INTERNATIONAL STANDARDIZED PROFILE

ISO/IEC ISP 10609-14

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Information technology — International Standardized Profiles TB, TC, TD and TE — Connection-mode Transport Service over connection-mode Network Service —

Part 14:

Definition of profile TC53, provision of the OSI connection-mode Transport Service using the OSI connection-mode Network Service in an End System attached to a Token Ring LAN

Technologies de l'information — Profils normalisés internationaux TB, TC, TD et TE — Service de transport en mode connexion sur service de réseau en mode connexion —

Partie 14: Définition du profil TC53, fourniture du service de transport en mode connexion OSI utilisant le service de réseau en mode connexion OSI dans un système final attaché à un RLE à anneau à jeton

Reference number
ISO/IEC ISP 10609-14:1994(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.

S-liaison may be established with JTC 1/SGFS by specialized organizations involved in the work of functional standardization. This part of ISO/IEC ISP 10609 was prepared with the collaboration of the following S-liaisons:

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

ISO/IEC ISP 10609 consists of several parts, under the general title *Information technology - International Standardized Profiles TB, TC, TD and TE - Connection-mode Transport Service over connection-mode Network Service:*

- *Part 1: Subnetwork-type independent requirements for Group TB*
- *Part 2: Subnetwork-type independent requirements for Group TC*
- *Part 3: Subnetwork-type independent requirements for Group TD*
- *Part 4: Subnetwork-type independent requirements for Group TE*
- *Part 5: Definition of profiles TB1111/TB1121*
- *Part 6: Definition of profiles TC1111/TC1121*
- *Part 7: Definition of profiles TD1111/TD1121*
- *Part 8: Definition of profiles TE1111/TE1121*
- *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 calls*

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- *Part 10: LAN subnetwork-dependent, media-independent requirements*
- *Part 11: CSMA/CD LAN subnetwork-dependent, media-dependent requirements*
- *Part 12: Definition of profile TC51, provision of the OSI connection-mode Transport Service using the OSI connection-mode Network Service in an End System attached to a CSMA/CD LAN*
- *Part 14: Definition of profile TC53, provision of the OSI connection-mode Transport Service using the OSI connection-mode Network Service in an End System attached to a Token Ring LAN*

This part of ISO/IEC ISP 10609 contains two annexes. Annex A is normative, annex B is informative.

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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 10609 consists of several parts, of which this is part 14. Parts 1 to 4 of ISO/IEC ISP 10609 specify profile requirements that are subnetwork-independent, for each of the transport groups TB, TC, TD and TE, respectively. 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 10609 which identifies the specific requirements of that profile, making reference to appropriate material from the relevant subnetwork-independent and subnetwork-dependent parts. This part identifies the specific requirements for profile TC53.

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Information technology — International Standardized Profiles TB, TC, TD and TE — Connection-mode Transport Service over connection-mode Network Service —

Part 14:

Definition of profile TC53, provision of the OSI connection-mode Transport Service using the OSI connection-mode Network Service in an End System attached to a Token Ring LAN

1 Scope

1.1 General

This International Standardized Profile is applicable to End Systems concerned with operating in the Open Systems Interconnection (OSI) environment. It specifies a combination of OSI standards, which collectively provide the connection-mode Transport Service using the connection-mode Network Service.

This part of ISO/IEC ISP 10609 defines the TC53 profile which is applicable to the provision of the OSI connection-mode Transport Service using the OSI connection-mode Network Service in an End System attached to a Token Ring LAN subnetwork.

1.2 Position within the taxonomy

The taxonomy of profiles is defined in ISO/IEC TR 10000-2. This part of ISO/IEC ISP 10609 defines the profile:

TC53 Connection-mode Transport Service over connection-mode Network Service over Token Ring LAN subnetworks

1.3 Scenario

Figure 1 illustrates the configurations of systems to which the TC53 profile is applicable.

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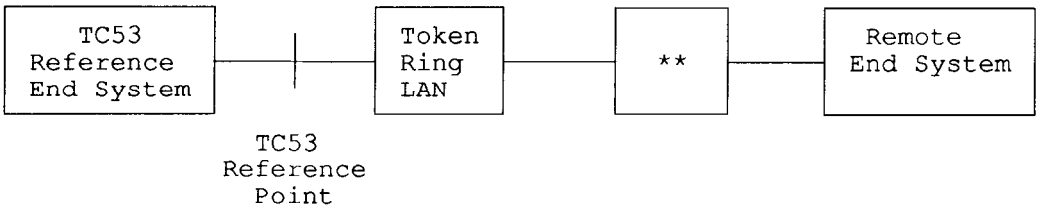

** other compatible network equipment covered by ISO/IEC TR 10000
- OSI relays
- OSI end systems
- other equipment

Figure 1 - Scenario of applicability of the TC53 profile

The TC53 profile specifies the required functions from the supporting protocol stack shown in figure 2 below.

Transport Layer	ISO/IEC 8073	
Network Layer	ISO/IEC 8878	
	ISO/IEC 8208	ISO/IEC 8881
Data Link Layer	ISO 8802-2 type 2	
	ISO/IEC 8802-5 Medium Access Control	
Physical Layer	ISO/IEC 8802-5 Physical Layer	

Figure 2 - Profile protocol stack for a TC53 End System

This profile does not specify the required functions for relays.

