISO/CEI 8823-1.

NORMA INTERNACIONAL

RECOMENDACIÓN UIT-T

**TECNOLOGÍA DE LA INFORMACIÓN – INTERCONEXIÓN DE SISTEMAS
ABIERTOS – PROTOCOLO DE PRESENTACIÓN CON CONEXIÓN:
FORMULARIO DE DECLARACIÓN DE CONFORMIDAD
DE IMPLEMENTACIÓN DE PROTOCOLO**

1 Alcance

La presente Recomendación | Norma Internacional proporciona el formulario de declaración de conformidad de implementación de protocolo (PICS) para el protocolo de presentación con conexión especificado en la Rec. UIT-T X.226 | ISO/CEI 8823-1. Este formulario de PICS está de acuerdo con los requisitos y la orientación pertinentes, indicados en la Rec. UIT-T X.296 | ISO/CEI 9646-7. En la presente Recomendación | Norma Internacional se proporciona información detallada sobre la utilización de este formulario.

El suministrador de una implementación que alega conformarse con la Rec. UIT-T X.226 | ISO/CEI 8823-1 tiene que rellenar un ejemplar del formulario de PICS que figura en el Anexo A y tiene que proporcionar la información necesaria para identificar al suministrador y a la implementación.

2 Referencias normativas

Las siguientes Recomendaciones y Normas Internacionales contienen disposiciones que, mediante su referencia en este texto constituyen disposiciones de la presente Recomendación | Norma Internacional. Al efectuar esta publicación, estaban en vigor las ediciones indicadas. Todas las Recomendaciones y Normas son objeto de revisiones, por lo que se preconiza que los participantes en acuerdos basados en la presente Recomendación | Norma Internacional investiguen la posibilidad de aplicar las ediciones más recientes de las Recomendaciones y Normas citadas a continuación. Los miembros de la CEI y de la ISO mantienen registros de las Normas Internacionales actualmente vigentes. La Oficina de Normalización de las Telecomunicaciones de la UIT mantiene una lista de las Recomendaciones UIT-T vigentes.

2.1 Recomendaciones | Normas Internacionales idénticas

- Recomendación UIT-T X.200 (1994) | ISO/CEI 7498-1:1994, *Tecnología de la información – Interconexión de sistemas abiertos – Modelo de referencia básico: El modelo básico.*
- Recomendación UIT-T X.215 (1995) | ISO/CEI 8326:1996, *Tecnología de la información – Interconexión de sistemas abiertos – Definición del servicio de sesión.*
- Recomendación UIT-T X.226 (1994) | ISO/CEI 8823-1:1994, *Tecnología de la información – Interconexión de sistemas abiertos – Protocolo de presentación con conexión: Especificación del protocolo.*
- Recomendación UIT-T X.680 (1994) | ISO/CEI 8824-1:1995, *Tecnología de la información – Notación de sintaxis abstracta uno: Especificación de la notación básica.*
- Recomendación UIT-T X.690 (1994) | ISO/CEI 8825-1:1995, *Tecnología de la información – Reglas de codificación de notación de sintaxis abstracta: Especificación de las reglas de codificación básica, de las reglas de codificación canónica y de las reglas de codificación distinguida.*

2.2 Pares de Recomendaciones | Normas Internacionales de contenido técnico equivalente

- Recomendación UIT-T X.290 (1995), *Metodología y marco de las pruebas de conformidad de interconexión de sistemas abiertos de las Recomendaciones sobre los protocolos para aplicaciones del UIT-T – Conceptos generales.*
ISO/CEI 9646-1:1994, *Information technology – Open Systems Interconnection – Conformance testing methodology and framework – Part 1: General concepts.*

- Recomendación UIT-T X.296 (1995), *Metodología y marco de las pruebas de conformidad de interconexión de sistemas abiertos de las Recomendaciones sobre los protocolos para aplicaciones del UIT-T – Declaraciones de conformidad de implementación.*
ISO/CEI 9646-7:1995, *Information technology – Open Systems Interconnection – Conformance testing methodology and framework – Part 7: Implementation Conformance Statements.*
- Recomendación X.650 del CCITT (1992), *Tecnología de la información – Interconexión de sistemas abiertos – Modelo de referencia para la denominación y el direccionamiento.*
ISO 7498-3:1989, *Information processing systems – Open Systems Interconnection – Basic Reference Model – Part 3: Naming and addressing.*

2.3 Referencias adicionales

- Recomendación X.410 del CCITT (1984), *Sistemas de tratamiento de mensajes: Operaciones distantes y servidor de transferencia fiable.*

3 Definiciones

A los efectos de la presente Recomendación | Norma Internacional, son aplicables las definiciones siguientes.

