TECHNICAL REPORT

ISO/IEC TR 10000-3

Second edition
1998-11-01

Information technology — Framework and taxonomy of International Standardized Profiles —

Part 3:
Principles and Taxonomy for Open System Environment Profiles

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

Partie 3: Principes et taxinomie pour profils d'environnement de système ouvert

Reference number
ISO/IEC TR 10000-3:1998(E)

Contents

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 Technical Reports of type 3 do not necessarily have to be reviewed until the data they provide are considered to be no longer valid or useful.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, *Information technology*.

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.

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.

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 it's investment in existing software by avoiding the cost of software reimplementation.

Application Portability is often associated with porting an entire application at one time. **Software reuse** is a term used to describe porting only a subset of a working program into a new application. The new application may or may not be executed on the same application platform. Software reuse is an important element in achieving the benefits of application portability.

Portability and reuse of representations other than source code representation is a secondary objective.

- **Data Portability**

OSE standards should support portability of data stored on external media. This capability should allow existing data to be moved to a new application platform, and may be used to exchange data or for back-up.

- **Application Software Interoperability**

OSE standards and profiles should define communications services and format specifications that enable two software entities to exchange and make mutual use of data. These specifications should provide for situations where the communicating entities are running on the same or different platforms.

- **Management and Security Interoperability**

OSE specifications of application platforms should allow interoperation for management and security purposes among platform implementations.

- **User Portability**

OSE standards and profiles should enable people to interact with a wide range of application platform implementations without retraining. Variations in interaction methods which are not based on functional differences or special requirements are counter-productive and should be avoided by specifying common user-interface specifications.

- **Accommodation of Standards**

OSE profiles should promote the use of existing standards, and should accommodate imminent and new information technology standards as they become available. OSE profiles should evolve as standards emerge and as the technology and requirements change.

- **Accommodation of New Information System Technology**

OSE standards should be decoupled as much as possible from underlying technology, nevertheless, major changes in technology may require new standards or new versions of existing standards, and this must be recognized in selecting standards and profiles. This leads to the understanding that an element of judgement is involved in selecting among base standards, and the timing of switching from an older technology to a newer one.

- **Application Platform Scalability**

Where similar services are required and provided on different types of application platforms (for example, workstations and supercomputers) the same OSE standards and profiles should be applied to each if possible.

- **Distributed System Scalability**

OSE standards and profiles should avoid specifying characteristics that limit the number and variety of application platform types that can be included in any large distributed system.

- **Implementation Transparency**

The OSE standards and profiles should be defined in such a way as to hide the mechanism used to implement the service. The complexity of the implementation is hidden from the service user behind the service interface, and is therefore "transparent" to the user. From the application software perspective, this reduces the size and cost of the application program, and is the basis for technology migration.

- **Support Clear Statement of User Requirements**

A clear identification of the specific user requirements satisfied by a profile serves to guide and focus the development of a profile, and to apply it appropriately. Profile production is an extremely expensive process. With limited resource available for development and evolution of OSE standards, this allows the standards community to focus on activities which are most useful.

6 Open System Environment Profile Concepts

OSE profiles are specified in order to fulfil the objectives identified in clause 5. OSE profiles, and their general characteristics, follow the generic descriptions given in accordance with the purpose and concept of profiles defined in ISO/IEC TR 10000-1, and are not repeated in this Part.

6.1 General Principles

An OSE profile is a set of one or more base standards and/or ISPs and, where applicable, the identification of chosen classes, conforming subsets, options and parameters of those base standards and/or ISPs. It specifies a part, or all, of the behaviour of an IT system at one or more OSE interfaces with respect to a function, or set of functions, that an IT system supports.

