INTERNATIONAL STANDARDIZED PROFILE

ISO/IEC ISP 10613-2

First edition
1994-05-15

Information technology — International Standardized Profile RA — Relaying the Connectionless-mode Network Service —

Part 2:
LAN subnetwork-dependent, media-independent requirements

Technologies de l'information — Profil normalisé international RA — Relais de service de réseau en mode sans connexion —

Partie 2: Spécifications indépendantes du milieu, dépendantes du sous-réseau LAN

Reference number
ISO/IEC ISP 10613-2:1994(E)

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Foreword

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

In the field of information technology, ISO and IEC have established a joint technical committee, ISO/IEC JTC1. In addition to developing International Standards, ISO/IEC JTC1 has created a Special Group on Functional Standardization for the elaboration 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 a 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 10613-2 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 10613 consists of several parts, under the general title *Information technology - International Standardized Profile RA - Relaying the Connectionless-mode Network Service:*

- *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: FDDI LAN subnetwork-dependent, media-dependent requirements*
- *Part 5: Definition of profile RA51.51, relaying the Connectionless-mode Network Service between CSMA/CD LAN subnetworks*
- *Part 6:Definition of profile RA51.54, relaying the Connectionless-mode Network Service between CSMA/CD LAN subnetworks and FDDI LAN subnetworks*
- *Part 7: PSDN subnetwork-dependent, media-dependent requirements for virtual calls over a permanent access*
- *Part 8: Definition of profile RA51.1111, relaying the Connectionless-mode Network Service between CSMA/CD LAN subnetworks and PSDNs using virtual calls over a PSTN leased line permanent access*

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- *Part 9: Definition of profile RA51.1121, relaying the Connectionless-mode Network Service between CSMA/CD LAN subnetworks and PSDNs using virtual calls over a digital data circuit/CSDN leased line permanent access*

- *Part 10: Token Ring LAN subnetwork-dependent, media-dependent requirements*

- *Part 11: Definition of profile RA51.53, relaying the Connectionless-mode Network Service between CSMA/CD LAN subnetworks and Token Ring LAN subnetworks*

- *Part 12: Definition of profile RA53.53, relaying the Connectionless-mode Network Service between Token Ring LAN subnetworks*

- *Part 13: Definition of profile RA53.54, relaying the Connectionless-mode Network Service between Token Ring LAN subnetworks and FDDI LAN subnetworks*

- *Part 14: Definition of profile RA54.54, relaying the Connectionless-mode Network Service between FDDI LAN subnetworks*

- *Part 15: Definition of profile RA53.1111, relaying the Connectionless-mode Network Service between Token Ring LAN subnetworks and PSDNs using virtual calls over a PSTN leased line permanent access*

- *Part 16: Definition of profile RA53.1121, relaying the Connectionless-mode Network Service between Token Ring LAN subnetworks and PSDNs using virtual calls over a digital data circuit/CSDN leased line permanent access*

- *Part 17: Definition of profile RA54.1111, relaying the Connectionless-mode Network Service between FDDI LAN subnetworks and PSDNs using virtual calls over a PSTN leased line permanent access*

- *Part 18: Definition of profile RA54.1121, relaying the Connectionless-mode Network Service between FDDI 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 10613. 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.

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 basis 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 tests. 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 10613 consists of several parts of which this is part 2. ISO/IEC ISP 10613-1 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 10613 which identifies the specific requirements of that profile, making reference to appropriate material from part 1 and from the subnetwork dependent parts of ISO/IEC ISP 10613.

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Information technology - International Standardized Profile RA - Relaying the Connectionless-mode Network Service -

Part 2:
LAN subnetwork-dependent, media-independent requirements

1 Scope

This International Standardized Profile is applicable to interworking units concerned with operating in the Open Systems Interconnection (OSI) environment. It specifies a combination of OSI base standards that collectively provide a Network Relay function for the connectionless-mode Network Service.

