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INTERNATIONAL STANDARDIZED PROFILE

ISO/IEC ISP 10614-4

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1995-04-15

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

Part 4:
PSDN subnetwork-dependent, media-dependent requirements for virtual calls over a permanent access

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

Partie 4: Prescriptions dépendantes du sous-réseau du PSDN, dépendantes des supports, pour appels virtuels sur accès permanent

Reference number
ISO/IEC ISP 10614-4:1995(E)

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Foreword

ISO (the International Organization for Standardization) and IEC (the International Electrotechnical Commission) 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 10614-4 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*

Annex A forms an integral part of this part of ISO/IEC ISP 10614. Annex B is for information only.

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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 4. 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 4:
PSDN subnetwork-dependent, media-dependent requirements for virtual calls over a permanent access

1 Scope

This part of ISO/IEC ISP 10614 specifies subnetwork-dependent, media-dependent requirements applicable to an interworking unit using virtual calls over a permanent access to a PSDN. 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 communications using PSDN subnetworks with permanent access on which virtual calls are used.

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 2110 : 1989, *Information technology - Data communication - 25-pole DTE/DCE interface connector and contact number assignments.*

ISO/IEC 2593 : 1993, *Information technology - Telecommunications and information exchange between systems - 34-pole DTE/DCE interface connector mateability dimensions and contact number assignments.*

ISO 4902 : 1989, *Information technology - Data communication - 37-pole DTE/DCE interface connector and contact number assignments.*

ISO 4903 : 1989, *Information technology - Data communication - 15-pole DTE/DCE interface connector and contact number assignments.*

ISO 7776 : 1986, *Information processing systems - Data communication - High-level data link control procedures - Description of the X.25 LAPB-compatible DTE data link procedures.*

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ISO 7776 : 1986/Cor.1 : 1989, *Information processing systems - Data communication - High-level data link control procedures - Description of the X.25 LAPB-compatible DTE data link procedures - Technical Corrigendum 1.*

ISO 7776 : 1986/Cor.2 : 1989, *Information processing systems - Data communication - High-level data link control procedures - Description of the X.25 LAPB-compatible DTE data link procedures - Technical Corrigendum 2.*

ISO 7776 : 1986/Cor.3 : 1991, *Information processing systems - Data communication - High-level data link control procedures - Description of the X.25 LAPB-compatible DTE data link procedures - Technical Corrigendum 3.*

NOTE - These Technical Corrigenda to ISO 7776 are to apply throughout in this part of ISO/IEC ISP 10614, wherever ISO 7776 itself is referenced.

ISO 7776 : 1986/Amd.1 : 1992, *Information processing systems - Data communication - High-level data link control procedures - Description of the X.25 LAPB-compatible DTE data link procedures - Amendment 1: Conformance requirements.*

ISO/IEC 8208 : 1990, *Information technology - Data communications - X.25 Packet Layer Protocol for Data Terminal Equipment.*

ISO/IEC 8208 : 1990/Amd.3 : 1991, *Information technology - Data communications - X.25 Packet Layer Protocol for Data Terminal Equipment - Amendment 3: Conformance requirements.*

ISO/IEC 8208 : 1990/Amd.3 : 1991/Cor.1 : 1993, *Information technology - Data communications - X.25 Packet Layer Protocol for Data Terminal Equipment - Amendment 3: Conformance requirements - Technical Corrigendum 1.*

ITU-T Rec. X.25 : 1993, *Interface between data terminal equipment (DTE) and data circuit terminating equipment (DCE) for terminals operating in the packet mode and connected to public data networks by dedicated circuit.*

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 10609-9 : 1992, *Information technology - International Standardized Profiles TB, TC, TD and TE - Connection-mode Transport Service over connection-mode Network Service - Part 9: Subnetwork-type dependent requirements for Network Layer, Data Link Layer and Physical Layer concerning permanent access to a packet switched data network using virtual call.*

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

3 Definitions

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

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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:

a) meet the requirements for ISO/IEC 8208 in subclause 5.1.2 below;

b) meet the requirements for ISO 7776 in the subclause 5.1.3 below;

c) meet the requirements for the physical layer in subclause 5.1.4 below;

d) support all the features identified as requirements in the ISPICS requirements list in annex A.

