INTERNATIONAL STANDARDIZED PROFILE

ISO/IEC ISP 12067-1

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Information technology — International Standardized Profile RB — Relaying the connection-mode Network Service —

Part 1:
Subnetwork-independent requirements

Technologies de l'information — Profil normalisé international RB — Relais du service de réseau en mode connexion —

Partie 1: Prescriptions indépendantes du sous-réseau

Reference number
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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. In addition to developing International Standards, ISO/IEC JTC 1 has created a Special Group on Functional Standardization 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 12067-1 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 12067 consists of the following parts, under the general title *Information technology — International Standardized Profile RB — Relaying the connection-mode Network Service*:

— *Part 1: Subnetwork-independent requirements*

— *Part 2: LAN Subnetwork-dependent media-independent requirements*

— *Part 3: PSDN Subnetwork-dependent media-dependent requirements for virtual calls over a permanent access*

— *Part 4: Definition of profile RB51.1111, relaying the connection-mode Network Service between CSMA/CD LAN subnetworks and PSDNs using virtual calls over a PSTN leased line permanent acess*

— *Part 5: Definition of profile RB51.1121, relaying the connection-mode Network Service between CSMA/CD LAN subnetworks and PSDNs using virtual calls over a digital data circuit/CSDN leased line permanent acess*

Annex A forms an integral part of this part of ISO/IEC ISP 12067.

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 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 realisation of this goal.

ISO/IEC ISP 12067 consists of several parts, of which this is Part 1. ISO/IEC ISP 12067-1 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 12067 which identifies the specific requirements of that profile, making reference to appropriate material from part 1 and from the subnetwork-dependent parts.

Information technology — International Standardized Profile RB — Relaying the connection-mode Network Service —

Part 1:
Subnetwork-independent requirements

1 Scope

ISO/IEC ISP 12067 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 relay function for the connection-mode Network Service.

This part of ISO/IEC ISP 12067 specifies requirements which are applicable to interworking units operating the connection-mode Network Service regardless of the types of subnetworks to which they are attached.

2 Normative references

The following documents contain provisions which, through reference in this text, constitute provisions of this part of ISO/IEC ISP 12067. 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 12067 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 8208 : 1995, *Information technology - Data communications - X.25 Packet Layer Protocol for Data Terminal Equipment*

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

ISO/IEC TR 10000-1 : 1995, *Information technology - Framework and taxonomy of International Standardized Profiles - Part 1: General principles and documentation framework*

ISO/IEC TR 10000-2 : 1995, *Information technology - Framework and taxonomy of International Standardized Profiles - Part 2: Principles and Taxonomy for OSI profiles*

ISO/IEC 10177 : 1993, *Information technology - Telecommunications and information exchange between systems - Provision of the connection-mode Network internal layer service by intermediate systems using ISO/IEC 8208, the X.25 Packet Layer Protocol*

3 Definitions

The terms used in this part of ISO/IEC ISP 12067 are defined in the referenced base standards (see clause 2).

4 Abbreviations

Abbreviations used in this part of ISO/IEC ISP 12067 are defined in the referenced base standards (see clause 2).

5 Requirements

5.1 Introduction

The requirements in this clause apply to all interworking units within the scope of ISO/IEC ISP 12067, and are to be implemented for all subnetwork attachments to which ISO/IEC ISP 12067 applies. Additional specific requirements apply with respect to attachments to certain types of subnetwork; these requirements are specified in subsequent parts of ISO/IEC ISP 12067.

5.2 Static conformance requirements

5.2.1 Overall requirements

An implementation conforming to this part of ISO/IEC ISP 12067 shall:

a) meet the requirements for ISO/IEC 10177 in the subclause 5.2.2 below;

b) meet the requirements for ISO/IEC 8208 in the subclause 5.2.3 below;

c) support all the features identified as requirements in the Profile Requirements List in annex A.

5.2.2 ISO/IEC 10177

The implementation shall:

a) meet the static conformance requirements specified in subclause 6.1 of ISO/IEC 10177;

b) support the following capabilities identified in Table 1 of ISO/IEC 10177:
- use of VC service;
- NC establishment, outgoing;
- NC establishment, incoming;

c) not support the following capabilities identified in Table 1 of ISO/IEC 10177:
- expedited data transfer;
- receipt confirmation.