3.1 Términos definidos en la Rec. UIT-T X.226 | ISO/CEI 8823-1

3.2 Términos definidos en la Rec. UIT-T X.290 | ISO/CEI 9646-1

- a) Formulario de declaración de conformidad de implementación.
- b) Declaración de conformidad de implementación.
- c) Declaración de conformidad de implementación de protocolo (PICS).
- d) Formulario de PICS.

3.3 Términos adicionales

- a) Solicitante: la máquina de protocolo de presentación que inicia una acción determinada.
- b) Aceptador: la máquina de protocolo de presentación que acepta una acción determinada.

4 Abreviaturas

ASN.1	Notación de sintaxis abstracta uno (<i>abstract syntax notation one</i>).
ICS	Declaración de conformidad de implementación(<i>implementation conformance statement</i>).
PCI	Información de control de protocolo (<i>protocol control information</i>).
PDV	Valor de datos de presentación (<i>presentation data value</i>).
PICS	Declaración de conformidad de implementación de protocolo (<i>protocol implementation conformance statement</i>).
PPDU	Unidad de datos de protocolo de presentación (<i>presentation protocol data unit</i>).

5 Conformidad

Un formulario de PICS conforme será técnicamente equivalente al formulario de PICS publicado por UIT-T | ISO/CEI y mantendrá la numeración y la ordenación de los ítems del formulario de PICS UIT-T | ISO/CEI.

Una declaración de conformidad de implementación de protocolo que se conforma con esta Recomendación | Norma Internacional:

- a) describirá una implementación que se ajusta a la Rec. UIT-T X.226 | ISO/CEI 8823-1;
- b) será un formulario de PICS conforme, que ha sido rellenado de acuerdo con las instrucciones indicadas en A.2;
- c) incluirá la información necesaria para identificar de manera única e inequívoca al suministrador y a la implementación.

Anexo A¹⁾**Formulario de declaración de conformidad de implementación de protocolo (PICS) para el protocolo de presentación con conexión**

(Este anexo es parte integrante de la presente Recomendación | Norma Internacional)

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 Table A.1.

Table A.1

Identification of corrigenda applied to this PICS proforma	ITU-T Rec. X.246 (1994) ISO/IEC 8823-2:1995 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 implementations of ITU-T Rec. X.226 | ISO/IEC 8823-1 with a consistent means of stating which capabilities have been implemented.

The proforma is in the 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 subclause 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 a high level, the protocol and corrigenda that have been implemented.

Subclause A.5 contains the global statement of conformance.

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

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 columns are headed 'Status', and 'Support'. The definition of each is given below.

Additionally, the following definitions apply:

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

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.

¹⁾ **Comunicado sobre derechos de autor del formulario de PICS**

Los usuarios de esta Recomendación | Norma Internacional pueden reproducir libremente el formulario de PICS de este anexo a fin de que pueda ser utilizado para los fines previstos, y pueden además publicar el PICS cumplimentado.

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 Prerequisite notation

If a predicate applies to a whole ICS proforma table, a prerequisite line may be specified in front of the table to which it applies. A prerequisite line takes the form:

Prerequisite: <predicate>

The meaning of such a line is that if <predicate> is True, then the table applies, else it is not-applicable.

A.2.2.3 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 be the 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.2.2.4 Status column

‘Status’ as defined in ITU-T Rec. X.226 | ISO/IEC 8823-1. This column indicates the level of support required for conformance to ITU-T Rec. X.226 | ISO/IEC 8823-1.

A.2.2.4.1 Definitions applying to the table in A.7

The values are as follows:

- ‘m’ Mandatory support is required.
- ‘o’ Optional support is permitted for conformance to ITU-T Rec. X.226 | ISO/IEC 8823-1. If implemented, it must conform to the specifications and restrictions contained in ITU-T Rec. X.226 | ISO/IEC 8823-1. These restrictions may affect the optionality of other items.
- ‘o.n’ Selectable options among a set of items (where *n* is the number which identifies the group of optional items that are grouped together). The definitions for the qualified optional statements used are written under the tables, and are indexed in Annex B.
- ‘cn’ The item is conditional (where *n* is the number which identifies the condition which is applicable). The definitions for the conditional statements used are written under the tables, and are indexed in Annex B.
- ‘n/a’ The item is not applicable.