2 Normative references

The following documents contain provisions which, through reference in this text, constitute provisions of this part of ISO/IEC ISP 10609. 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 10609 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 TR 10000-1 : 1992, *Information technology - Framework and taxonomy of International Standardized Profiles - Part 1: Framework*

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

ISO/IEC ISP 10608-13 : 1993, *Information technology - International Standardized Profile TAnnnn - Connection-mode Transport Service over Connectionless-mode Network Service - Part 13: MAC sublayer and physical layer dependent requirements for a Token Ring LAN subnetwork*

ISO/IEC ISP 10609-2 : 1992, *Information technology - International Standardized Profiles TB, TC, TD and TE - Connection-mode Transport Service over connection-mode Network Service - Part 2: Subnetwork-type independent requirements for Group TC*

ISO/IEC ISP 10609-10 : 1994, *Information Technology - International Standardized Profiles TB, TC, TD and TE - Connection-mode Transport Service over connection-mode Network Service - Part 10: LAN subnetwork-dependent, media-independent requirements*

Additional normative references are found in each of the ISP parts listed above. These additional normative references are base standards used for development of the relevant ISP parts.

3 Definitions

The terms used in this part of ISO/IEC ISP 10609 are defined in the referenced base standards (see clause 2).

4 Abbreviations

Abbreviations used in this part of ISO/IEC ISP 10609 are defined in the referenced base standards (see clause 2).

5 Requirements

5.1 Transport layer

The requirements for the transport layer shall be as specified in ISO/IEC ISP 10609-2, subclause 5.2.

5.2 Network layer

The requirements for the network layer shall be as specified in ISO/IEC ISP 10609-10, clause 5, with the following addition:

An implementation shall restrict non-standard default packet sizes to a maximum of 1408 octets whenever system administration or station management indicates that an NPDU will flow, through a MAC sublayer bridge, over an ISO/IEC 8802-3 CSMA/CD LAN subnetwork.

Note - 1408 octets is the largest packet size, according to ISO/IEC 8881, that can be accomodated by a CSMA/CD LAN.

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5.3 Logical link control sublayer

The requirements for the logical link control sublayer shall be as specified in ISO/IEC ISP 10609-10, clause 5.

5.4 Medium access control sublayer

The requirements for the medium access control sublayer shall be as specified in ISO/IEC ISP 10608-13, subclauses 5.1 and 5.2.

5.5 Physical layer

The requirements for the physical layer shall be as specified in ISO/IEC ISP 10608-13, subclause 5.3.

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Annex A
(normative)

ISPICS requirements list

A.1 General options of the profile

There are no general options in this profile.

A.2 Standards selected and combined in the profile

This profile makes use of the following base standards:

- ISO/IEC 8073
- ISO/IEC 8878
- ISO/IEC 8208
- ISO/IEC 8881
- ISO 8802-2
- ISO/IEC 8802-5

A.3 Constraints on base standards

A conformant implementation of this profile shall:

a) meet all subnetwork-type independent constraints on operation of ISO/IEC 8073 as specified in the ISPICS requirements list in ISO/IEC ISP 10609-2, annex A;

b) meet all subnetwork-type dependent, media independent constraints on the operation of ISO/IEC 8881, ISO/IEC 8878, ISO/IEC 8208, and ISO 8802-2, as specified in the ISPICS requirements list in ISO/IEC ISP 10609-10, annex A;

c) meet all Token Ring LAN subnetwork-type dependent constraints on the operation of ISO/IEC 8802-5, as specified in the ISPICS requirements list in ISO/IEC ISP 10608-13, annex A.

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Annex B
(informative)

Recommendations

B.1 ISO/IEC 8208 recommendations

An implementation should support all non-standard default packet sizes (maximum user data field length) from 32 octets to 4096 octets.

B.2 ISO 8802-2 recommendations

The recommendations provided in ISO/IEC ISP 10609-10, annex C, are valid with the following addition:

- N1 values up to 4104 octets should be supported. This is compatible with a Network Layer packet size of 4096 octets.

B.3 ISO/IEC 8802-5 recommendations

The MAC sublayer information field lengths that are indicated in ISO/IEC ISP 10608-13 provide the potential to operate Token Ring End Systems at maximum throughput for specific, high speed applications. However, the actual information field lengths that can be used at the MAC sublayer for a particular instance of communication between two OSI End Systems will depend on a number of additional factors, such as:

- the maximum number of octets specified for an LLC I-PDU (N1);

- the use of one or more MAC level bridges between the TC53 reference End System and the remote End System (the maximum Service Data Unit size supported by any bridge is the smaller of those supported by the two attaching LANs).

If the TC53 reference End System is communicating, through a MAC sublayer bridge, over an ISO/IEC 8802-3 CSMA/CD LAN subnetwork then the maximum MAC frame size cannot exceed 1518 octets. Also, if two TC53 End Systems are operating at different data rates (4 and 16 Mbps) through a MAC sublayer bridge, then the maximum Information Field length will be 4428 octets.

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