INTERNATIONAL STANDARDIZED PROFILE

ISO/IEC ISP 10614-3

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Information technology — International Standardized Profile RC — X.25 protocol relaying —

Part 3:
CSMA/CD LAN subnetwork-dependent, media-dependent requirements

Technologies de l'information — Profil normalisé international RC — Transmission du protocole X.25 —

Partie 3: Prescriptions dépendantes du sous-réseau du CSMA/CD LAN, dépendantes des supports

Reference number
ISO/IEC ISP 10614-3:1995(E)

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Foreword

ISO (the International Organization for Standardization) and IEC (the International Electrotechnical Commission) together form a system for worldwide standardization as a whole. 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. In addition to developing International Standards, ISO/IEC JTC 1 has created a Special Group on Functional Standardization (ISO/IEC JTC 1/SGFS) for the processing of International Standardized Profiles.

An International Standardized Profile is an internationally agreed, harmonized document which identifies a standard or group of standards, together with options and parameters, necessary to accomplish a function or set of functions.

Draft International Standardized Profiles are circulated to national bodies for voting. Publication as an International Standardized Profile requires approval by at least 75% of the national bodies casting a vote.

International Standardized Profile ISO/IEC ISP 10614-3 was prepared with the collaboration of

- Asia-Oceania Workshop (AOW);
- European Workshop for Open Systems (EWOS);
- Open Systems Environment Implementors' Workshop (OIW).

ISO/IEC ISP 10614 consists of several parts, under the general title *Information technology - International Standardized Profile RC - X.25 protocol relaying:*

- *Part 1: Subnetwork-independent requirements*
- *Part 2: LAN subnetwork-dependent, media-independent requirements*
- *Part 3: CSMA/CD LAN subnetwork-dependent, media-dependent requirements*
- *Part 4: PSDN subnetwork-dependent, media-dependent requirements for virtual calls over a permanent access*
- *Part 5: Definition of profile RC51.1111, X.25 protocol relaying between CSMA/CD LAN subnetworks and PSDNs using virtual calls over a PSTN leased line permanent access*
- *Part 6: Definition of profile RC51.1121, X.25 protocol relaying between CSMA/CD LAN subnetworks and PSDNs using virtual calls over a digital data circuit / CSDN leased line permanent access*

Annexes A and B form an integral part of this part of ISO/IEC ISP 10614.

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Introduction

This International Standardized Profile (ISP) is defined in accordance with the principles specified by ISO/IEC Technical Report 10000, "Information technology - Framework and taxonomy of International Standardized Profiles".

The context of Functional Standardization is one area in the overall field of Information Technology (IT) standardization activities, covering base standards, profiles, and registration mechanisms. A profile defines a combination of base standards that collectively perform a specific well-defined IT function. Profiles standardize the use of options and other variations in the base standards, and provide a base for the development of uniform, internationally recognized system tests.

ISPs are produced not simply to "legitimize" a particular choice of base standards and options, but to promote real system interoperability. One of the most important roles for an ISP is to serve as the basis for the development (by organizations other than ISO and IEC) of internationally recognized test methods. The development and widespread acceptance of tests based on this and other ISPs is crucial to the successful realization of this goal.

ISO/IEC ISP 10614 consists of several parts, of which this is part 3. Part 1 of ISO/IEC ISP 10614 specifies the profile requirements that are subnetwork-independent. There are further parts which specify subnetwork-dependent and media-dependent requirements. In addition, for each individual profile there is a part of ISO/IEC ISP 10614 which identifies the specific requirements of that profile, making reference to appropriate material from part 1 and from the subnetwork-dependent parts.

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Information technology — International Standardized Profile RC — X.25 protocol relaying —

Part 3:
CSMA/CD LAN subnetwork-dependent, media-dependent requirements

1 Scope

This part of ISO/IEC ISP 10614 specifies media-dependent requirements applicable to an interworking unit attached to an ISO/IEC 8802-3 CSMA/CD LAN subnetwork. The operation of an interworking unit may involve relaying from one subnetwork to another, and those subnetworks need not be of the same type. This part of ISO/IEC ISP 10614 applies only to communication over those subnetworks which are ISO/IEC 8802-3 CSMA/CD LANs.

2 Normative references

The following documents contain provisions which, through reference in this text, constitute provisions of this part of ISO/IEC ISP 10614. At the time of publication, the editions indicated were valid. All documents are subject to revision, and parties to agreements based on this part of ISO/IEC ISP 10614 are warned against automatically applying any more recent editions of the documents listed below, since the nature of references made by ISPs to such documents is that they may be specific to a particular edition. Members of IEC and ISO maintain registers of currently valid International Standards and ISPs, and ITU-T maintains published editions of its current Recommendations.