If support is claimed for the sending of a PPDU, then the implementation shall be able to:

- build the PPDU (i.e. build correctly the heading, all mandatory parameters, and all supported optional parameters) in the situations required by the protocol specification;
- encode the PPDU according to a valid encoding format.

If support is claimed for receiving of a PPDU, then the implementation shall be able to:

- syntactically identify the PPDU and parse all valid instances of the PDU, including all valid PDU parameters. Supporting the receipt of a PDU whilst having no ability to parse one of its valid parameters is non-conformant.

A.2.2.4.2 Definitions applying to the tables in A.8

The values for the sender of a PDU are as follows:

- ‘m’ Mandatory support is required. The implementation shall be able to build and encode this parameter within the PPDU.
- ‘o’ Optional support is permitted for conformance to ITU-T Rec. X.236 | ISO/IEC 9576-1.
- ‘cn’ The item is conditional (where *n* is the number which identifies the condition which is applicable). The definitions for the conditional statements used are written under the tables, and are indexed in Annex B.
- ‘n/a’ The item is not applicable.

The values for the receiver of a PDU are as follows:

- ‘m’ Mandatory support is required. The implementation shall be able to parse this parameter within the PPDU, and also perform the actions required by the semantics of the parameter.
- ‘o’ Optional support is permitted for conformance to ITU-T Rec. X.236 | ISO/IEC 9576-1. If support is claimed, the implementation shall support the semantics of the parameter.
- ‘cn’ The item is conditional (where *n* is the number which identifies the condition which is applicable). The definitions for the conditional statements used are written under the tables, and are indexed in Annex B.
- ‘n/a’ The item is not applicable.

A.2.2.5 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:

- ‘Y’ Yes, the feature has been implemented.
- ‘N’ No, the feature has not been implemented.
- ‘–’ No answer required – it is unnecessary to answer the question with a Yes or a No because the question has a status value of not-applicable.

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 A.2 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. Recognizing 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)
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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.226 | ISO/IEC 8823-1 protocol details

	Identification of Protocol Specification	Support
1	ITU-T Rec. X.226 (1994) ISO/IEC 8823-1:1994	
2		
3		
4		

A.4.2 ITU-T Rec. X.226 | ISO/IEC 8823-1 technical corrigenda implemented

Identification of corrigenda applied to the implementation	ITU-T Rec. X.226 (1994) ISO/IEC 8823-1:1994 Corr: Corr: Corr: Corr: Corr:
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A.5 Global statement of conformance

1	Are all mandatory features implemented? (Yes or No)
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NOTE – If a positive response is not given to this box, then the implementation does not conform to ITU-T Rec. X.226 | ISO/IEC 8823-1.

A.6 Protocol mechanisms and functional units**A.6.1 Protocol mechanisms**

	Mode	Status	Support	Mnemonic
1	X.410 (1984)	o.1		
2	Normal	o.1		
o.1: either Normal mode or X.410 (1984) mode or both shall be supported. If only X.410 (1984) mode is supported, then the remainder of the proforma shall be ignored.				

A.6.2 Functional units

	Presentation functional units	Status	Support	Mnemonic
1	Kernel	m		
2	Presentation Context Management	o		P-FU(CM)
3	Presentation Context Restoration	c0		P-FU(CR)
c0: if [P-FU(CM)] then o else n/a.				

	Pass through to Session functional units	Status	Support	Mnemonic
4	Negotiated Release	o		S-FU(NR)
5	Half Duplex	o.2		S-FU(HD)
6	Duplex	o.2		S-FU(FD)
7	Expedited Data	o		S-FU(EX)
8	Typed Data	o		S-FU(TD)
9	Capability Data Exchange	c1		S-FU(CD)
10	Minor Synchronize	o		S-FU(SY)
11	Symmetric Synchronize	o		S-FU(SS)
12	Data Separation	o		S-FU(DS)
13	Major Synchronize	o		S-FU(MA)
14	Resynchronize	o		S-FU(RESYNC)
15	Exceptions	c2		S-FU(EXCEP)
16	Activity Management	o		S-FU(ACT)
o.2: pass through for at least one of the Session functional units Duplex and Half Duplex shall be supported. c1: if [S-FU(ACT)] then o else n/a. c2: if [S-FU(HD)] then o else n/a.				