This part of ISO/IEC ISP 10613 specifies subnetwork-type dependent requirements applicable to an interworking unit attached to a LAN and using the ISO 8802-2 LLC type 1 protocol, irrespective of the LAN medium. 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 10613 applies only to communication over those subnetworks which are LANs using ISO 8802-2 LLC type 1.

2 Normative references

The following documents contain provisions which, through reference in this text, constitute provisions of this International Standardized Profile. At the time of publication, the editions indicated were valid. All documents are subject to revision, and parties to agreements based on this International Standardized Profile are warned against automatically applying any more recent editions of the documents listed below, since the nature of references made by ISPs to these 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 CCITT maintains published editions of its current Recommendations.

ISO 8473:1988, *Information processing systems - Data communications - Protocol for providing the connectionless-mode Network service.*

ISO 8473:1988/Corr.1:1992, *Information processing systems - Data communications - Protocol for providing the connectionless-mode Network service - Technical Corrigendum 1.*

NOTE - This Technical Corrigendum to ISO 8473 is to apply throughout in this part of ISO/IEC ISP 10613, wherever ISO 8473 itself is referenced.

ISO 8802-2:1989, *Information processing systems - Local area networks - Part 2: Logical link control.*

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ISO 9542:1988, *Information processing systems - Telecommunications and information exchange between systems - End system to Intermediate system routeing exchange protocol for use in conjunction with the Protocol for providing the connectionless-mode network service (ISO 8473).*

ISO 9542:1988/Corr.1:1991, *Information processing systems - Telecommunications and information exchange between systems - End system to Intermediate system routeing exchange protocol for use in conjunction with the Protocol for providing the connectionless-mode network service (ISO 8473) - Technical Corrigendum 1.*

NOTE - This Technical Corrigendum to ISO 9542 is to apply throughout in this part of ISO/IEC ISP 10613, wherever ISO 9542 itself is referenced.

ISO/IEC TR 9577:1990, *Information technology - Telecommunications and information exchange between systems - Protocol identification in the network layer.*

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

ISO/IEC TR 10000-2:1992, *Information technology - Framework and taxonomy of International Standardized Profiles - Part 2: Taxonomy of OSI Profiles.*

ISO/IEC ISP 10608-2:1992, *Information technology - International Standardized Profile TAnnnn - Connection-mode Transport Service over Connectionless-mode Network Service - Part 2: TA51 profile including subnetwork-dependent requirements for CSMA/CD Local Area Networks (LANs).*

ISO/IEC ISP 10613-1:1994, *Information technology - International Standardized Profile RA - Relaying the Connectionless-mode Network Service - Part 1: Subnetwork-independent requirements.*

3 Definitions

All the terms used in this part of ISO/IEC ISP 10613 are defined in the documents that are referenced in clause 2.

4 Abbreviations

All abbreviations, including acronyms, are used in this part of ISO/IEC ISP 10613 as defined in the documents referenced in clause 2.

5 Requirements

5.1 Introduction

The requirements in this clause apply to all interworking units within the scope of this part of ISO/IEC ISP 10613 without regard to the type of medium of the LAN to which they are attached. Additional requirements apply to interworking units according to the types of medium to which they are attached; these requirements are specified in other parts of ISO/IEC ISP 10613.

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5.2 Static Conformance Requirements

5.2.1 Overall Requirements

An implementation conforming to this part of ISO/IEC ISP 10613 shall meet the requirements for ISO 8473 in 5.2.2 below, the requirements for ISO 9542 in 5.2.3 below, and the requirements for ISO 8802-2 in 5.2.4 below. It shall implement all the features identified as requirements in the ISPICS Requirements List in annex A.

5.2.2 ISO 8473

The implementation shall meet the requirements of clause 8 of ISO 8473 for provision of the underlying service by means of the subnetwork-dependent convergence functions used with ISO 8802-2 subnetworks.