ISO/IEC 8802-3 : 1993, *Information technology - Local and metropolitan area networks - Part 3: Carrier sense multiple access with collision detection (CSMA/CD) access method and physical layer specifications.*

ISO/IEC TR 10000-1 : 1992, *Information technology - Framework and taxonomy of International Standardized Profiles - Part 1: Framework.*

ISO/IEC TR 10000-2 : 1994, *Information technology - Framework and taxonomy of International Standardized Profiles - Part 2: Principles and taxonomy for OSI Profiles.*

ISO/IEC ISP 10614-1 : 1995, *Information Technology - International Standardized Profile RC - X.25 protocol relaying - Part 1: Subnetwork-independent requirements.*

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3 Definitions

The terms used in this part of ISO/IEC ISP 10614 are defined in the referenced base standards (see clause 2).

4 Abbreviations

Abbreviations used in this part of ISO/IEC ISP 10614 are defined in the referenced base standards (see clause 2).

5 Requirements

5.1 Static conformance requirements

5.1.1 Overall requirements

An implementation conforming to this part of ISO/IEC ISP 10614 shall meet the requirements for ISO/IEC 8802-3 in clause 5.1.2 below. It shall implement all the features identified as requirements for ISO/IEC 8802-3 in the ISPICS requirements list in annex A.

5.1.2 ISO/IEC 8802-3

5.1.2.1 General requirements

The implementation shall meet either the requirements for 10BASE5 specified in 5.1.2.2 below, or the requirements for 10BASE2 specified in 5.1.2.3 below, or both.

5.1.2.2 Requirements for 10BASE5

The implementation shall:

a) support the functions of the Media Access Control protocol defined in ISO/IEC 8802-3 for 10BASE5;

b) meet the Physical Layer requirements defined in ISO/IEC 8802-3, clause 7: Physical Signalling (PLS) and Attachment Unit Interface (AUI) Specifications;

c) if an AUI cable is supplied, meet the requirements specified in ISO/IEC 8802-3, clause 7;

d) if an MAU is supplied, meet the requirements specified in ISO/IEC 8802-3, subclauses 8.1, 8.2, 8.3, 8.5 and 8.7; if an MAU is not supplied, then an externally accessible AUI shall be supplied;

e) if components of the media are supplied, meet the requirements specified in ISO/IEC 8802-3, subclauses 8.4, 8.5, 8.6 and 8.7;

f) if repeaters are supplied, meet the requirements specified in ISO/IEC 8802-3, clause 9.

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5.1.2.3 Requirements for 10BASE2

The implementation shall:

a) support the functions of the Media Access Control protocol defined in ISO/IEC 8802-3 for 10BASE2;

b) meet the Physical Layer requirements defined in ISO/IEC 8802-3, clause 7: Physical Signalling (PLS) and Attachment Unit Interface (AUI) Specifications;

c) if an AUI cable is supplied, meet the requirements specified in ISO/IEC 8802-3, clause 7;

d) if an MAU is supplied, meet the requirements specified in ISO/IEC 8802-3, subclauses 10.1, 10.3, 10.4, 10.6 and 10.8; if an MAU is not supplied, then an externally accessible AUI shall be supplied;

e) if components of the media are supplied, meet the requirements specified in ISO/IEC 8802-3, subclauses 10.5, 10.6, 10.7 and 10.8;

f) if repeaters are supplied, meet the requirements specified in ISO/IEC 8802-3, clause 9.

5.2 Dynamic conformance requirements

An implementation conforming to this part of ISO/IEC ISP 10614 shall carry out the supported ISO/IEC 8802-3 functions in accordance with the procedures specified in ISO/IEC 8802-3. It shall behave in accordance with the requirements of the ISPICS requirements list in annex A.

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Annex A
(normative)

ISPICS requirements list

A.1 Introduction

ISO/IEC TR 10000-1 identifies three items to be included in an ISPICS requirements list. These are:

- general options of the profile;
- list of standards selected in the profile;
- constraints on the allowable answers in the PICS proforma of each such standard.

The first two items relate to the profile as a whole, and so are included only in those parts of ISO/IEC ISP 10614 which are specific to individual profiles. Each part of ISO/IEC ISP 10614 contains the identification of those PICS proforma constraints which are within its scope.

ISO/IEC TR 10000-1 indicates that an ISPICS proforma may consist either of a simple list of constraints or of amended copies of the base standard PICS proforma. In this part of ISO/IEC ISP 10614 the former method is used.