A.7 Elements of procedure related to the PICS

A.7.1 Kernel functional unit

A.7.1.1 Supported roles

A.7.1.1.1 Presentation connection

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

A.7.1.1.2 Normal data

	Role	Status	Support	Mnemonic
1	Requestor	o		P-DATA_requestor
2	Acceptor	o		P-DATA_acceptor

A.7.1.1.3 Orderly release

	Role	Status	Support	Mnemonic
1	Requestor	o		P-REL_requestor
2	Acceptor	o		P-REL_acceptor

A.7.1.2 Supported PPDUs associated with the kernel services

	PPDU	Sender		Receiver		Reference	Comment
		Status	Support	Status	Support		
1	CP	c3		c4			
2	CPA	c4		c3			
3	CPR	c4		c3			
4	ARP	m		m			
5	ARU	o		m			
6	TD	c5		c6			
c3: if [P-CON_initiator] then m else n/a. c4: if [P-CON_responder] then m else n/a. c5: if [P-DATA_requestor] then m else n/a. c6: if [P-DATA_acceptor] then m else n/a.							

A.7.2 Presentation context management functional unit

Prerequisite: P-FU(CM)

A.7.2.1 Supported roles

Does the implementation support the Context Management functional unit as:

	Role	Status	Support	Mnemonic
1	Requestor	o.4		P-ALTER-C_requestor
2	Acceptor	o.4		P-ALTER-C_acceptor
o.4: a conforming implementation shall support at least one of the above roles if the functional unit is supported.				

A.7.2.2 Supported PPDUs associated with the context management services

	PPDU	Sender		Receiver		Reference	Comment
		Status	Support	Status	Support		
1	AC	c7		c8			
2	ACA	c8		c7			
c7: if [P-ALTER-C_requestor] then m else n/a. c8: if [P-ALTER-C_acceptor] then m else n/a.							

A.7.3 Presentation context restoration functional unit

No additional PPDUs.

A.7.4 Pass through to session functional units**A.7.4.1 Negotiated Release**

The role supported by the implementation for the Session Negotiated Release functional unit is the same as for the Orderly Release.

A.7.4.2 Half Duplex

Prerequisite: S-FU(HD)

	Role	Status	Support	Mnemonic
1	Requestor	m		
2	Acceptor	m		

A.7.4.3 Duplex

There is no additional pass through functionality associated with this Session functional unit. This subclause is present for completeness only.

A.7.4.4 Expedited Data

Prerequisite: S-FU(EX)

	Role	Status	Support	Mnemonic
1	Requestor	o.5		S-XDATA_requestor
2	Acceptor	o.5		S-XDATA_acceptor
o.5: a conforming implementation shall support at least one of the above roles if the pass through functional unit is supported.				

A.7.4.5 Typed Data

Prerequisite: S-FU(TD)

	Role	Status	Support	Mnemonic
1	Requestor	o.6		S-TDATA_requestor
2	Acceptor	o.6		S-TDATA_acceptor
o.6: a conforming implementation shall support at least one of the above roles if the pass through functional unit is supported.				

A.7.4.6 Capability Data

Prerequisite: S-FU(CD)

	Role	Status	Support	Mnemonic
1	Requestor	o.7		S-CAP_requestor
2	Acceptor	o.7		S-CAP_acceptor
o.7: a conforming implementation shall support at least one of the above roles if the pass through functional unit is supported.				

A.7.4.7 Minor Synchronize

Prerequisite: S-FU(SY)

	Role	Status	Support	Mnemonic
1	Requestor	o.8		S-MIN_requestor
2	Acceptor	o.8		S-MIN_acceptor
o.8: a conforming implementation shall support at least one of the above roles if the pass through functional unit is supported.				

A.7.4.8 Symmetric Synchronize

Prerequisite: S-FU(SS)

	Role	Status	Support	Mnemonic
1	Requestor	m		
2	Acceptor	m		

A.7.4.9 Data Separation

Prerequisite: S-FU(DS)

	Role	Status	Support	Mnemonic
1	Requestor	m		
2	Acceptor	m		

A.7.4.10 Major Synchronize

Prerequisite: S-FU(MA)

	Role	Status	Support	Mnemonic
1	Requestor	o.9		S-MAJ_requestor
2	Acceptor	o.9		S-MAJ_acceptor
o.9: a conforming implementation shall support at least one of the above roles if the pass through functional unit is supported.				

