
**Information technology — Framework and
taxonomy of International Standardized
Profiles —**

**Part 3:
Principles and Taxonomy for Open System
Environment Profiles**

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*Technologies de l'information — Cadre et taxinomie des profils normalisés
internationaux —*

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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.

The main task of technical committees is to prepare International Standards, but in exceptional circumstances a technical committee may propose the publication of a Technical Report of one of the following types:

- type 1, when the required support cannot be obtained for the publication of an International Standard, despite repeated efforts;
- type 2, when the subject is still under technical development or where for any other reason there is the future but not immediate possibility of an agreement on an International Standard;
- type 3, when a technical committee has collected data of a different kind from that which is normally published as an International Standard ("state of the art", for example).

Technical Reports of types 1 and 2 are subject to review within three years of publication, to decide whether they can be transformed into International Standards. Technical Reports of type 3 do not necessarily have to be reviewed until the data they provide are considered to be no longer valid or useful.

ISO/IEC TR 10000-3, which is a Technical Report of type 3, was prepared by Joint Technical Committee ISO/IEC JTC 1,

This second edition cancels and replaces the first edition (ISO/IEC TR 10000-3:1995), which has been technically revised.

ISO/IEC TR 10000 consists of the following parts, under the general title *Information technology — Framework and taxonomy of International Standardized Profiles*:

- *Part 1: General principles and documentation framework*
- *Part 2: Principles and Taxonomy for OSI Profiles*
- *Part 3: Principles and Taxonomy for Open System Environment Profiles*

Other parts to be defined as necessary.

Introduction

The context of Functional Standardization is one part of the overall field of IT standardization activities covering

- Base Standards, which define fundamentals and generalized procedures. They provide an infrastructure that can be used by a variety of applications, each of which can make its own selection from the options offered by them.
- Profiles, which define conforming subsets or combinations of base standards used to provide specific functions. Profiles identify the use of particular subsets or options available in the base standards, and provide a basis for the development of uniform, internationally recognized, conformance tests.
- Registration Mechanisms, which provide the means to specify detailed parameterization within the framework of the base standards or profiles.

Within ISO/IEC JTC 1, the process of Functional Standardization is concerned with the methodology of defining profiles, and their publication in documents called "International Standardized Profiles" (ISPs) in accordance with procedures contained in the Directives of JTC 1. The scope of Information Technology standardization to which this process is being applied is that which corresponds to the generally understood, but loosely defined, concept of "Open Systems". The objective is to facilitate the specification of IT systems characterized by a high degree of interoperability and portability of their components.

In addition to ISO/IEC TR 10000, the secretariat of the Special Group on Functional Standardization maintains a standing document (SD-4) entitled "Directory of ISPs and Profiles contained therein". This is a factual record of which ISPs exist, or are in preparation, together with an executive summary of each profile. It is subject to regular updating by the Secretariat of ISO/IEC JTC 1/SGFS.

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Information technology — Framework and taxonomy for International Standardized Profiles —

Part 3:

Principles and Taxonomy for Open System Environment Profiles

1 Scope

The purpose of this part of ISO/IEC TR 10000 is to provide the context for functional standardization in support of Open System Environments (OSE). It provides principles and a classification scheme for OSE profiles which may be or have been submitted for ratification as International Standardized Profiles (ISPs).

ISO/IEC TR 10000-1 defines the concept of profiles that are documented as ISPs. This part of ISO/IEC TR 10000 outlines the basic OSE objectives and concepts, and defines an approach and format for OSE profiles specified by International Standardized Profiles. It gives guidance to organizations proposing Draft OSE ISPs, on the nature and content of the documents which may be submitted for ratification as International Standardized Profiles.

An OSE is defined as a comprehensive set of interfaces, services and supporting formats (including user aspects) enabling interoperability and portability of applications, data or people, as specified by information technology standards and profiles. Communication protocols are part of the specification of behaviour at certain types of interfaces.

Each OSE profile is created to satisfy a clearly specified set of user requirements. Since profiles will be proposed according to needs identified to SGFS and according to the progress of international base standardization, the Taxonomy will be periodically updated or have new parts added in order to reflect the progress reached. It is also recognized that there will be proposals for the extension of the taxonomy to cover functions which were not identified during

the preparation of this edition of ISO/IEC TR 10000. These extensions may be identified by a variety of proposers and involve simple extensions to the existing Taxonomy or the addition of new functional areas not currently covered by ISO/IEC TR 10000. The inclusion of such extensions is administered following the procedures elaborated by SGFS.

A distinction has been made between a profile and an ISP which documents one or more profiles. The Taxonomy is only concerned with profiles, but further information is given in the "Directory of ISPs and Profiles contained therein" as to which ISP contains the documentation of a profile.

This Directory is maintained as an SGFS standing document SD-4 (see reference in Annex A). For each draft profile submitted to SGFS, it will also provide additional information, including the status of the identified profiles.

2 References

ISO/IEC 9646-1:1994, *Information technology - Open System Interconnection - Conformance testing methodology and framework - Part 1: General concepts*.