A.2 Notation and conventions

The notation and conventions used in this IPRL are the same as those defined for the IPRL in part 1 of ISO/IEC ISP 10614.

A.3 IPRL for ISO/IEC 8802-3

Since the base standard does not itself have a stable PICS proforma, interim base standard PICS proforma information is provided in clause B.2 of this part of ISO/IEC ISP 10614. This part of ISO/IEC ISP 10614 imposes the following additional constrains:

Functions and interfaces		
Base Item	**Description**	**Constraint**
10BASE5	10BASE5	o.1
10BASE2	10BASE2	o.1
MAUs	Is an MAU supplied	AUIa:o ¬AUIa:m
AUIa	Is an AUI externally accessible	MAUs:o ¬MAUs:m

Definition of selectable or mutually exclusive items:

o.1 selectable option - at least one shall be selected (at least one of the media options shall be selected)

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Annex B[1]
(normative)

Assumed base standard PICS proformas

B.1 Introduction

This annex contains the PICS proforma information assumed for those base standards which do not already have an internationally stable PICS proforma.

B.2 ISO/IEC 8802-3

B.2.1 Introduction

Where base standard PICS proformas are not adequate for profile definition purposes, ISO/IEC TR 10000-1 provides for the necessary material to be supplied within the profile definition either by supplying the specific questions needed in addition to whatever may be available, or by supplying a complete PICS proforma. In the case of ISO/IEC 8802-3, the constrains imposed by this part of ISO/IEC ISP 10614 relate only to a very small portion of the total standard, and therefore, in this clause, the approach of supplying only the relevant questions, rather then the whole proforma, has been adopted.

B.2.2 Notation and conventions

The status of PICS proforma items is indicated by the use of the symbols "M", "O", "O.*n*" and "X", which have the same significance as the corresponding lower case symbols defined in ISO/IEC ISP 10614-1, clause A.2, but are used in upper case in line with common conventions for base standard PICS information in profile definitions. The symbols "-" and "<item>:<status>" are also used with the same meaning as in ISO/IEC ISP 10614-1, subclause A.2.2.

B.2.3 Instructions for completion

The PICS proforma consists of a number of tables of labelled items, with information on the requirements applicable to each item (e.g. whether support is mandatory, what ranges of values are permitted, etc., as appropriate). Where necessary to clarify the meaning of an item, references to the relevant clauses of base standard are given. Note that some items listed may be applicable in more than one context (for example, the requirements for support of a PDU field may differ according to whether the PDU is transmitted or received). In this case, the requirements for each context are identified separately. The tables also contain columns in which support for each item provided by the implementation is to be recorded. Again, where items cover more than one context, columns for recording support are provided for each context. These columns are to be completed as follows:

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1) Copyright release for PICS proformas

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

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a) In each column headed "Support", an indication is to be given of whether the item is supported, by simply marking the appropriate box

Yes to mean yes, it is supported
No to mean no, it is not supported
N/A to indicate that the item is not applicable. (Some items are indicated as only conditionally applicable, and N/A is to be entered when the identified conditions are not satisfied.)

b) Columns for supported values or ranges of values are to be completed by recording the values and ranges supported.

c) Additional information may be attached to the completed proforma to assist in interpretation of the PICS. This should take the form of a numbered list of items of information. Where there is such an item of additional information associated with a PICS proforma item, a reference to it should be included in the columns of the PICS proforma in which support of the item is recorded. This reference should be of the form "An", where "n" is the number of the item of additional information referenced.

d) If for some reason the requirements indicated in the PICS proforma are not met by the implementation (e.g. if a mandatory capability is not implemented), an explanation should be given. Such explanations should be in the form of a numbered list attached to the completed PICS proforma, and referenced from the relevant item in a manner similar to that described above for additional information, but using the notation "Xn" instead of "An".

e) For administrative purposes, a cover page is to be attached to the completed PICS proforma identifying the implementation and the system in which it resides, the supplier of the system, information on whom to contact if there are any queries concerning the content of the PICS, and the relationship of the PICS to the System Conformance Statement for the system.

B.2.4 Functions and interfaces

Item	Function	References	Status	Support	
10BASE5	10BASE5	8	O	Yes □	No □
10BASE2	10BASE2	10	O	Yes □	No □
MAUs	Is an MAU supplied	8, 10	O	Yes □	No □
AUIa	Is an AUI externally accessible	7	O	Yes □	No □

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Descriptors: data processing, information interchange, network interconnection, local area networks, data transmission, communication procedure, profiles, protocols.

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