A.7.4.11 Resynchronize

Prerequisite: S-FU(RESYNC)

	Role	Status	Support	Mnemonic
1	Requestor	m		
2	Acceptor	m		

A.7.4.12 Exceptions

Prerequisite: S-FU(EXCEP)

	Role	Status	Support	Mnemonic
1	Requestor	m		
2	Acceptor	m		

A.7.4.13 Activity Management

Prerequisite: S-FU(ACT)

A.7.4.13.1 Activity start

	Role	Status	Support	Mnemonic
1	Requestor	o.10		S-ACTS_requestor
2	Acceptor	o.10		S-ACTS_acceptor
o.10: a conforming implementation shall support at least one of the above roles if the pass through functional unit is supported.				

A.7.4.13.2 Activity resume

	Role	Status	Support	Mnemonic
1	Requestor	o.11		S-ACTR_requestor
2	Acceptor	o.11		S-ACTR_acceptor
o.11: a conforming implementation shall support at least one of the above roles if the pass through functional unit is supported.				

A.7.4.13.3 Activity interrupt

	Role	Status	Support	Mnemonic
1	Requestor	o.12		S-ACTI_requestor
2	Acceptor	o.12		S-ACTI_acceptor
o.12: a conforming implementation shall support at least one of the above roles if the pass through functional unit is supported.				

A.7.4.13.4 Activity discard

	Role	Status	Support	Mnemonic
1	Requestor	o.13		S-ACTD_requestor
2	Acceptor	o.13		S-ACTD_acceptor
o.13: a conforming implementation shall support at least one of the above roles if the pass through functional unit is supported.				

A.7.4.13.5 Activity end

	Role	Status	Support	Mnemonic
1	Requestor	o.14		S-ACTE_requestor
2	Acceptor	o.14		S-ACTE_acceptor
o.14: a conforming implementation shall support at least one of the above roles if the pass through functional unit is supported.				

A.7.4.13.6 Give tokens confirm

	Role	Status	Support	Mnemonic
1	Requestor	o		S-GTC_requestor
2	Acceptor	o		S-GTC_acceptor

A.8 Supported PPDU parameters**A.8.1 Connect presentation (CP) PPDU**

	Parameter	Sender		Receiver	
		Status	Support	Status	Support
1	Calling presentation selector	c9		c12	
2	Called presentation selector	c9		c12	
3	Mode selector	c3		c4	
4	Presentation context definition list	c9		c4	
5	Default context name	c9		c12	
6	Protocol version	c9		c4	
7	Presentation requirements	c9		c14	
8	User session requirements	c10		c12	
9	User data	c9		c4	
10	CPC Type	c11		c12	
c3: if [P-CON_initiator] then m else n/a. c4: if [P-CON_responder] then m else n/a. c9: if [P-CON_initiator] then o else n/a. c10: if [P-CON_initiator and P-FU(CM)] then o else n/a. c11: if [P-CON_initiator and A.8.1/4a] then o else n/a. NOTE – A definition of the numbering notation used in this Recommendation International Standard is given in A.2.2.3. c12: if [P-CON_responder] then o else n/a. c14: if [not P-CON_responder] then n/a else if [P-FU(CM)] then m else o.					

A.8.2 Connect presentation accept (CPA)

	Parameter	Sender		Receiver	
		Status	Support	Status	Support
1	Responding presentation selector	c12		c9	
2	Mode selector	c4		c3	
3	Presentation context definition result list	c4		c15	
4	Protocol version	c12		c3	
5	Presentation requirements	c14		c16	
6	User session requirements	c13		c17	
7	User data	c12		c3	
c3: if [P-CON_initiator] then m else n/a. c4: if [P-CON_responder] then m else n/a. c9: if [P-CON_initiator] then o else n/a. c12: if [P-CON_responder] then o else n/a. c13: if [P-CON_responder and P-FU(CM)] then o else n/a. c14: if [not P-CON_responder] then n/a else if [P-FU(CM)] then m else o. c15: if [P-CON_initiator and A.8.1/4a] then m else n/a. c16: if [P-CON_initiator and A.8.1/7a] then o else n/a. c17: if [P-CON_initiator and A.8.1/8a] then o else n/a.					