5.2.3 ISO/IEC 8208

The implementation shall:

a) meet the requirements for the X.25 Packet Layer Protocol of ISO/IEC 8208, as modified by ISO/IEC 10177 in subclause 6.2.1;

b) meet the static conformance requirements specified in clause 21 of ISO/IEC 8208;

c) support the following option from subclause 21.1.2 of ISO/IEC 8208:
   - transmit RR packets.

5.3 Dynamic conformance requirements

An implementation conforming to this part of ISO/IEC ISP 12067 shall:

a) conform to the dynamic conformance requirements specified in subclause 6.3 of ISO/IEC 10177;

b) conform to the dynamic conformance requirements specified in clause 21 of ISO/IEC 8208;

c) behave in accordance with the requirements of the Profile Requirements List in annex A.

Annex A

(normative)

Profile Requirements List

A.1 Introduction

ISO/IEC 9646-7 requires that a Profile Requirements List is provided for each profile and captures:

a) the general options of the profile as a whole;

b) a list of specifications selected and combined in the profile; and references to the related ICS proforma;

c) for each of these referenced base specifications, a section of the profile RL expressing the restrictions upon allowed support answers in the corresponding PICS proforma and information object ICS proforma. This section of the profile RL is derived from the ICS proformas of the relevant base specifications, indicating the changes of status values necessary to express the profile requirements.

The first two items relate to the profile as a whole, and so are included only in those parts of ISO/IEC ISP 12067 which are specific to individual profiles. But each part of ISO/IEC ISP 12067 contains the identification of those PICS proforma constraints which are within its scope.

ISO/IEC 9646-7 indicates that a profile RL 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 12067 the former method is used.

A.2 Notation and conventions

In many cases the constraints imposed by the profile RL are expressed in the form of symbols indicating the status in the context of this part of ISO/IEC ISP 12067 of those base standard PICS proforma items to which the constraints apply. The symbols used to identify constraints on the capabilities to be supported by a conforming implementation are defined in ISO/IEC 9646-7.

It should be noted that, in the context of received PDUs or fields or parameters of received PDUs, the capability to support them is the ability to interpret the significance of the PDU or field and act upon it in accordance with the dynamic conformance requirements of the protocol (which may in some cases mean generating an error report). PDUs or fields which are not supported are those whose receipt is ignored and have no impact on the protocol operation.

In some cases it is necessary to specify constraints not only on the capabilities which are implemented, but on whether they are used. When this is necessary, an additional profile specific ICS proforma is used to specify such additional requirements.

A.3 Profile RL for ISO/IEC 10177

The relevant base standard PICS proforma is the PICS proforma given in annex A of ISO/IEC 10177. This part of ISO/IEC ISP 12067 imposes the following additional constraints:

A.5 NC establishment and release		
Base Item	Description	Constraint
VI	NC establishment incoming on VC	m
VO	NC establishment outgoing on VC	m

A.6 Data transfer phase		
Base Item	Description	Constraint
ED	expedited data transfer	x
RC	receipt confirmation	x

A.7 Mapping-protocol violations		
Base Item	Description	Constraint
MVe1	INTERRUPT when non-use of ED negotiated NC release	m
MVd1	D-bit when non-use of RC negotiated NC release	m
MVq1	Q-bit set to 1 NC release	o.1
MVq2	Q-bit set to 1 NC reset	o.1
MVz1	Zero-length M-bit sequence NC release	o.2
MVz2	Zero-length M-bit sequence NC reset	o.2
MVz3	Zero-length M-bit sequence ignore	o.2

A.4 Profile RL for ISO/IEC 8208

The relevant base standard PICS proforma is the PICS proforma given in annex B of ISO/IEC 8208 modified by annex B of ISO/IEC 10177. This part of ISO/IEC ISP 12067 imposes the following additional constraints:

B.6 Procedures, packet types and packet formats B.6.4 Call setup and clearing B.6.4.2 Call clearing		
Base Item	Description	Constraint
C2b	Call clearing to reject an incoming VC	m

B.6 Procedures, packet types and packet formats B.6.8 Normal data transfer and flow control B.6.8.1 Sending data		
Base Item	Description	Constraint
DS5b	Sending Q = 1 in DATA packets	x