ISO/IEC TR 10000-1:1998, *Information technology - Framework and taxonomy of International Standardized Profiles - Part 1: General principles and documentation framework*.

ISO/IEC TR 10000-2:1998, *Information technology - Framework and taxonomy of International Standardized Profiles - Part 2: Principles and Taxonomy for OSI Profiles*.

ISO/IEC TR 10183-1:1993, *Information technology - Text and office systems - Office Document Architecture (ODA) and interchange formats - Technical Report on ISO 8613 implementation testing - Part 1: Testing methodology.*

ISO/IEC 10641:1993, *Information technology - Computer graphics and image processing - Conformance testing of implementations of graphics standards.*

ITU-T Recommendation X.902 (1995) | ISO/IEC 10746-2:1996, *Information technology - Open Distributed Processing - Reference Model: Foundations.*

ISO/IEC 13210:1994, *Information technology - Test methods for measuring conformance to POSIX.*

ISO/IEC TR 14252:1996, *Information technology - Guide to the POSIX Open System Environment (OSE).*

3 Definitions

For the purposes of this part of ISO/IEC TR 10000, the following definitions apply.

3.1 Terms defined in this part of ISO/IEC TR 10000

3.1.1 OSE Profile

A profile which specifies all or part of the behaviour of an IT system at one or more of the OSE interfaces.

3.1.2 OSI Profile

A specific OSE profile composed of OSI base standards and/or interchange format and data representation base standards.

3.2 Terms defined in ISO/IEC TR 14252

The following terms are defined in ISO/IEC TR 14252:1996, and are included here for convenience.

3.2.1 Application Platform

A set of resources, including hardware and software, that support the services on which application software will run.

The application platform provides services at its interfaces that, as much as possible, make the specific characteristics of the platform transparent to the application software.

3.2.2 Application Program Interface (API)

The interface between application software and application platform, across which all services are provided.

3.2.3 Application Software

Software that is specific to an application and is composed of programs, data, and documentation.

3.2.4 Communication Services Interface (CSI)

The boundary across which access to services for interaction between internal application software entities and application platform external entities is provided.

3.2.5 Human/Computer Interface (HCI)

The boundary across which physical interaction between a human being and the application platform takes place.

3.2.6 Information Services Interface (ISI)

The boundary across which external, persistent storage service is provided.

3.2.7 Interoperability

The ability of two or more systems to exchange information and to mutually use the information that has been exchanged.

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3.2.8 Open System Environment (OSE)

A comprehensive set of interfaces, services, and supporting formats, plus user aspects for interoperability or for portability of applications, data, or people, as specified by information technology standards and profiles.

3.2.9 Portability (of Application Software)

The ease with which application software and data can be transferred from one information system to another.

Note: See 6.1 for interpretive discussion of the terms defined in 3.2.2, 3.2.4, 3.2.5 and 3.2.6.

3.3 Terms defined in ITU-T Rec. X.902 | ISO/IEC 10746-2

The following terms are defined in ITU-T Rec. X.902 | ISO/IEC 10746-2, and are included here for convenience.

3.3.1 Interchange reference point

A reference point at which an external physical storage medium can be introduced into the IT system.

3.3.2 Interworking reference point

A reference point at which an interface can be established to allow communications between two or more systems.

3.3.3 Perceptual reference point

A reference point at which there is some interaction between the system and the physical world.

3.3.4 Programmatic reference point

A reference point at which a programmatic interface can be established to allow access to a function.

Note: See 6.1 for interpretive discussion of the terms defined in 3.3.1, 3.3.2, 3.3.3 and 3.3.4.

4 Abbreviations

4.1 General abbreviations

AEP	Application Environment Profile
API	Application Program Interface
CSI	Communications Services Interface
EDI	Electronic Data Interchange
HCI	Human/Computer Interface
ISI	Information Services Interface
ISP	International Standardized Profile
IT	Information Technology
OSE	Open System Environment
OSI	Open Systems Interconnection

4.2 Abbreviations used in Profile identifiers

AMI	Medical Image Interchange (Appl.)
FMI	Medical Image Interchange (Format)

5 OSE Objectives

The user perspective of OSE originates from the position that OSE provides what is necessary for the users to access the technology necessary to achieve their desired results. The provider perspective originates from the position that the OSE provides what is necessary for producers to deliver technology to users in the most efficient and effective manner.

The following objectives, drawn from ISO/IEC TR 14252, *Guide to the POSIX Open System Environment (OSE)*, are key in establishing an open system. The descriptions of these objectives introduce a number of concepts that are required both to state clearly the objectives and to define the standards and profiles required to satisfy them. These objectives, which are not exhaustive, are as follows:

- **Application Software Portability and Software Reuse at the Source Code Level**

A comprehensive and consistent set of OSE specifications at the source code level is necessary to enable porting of software among application platform implementations. This allows an organization to protect its investment in existing software by avoiding the cost of software reimplementation.