A.8.3 Connect presentation reject (CPR) PPDU

	Parameter	Sender		Receiver	
		Status	Support	Status	Support
1	Responding presentation selector	c12		c9	
2	Presentation context definition result list	c4		c11	
3	Protocol version	c12		c9	
4	Default context result	c12		c18	
5	Provider reason	c12		c9	
6	User data	c12		c9	
c4: if [P-CON_responder] then m else n/a. c9: if [P-CON_initiator] then o else n/a. c11: if [P-CON_initiator and A.8.1/4a] then o else n/a. c12: if [P-CON_responder] then o else n/a. c18: if [P-CON_initiator and A.8.1/5a] then o else n/a.					

A.8.4 Abnormal release user (ARU) PPDU

	Parameter	Sender		Receiver	
		Status	Support	Status	Support
1	Presentation context identifier list	o		o	
2	User data	o		o	

A.8.5 Abnormal release provider (ARP) PPDU

	Parameter	Sender		Receiver	
		Status	Support	Status	Support
1	Provider reason	o		o	
2	Event identifier	o		o	

A.8.6 Alter context (AC) PPDU

Prerequisite: P-FU(CM)

	Parameter	Sender		Receiver	
		Status	Support	Status	Support
1	Presentation context addition list	c19		c8	
2	Presentation context deletion list	c19		c8	
3	User data	c19		c20	
c8: if [P-ALTER-C_acceptor] then m else n/a. c19: if [P-ALTER-C_requestor] then o else n/a. c20: if [P-ALTER-C_acceptor] then o else n/a.					

A.8.7 Alter context acknowledge (ACA) PPDU

Prerequisite: P-FU(CM)

	Parameter	Sender		Receiver	
		Status	Support	Status	Support
1	Presentation context addition result list	c8		c21	
2	Presentation context deletion result list	c8		c22	
3	User data	c20		c19	
c8: if [P-ALTER-C_acceptor] then m else n/a. c19: if [P-ALTER-C_requestor] then o else n/a. c20: if [P-ALTER-C_acceptor] then o else n/a. c21: if [A.8.6/1a] then m else n/a. c22: if [A.8.6/2a] then m else n/a.					

A.8.8 Presentation data (TD) PPDU

	Parameter	Sender		Receiver	
		Status	Support	Status	Support
1	User data	c5		c6	
c5: if [P-DATA_requestor] then m else n/a. c6: if [P-DATA_acceptor] then m else n/a.					

A.8.9 Presentation typed data (TTD) PPDU

Prerequisite: S-FU(TD)

	Parameter	Sender		Receiver	
		Status	Support	Status	Support
1	User data	c23		c24	
c23: if [S-TDATA_requestor] then m else n/a. c24: if [S-TDATA_acceptor] then m else n/a.					

A.8.10 Expedited data (TE) PPDU

Prerequisite: S-FU(EX)

	Parameter	Sender		Receiver	
		Status	Support	Status	Support
1	User data	c25		c26	
c25: if [S-XDATA_requestor] then m else n/a. c26: if [S-XDATA_acceptor] then m else n/a.					

A.8.11 Capability data (TC) PPDU

Prerequisite: S-FU(CD)

	Parameter	Sender		Receiver	
		Status	Support	Status	Support
1	User data	c27		c28	
c27: if [S-CAP_requestor] then m else n/a. c28: if [S-CAP_acceptor] then m else n/a.					

A.8.12 Capability data acknowledge (TCC) PPDU

Prerequisite: S-FU(CD)

	Parameter	Sender		Receiver	
		Status	Support	Status	Support
1	User data	c28		c27	
c27: if [S-CAP_requestor] then m else n/a. c28: if [S-CAP_acceptor] then m else n/a.					

A.8.13 Resynchronize (RS) PPDU

Prerequisite: S-FU(RESYNC)

	Parameter	Sender		Receiver	
		Status	Support	Status	Support
1	Presentation context identifier list	c48		c48	
2	User data	o		o	
c48: if [P-FU(CR)] then o else n/a.					