5.2.3 ISO 9542

The implementation shall:

a) implement redirection information;

b) implement configuration information;

NOTE - Nevertheless, as specified in ISO/IEC ISP 10613-1, a means to disable its use is required.

c) if the Configuration Notification function is implemented, provide a means to disable its use.

5.2.4 ISO 8802-2

The implementation shall:

a) implement the functions required by ISO 8802-2 for the support of the Logical Link Control Type 1 protocol;

b) discard received UI PDUs which have the P bit set to one;

c) use the DSAP value of (in binary) 0111 1111, and the SSAP value of (in binary) Z111 1111, to identify ISO/IEC TR 9577, which in turn in the context of this profile provides for the operation of the ISO 8473 and ISO 9542 protocols;

d) be capable of transmitting LLC PDU lengths up to at least 515 octets, including the LLC header.

5.3 Dynamic Conformance Requi ements

An implementation conforming to this part of ISO/IEC ISP 10613 shall carry out the supported ISO 8802-2 functions in accordance with the procedures specified in ISO 8802-2. 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 base standards selected in the profile;
- constraints on the allowable answers in the PICS proforma of each such base standard.

The first two items relate to the profile as a whole, and so are included only in those parts of ISO/IEC ISP 10613 which are specific to individual profiles. But each part of ISO/IEC ISP 10613 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 10613 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 ISO/IEC ISP 10613-1.

A.3 IPRL for ISO 8473

Since the base standard does not itself have a PICS proforma, interim base standard PICS proforma information for an intermediate system is provided in annex B of ISO/IEC ISP 10613-1. When a standardized base standard PICS proforma is available, this part of ISO/IEC ISP 10613 will be revised to refer to it.

This part of ISO/IEC ISP 10613 imposes the following constraints:

SNDCF Major Capabilities:

Base Item	Capability	Constraint
S802	SNDCF for ISO 8802-2	m

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A.4 IPRL for ISO 9542

The relevant base standard PICS proforma is the PICS proforma given in annex A of ISO 9542 for intermediate systems. This part of ISO/IEC ISP 10613 imposes the following constraints:

Protocol Function - Intermediate System:

Base Item	Protocol Function	Constraint
CI	Is configuration information supported	md
RI	Is redirection information supported	mm
CfNt	Configuration Notification	od
RqRd	Request Redirect	mm

PDUs - Intermediate System:

Base Item	PDU	Constraint
ISH-s	<s> Intermediate System Hello	md
RD-s	<s> Redirect	m

PDU fields - Intermediate System:

Base Item	Function	Constraint
SA-r	<r> Source Address, one or more NSAPs	m
DA-s	<s> Destination Address	m
BSNPA-s	<s> Subnetwork Address	m

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Parameter Ranges - Intermediate System:

Base Item	Parameter	Constraint
HTv	Holding Time Field	For RD PDUs, this field shall be able to be set at least to values that are within ±5% of each of the following: 5 s 30 s 65 s 105 s 900 s For ISH PDUs, this field shall be able to be set to a value which is at least 5% greater than twice the value of the Configuration Timer being used, and at most 10% greater than it.
CTv	Configuration Timer value	The Configuration Timer shall be able to be set at least to values that are within ±5% of each of the following: 30 s 105 s 900 s 3600 s 28000 s

NOTE - As stated in annex C of ISO/IEC ISP 10613-1, it is recommended that the timers should be configurable.

A.5 IPRL for ISO 8802-2

With respect to ISO 8802-2, the IPRL constraints are the same as those listed in the IPRL for profile TA51 specified in ISO/IEC ISP 10608. Therefore a conforming implementation shall meet the constraints specified in the IPRL for ISO 8802-2 in ISO/IEC ISP 10608-2.

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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 section of this part of ISO/IEC ISP 10613.

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 9542 Recommendations

To provide the ability to help newly-operational end systems discover configuration information quickly, the Configuration Notification function should be implemented.

NOTE - However, it is a requirement of the main body of this part of ISO/IEC ISP 10613 that it shall be possible to disable use of this function.

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ICS 35.100.00

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