5.1.2 ISO/IEC 8208

The implementation shall:

a) implement operation in a DTE/DCE environment.

5.1.3 ISO 7776

The implementation shall:

a) support the functions required by ISO 7776;

b) support basic (modulo 8) operation;

c) support the parameters as depicted in table 1;

Table 1 - LAPB parameter values

Parameter	Value
Maximum number of bits in an I frame (N1)	2104
Maximum number of outstanding I frames (k)	7
Maximum number of transmissions (N2)	10

NOTE - Parameter N1 may take a value greater than 2104 depending on packet size.

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d) be capable of setting T1 to a value which exceeds by at least 1.6 seconds the time taken to transmit 3 frames whose length is the value of N1.

5.1.4 Physical layer

The implementation shall support the physical access by any of:

a) an X.21 interface as specified in section 1.1 of ITU-T Rec. X.25;

b) an X.21*bis* interface as specified in section 1.2 of ITU-T Rec. X.25;

c) a V-series interface as specified in section 1.3 of ITU-T Rec. X.25.

Table 2 identifies connectors which are appropriate for X.21 and X.21*bis* interfaces for various data signalling rates.

Table 2 - Connectors

Data signalling rate bit/s	X.21*bis*	X.21
2400	ISO 2110	ISO 4903
4800	ISO 2110	ISO 4903
9600	ISO 2110	ISO 4903
19200	ISO 2110	ISO 4903
48000	ISO/IEC 2593, ISO 4902	ISO 4903
64000	ISO 4902	ISO 4903

5.2 Dynamic conformance requirements

5.2.1 Overall requirements

An implementation conforming to this part of ISO/IEC ISP 10614 shall:

a) meet the requirements for ISO 7776 in the subclause 5.2.2 below;

b) behave in accordance with the requirements of the ISPICS requirements list in annex A.

5.2.2 ISO 7776

The implementation shall:

a) carry out the supported ISO 7776 functions in accordance with the procedures specified in ISO 7776;

b) use only the single link procedures.

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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 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 in ISO/IEC ISP 10614-1, clause A.2.

A.3 IPRL for ISO/IEC 8208

The relevant base standard PICS proforma is the PICS proforma given in annex C of ISO/IEC 8208/Amd.3. This part of ISO/IEC ISP 10614 imposes the following additional constraints:

C.5 General DTE Characteristics

Base Item	Description	Constraint
Et/t	- DTE/DTE in fixed role as DTE	x
Et/c	- DTE/DTE in fixed role as DCE	x
Et/d	- DTE/DTE with dynamic role selection	x

A.4 IPRL for ISO 7776

The relevant base standard PICS proforma is the PICS proforma given in annex A of ISO 7776/Amd.1.

The IPRL constraints for ISO 7776 imposed by this part of ISO/IEC ISP 10614 are the same as those listed in the IPRL for profiles TB1111 and TB1121 specified in ISO/IEC ISP 10609. Therefore, a conforming implementation shall meet the constraints specified in the Data Link Layer ISPICS requirements list in ISO/IEC ISP 10609-9, clause A.3.

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Annex B
(informative)

Recommendations

B.1 Introduction

The information in this annex is tutorial in nature. It does not constitute a normative part of this part of ISO/IEC ISP 10614. In the absence of specific applications making alternative behaviour appropriate, it is recommended that the features described in this annex are implemented.

B.2 ISO 7776

For greater efficiency at high data-signalling rates, the T1 timer values in table B.1 below are recommended.

Table B.1 - Recommended T1 values

Data signalling rate bit/s	Packets of up to 1024 octets of user data	Packets of up to 256 octets of user data
2400	10 seconds	5 seconds
4800-9600	3 seconds	1 second
19200	1 second	0.5 seconds
48000-64000	0.5 seconds	0.4 seconds

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