A.8.14 Resynchronize acknowledge (RSA) PPDU

Prerequisite: S-FU(RESYNC)

	Parameter	Sender		Receiver	
		Status	Support	Status	Support
1	Presentation context identifier list	c48		c48	
2	User data	o		o	
c48: if [P-FU(CR)] then o else n/a.					

A.8.15 Session service primitives not carrying Presentation PCI

	Primitive	Sender		Receiver	
		Status	Support	Status	Support
1	S-REL-req/ind	c29		c30	
2	S-REL-rsp/cnf	c30		c29	
3	S-TG-req/ind	c31		c31	
4	S-TP-req/ind	c31		c31	
5	S-CG-req/ind	c32		c32	
6	S-SYNm-req/ind	c33		c34	
7	S-SYNm-rsp/cnf	c34		c33	
8	S-SYNM-req/ind	c35		c36	
9	S-SYNM-rsp/cnf	c36		c35	
10	S-PER-ind	–		c37	
11	S-UER-req/ind	c37		c37	
12	S-ACTS-req/ind	c38		c39	
13	S-ACTR-req/ind	c40		c41	
14	S-ACTI-req/ind	c42		c43	
15	S-ACTI-rsp/cnf	c43		c42	
16	S-ACTD-req/ind	c44		c45	
17	S-ACTD-rsp/cnf	c45		c44	
18	S-ACTE-req/ind	c46		c47	
19	S-ACTE-rsp/cnf	c47		c46	
c29: if [P-REL_requestor] then m else n/a. c30: if [P-REL_acceptor] then m else n/a. c31: 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. c32: if [S-FU(ACT)] then m else n/a. c33: if [S-MIN_requestor] then m else n/a. c34: if [S-MIN_acceptor] then m else n/a. c35: if [S-MAJ_requestor] then m else n/a. c36: if [S-MAJ_acceptor] then m else n/a. c37: if [S-FU(EXCEP)] then m 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.					

A.9 Support of syntaxes

A.9.1 Transfer syntaxes supported

This subclause shall be used to indicate which transfer syntaxes the implementation supports. For each transfer syntax supported, a reference to the definition of the transfer syntax shall be given. Implementation restrictions with respect to the encoding variations as offered by the transfer syntax shall be stated separately and referenced in the following table where applicable. If the number of transfer syntaxes supported by the implementation exceeds the space available in the table, then details of support shall be given in an appendix to the PICS using a table with the equivalent layout.

NOTE – The definition of the ASN.1 basic encoding rules are given in ITU-T Rec. X.690 | ISO/IEC 8825-1. To complete the specification of a transfer syntax, it is necessary to indicate the abstract syntax specification to which the encoding rules should be applied.

	Type	Detail	Support	Reference to definition	Reference to restriction
1	Object identifier	{joint-iso-ccitt asn1(1) basic-encoding(1)}			

A.9.2 Abstract syntaxes supported

This subclause shall be used to indicate which abstract syntaxes the implementation supports. If the number of abstract syntaxes supported by the implementation exceeds the space available in the table, then details of support shall be given in an appendix to the PICS using a table with the equivalent layout.

NOTE – From the Presentation standard point of view, an implementation is required to support any standardized abstract syntax. However, for technical and economic reasons, an implementation may only support a limited number of abstract syntaxes.

	Type	Detail	Support
1	Object identifier	{joint-iso-ccitt association control(2) abstract-syntax(1) apdus(0) version1(1)}	

A.9.3 Use of ASN.1 basic encoding

This subclause shall be used to indicate whether any encoding restrictions exist for sending:

- a) the Presentation PCI of PPDU's;
- b) abstract syntaxes using ASN.1 which are stated as supported in A.9.2.

Any restrictions given are assumed to apply to a) and b) unless explicitly stated. In the case that more than one set of restrictions apply, the table shall be replicated and it shall be clearly stated to which abstract syntax each set of restrictions apply.

	Restriction	Support	Comment
1	Only definite form of length encoding used		
2	Indefinite form of length encoding used for all constructed types		
3	Only minimal number of octets used for definite form of length encoding		
4	Only primitive encoding used for OCTETSTRING		
5	Only primitive encoding used for BITSTRING		

A.9.4 PDV structure of User Data parameters

This subclause shall be used to indicate whether particular restrictions exist for the encoding of multiple Presentation data value in abstract syntaxes using ASN.1, which are stated as supported in A.9.2.

Any restrictions given are assumed to apply to all abstract syntaxes unless explicitly stated. In the case that more than one set of restrictions apply, the table shall be replicated and it shall be clearly stated to which abstract syntax each set of restrictions apply.

	Restriction	Support	Limit	Comment
1	Limit on number of PDVs in User Data parameter			
2	Limit on number of PDVs in a single PDV-list value			

End of PICS proforma

Anexo B**Resumen de condiciones**

(Este anexo no es parte integrante de la presente Recomendación | Norma Internacional)

- o.1: either Normal mode or X.410 (1984) mode or both shall be supported. If only X.410 (1984) mode is supported, then the remainder of the proforma shall be ignored.
- o.2: pass through for at least one of the Session functional units Duplex and Half Duplex shall be supported.
- o.3: a conforming implementation shall support at least one of the above roles.
- o.4: a conforming implementation shall support at least one of the above roles if the functional unit is supported.
- o.5: a conforming implementation shall support at least one of the above roles if the pass through functional unit is supported.
- o.6: a conforming implementation shall support at least one of the above roles if the pass through functional unit is supported.
- o.7: a conforming implementation shall support at least one of the above roles if the pass through functional unit is supported.
- o.8: a conforming implementation shall support at least one of the above roles if the pass through functional unit is supported.
- o.9: a conforming implementation shall support at least one of the above roles if the pass through functional unit is supported.
- o.10: a conforming implementation shall support at least one of the above roles if the pass through functional unit is supported.
- o.11: a conforming implementation shall support at least one of the above roles if the pass through functional unit is supported.
- o.12: a conforming implementation shall support at least one of the above roles if the pass through functional unit is supported.
- o.13: a conforming implementation shall support at least one of the above roles if the pass through functional unit is supported.
- o.14: a conforming implementation shall support at least one of the above roles if the pass through functional unit is supported.
- c0: if [P-FU(CM)] then o else n/a.
- c1: if [S-FU(ACT)] then o else n/a.
- c2: if [S-FU(HD)] then o else n/a.
- c3: if [P-CON_initiator] then m else n/a.
- c4: if [P-CON_responder] then m else n/a.
- c5: if [P-DATA_requestor] then m else n/a.
- c6: if [P-DATA_acceptor] then m else n/a.
- c7: if [P-ALTER-C_requestor] then m else n/a.
- c8: if [P-ALTER-C_acceptor] then m else n/a.
- c9: if [P-CON_initiator] then o else n/a.
- c10: if [P-CON_initiator and P-FU(CM)] then o else n/a.
- c11: if [P-CON_initiator and A.8.1/4a] then o else n/a.
- c12: if [P-CON_responder] then o else n/a.
- c13: if [P-CON_responder and P-FU(CM)] then o else n/a.
- c14: if [not P-CON_responder] then n/a else if [P-FU(CM)] then m else o.
- c15: if [P-CON_initiator and A.8.1/4a] then m else n/a.
- c16: if [P-CON_initiator and A.8.1/7a] then o else n/a.
- c17: if [P-CON_initiator and A.8.1/8a] then o else n/a.
- c18: if [P-CON_initiator and A.8.1/5a] then o else n/a.
- c19: if [P-ALTER-C_requestor] then o else n/a.
- c20: if [P-ALTER-C_acceptor] then o else n/a.
- c21: if [A.6/1a] then m else n/a.
- c22: if [A.6/2a] then m else n/a.
- c23: if [S-TDATA_requestor] then m else n/a.
- c24: if [S-TDATA_acceptor] then m else n/a.

- c25: if [S-XDATA_requestor] then m else n/a.
- c26: if [S-XDATA_acceptor] then m else n/a.
- c27: if [S-CAP_requestor] then m else n/a.
- c28: if [S-CAP_acceptor] then m else n/a.
- c29: if [P-REL_requestor] then m else n/a.
- c30: if [P-REL_acceptor] then m else n/a.
- c31: 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.
- c32: if [S-FU(ACT)] then m else n/a.
- c33: if [S-MIN_requestor] then m else n/a.
- c34: if [S-MIN_acceptor] then m else n/a.
- c35: if [S-MAJ_requestor] then m else n/a.
- c36: if [S-MAJ_acceptor] then m else n/a.
- c37: if [S-FU(EXCEP)] then m 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.
- c48: if [P-FU(CR)] then o else n/a.

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