In the context of OSE profiling, an interface is a boundary of an IT system at which its behaviour can be observed. There are four distinct types of OSE interface:

- Application Program Interface (API)
- Human/Computer Interface (HCI)
- Information Services Interface (ISI)
- Communication Service Interface (CSI)

These interfaces are defined in ISO/IEC TR 14252, *Guide to the POSIX Open System Environment (OSE).* In the context of this technical report these definitions are interpreted in an architecturally neutral sense. Thus the term Application Program Interface is interpreted as an interface between application software and a provider of appropriate services. The term Human/Computer Interface is interpreted as an interface across which physical interaction between a human being and an IT system takes place. The term Information Services Interface is interpreted as an interface across which external, persistent storage is provided, where only the format and syntax are required to be specified for data portability and interoperability. The term Communication Services Interface is interpreted as an interface that provides access to services for interaction between entities in an IT system and entities in an external system. These latter entities include external data transport facilities and devices. For CSIs, compatible data formats and protocols are necessary for interoperability.

Note: As a consequence of this interpretation, a standard for a programmatic interface between for example a transaction manager and a database manager would specify an API and be appropriate for reference from an ISP.

Furthermore, the four types of OSE interface can be interpreted as corresponding to the programmatic, perceptual, interchange and interworking reference points identified in ITU-T Rec. X.902 | ISO/IEC 10746-2*, Information technology - Open Distributed Processing - Reference Model: Foundations*. Correspondence in this case means that a standard identified as applicable at a given OSE interface will be applicable at the corresponding ODP reference point.

The behaviour specified by an OSE profile at an interface of an IT system is a function or set of functions provided by that interface. The behaviour related to the same function as seen at different interfaces must be consistent. It follows that, where an OSE profile specifies behaviour at more than one interface of an IT system, the behaviour is consistent between the interfaces with respect to any of the functions concerned.

OSE profile specifications can:

- refer only to a single base standard and specify choices of options etc.;
- refer to combinations of base standards;
- refer to combinations of base standards and ISPs that specify other OSE profiles.

Reference to an ISP in an OSE profile specification can be used to ensure consistent specification of the same functionality or related functionalities in different OSE profiles. In particular, abstract specifications of data formats in profiles for Interchange Format and Presentation (F-profiles) may be applied at any OSE interface and are not restricted to CSI interfaces, as might be inferred from the fact that they are currently documented in TR 10000-2. However, a specific data format representation normally relates to a particular type of interface.

6.2 Conformance to an OSE Profile

The general concepts of the meaning of conformance to a profile, as stated in ISO/IEC TR 10000-1, apply to OSE profiles. The specification of conformance requirements and conformance tests for a given OSE profile will depend upon the different interface types relevant to the profile.

Conformance requirements and conformance tests relevant to APIs shall use the concepts and terminology defined in ISO/IEC 13210.

Conformance requirements and conformance tests relevant to CSIs shall use the concepts and terminology defined in ITU-T Rec. X.290 | ISO/IEC 9646-1.

There are no International Standards that provide a conformance testing methodology generally applicable to HCIs or ISIs. Thus, conformance requirements and conformance tests relevant to HCIs and ISIs should use concepts and terminology similar to those defined in ISO/IEC 13210 and ITU-T Rec. X.290 | ISO/IEC 9646-1.

Where relevant, they should also use the concepts and terminology defined for Open Document Architecture (ODA) standards in ISO/IEC TR 10183-1 and for graphics standards in ISO/IEC 10641.

A unified approach to conformance which addresses the whole scope of OSE Profiling is an issue which requires further study. A full integration of ISO/IEC 13210 and ISO/IEC 9646-1 would be a significant step in this direction.

7 Taxonomy of OSE Profiles: Principles

7.1 Nature and Purpose of the Taxonomy

It is the objective of the OSE taxonomy to provide a classification scheme that can categorize any profile. In order to achieve this objective, the classification scheme is based on main subdivisions that correspond to functions or groups of functions that are chosen by agreement in order to match the types of use to which the resulting profiles are put by both suppliers and users. These subdivisions are identified by a short character string (root mnemonic). Examples might be: Electronic Data Interchange (EDI) for basic EDI related profiles and MED for profiles specific to the medical area. Although it is desirable to keep identifiers short, no absolute length restriction is imposed.

Further levels of classification are identified by a numeric string following the root mnemonic, corresponding to agreed real world subdivisions of the area of concern. There are no general rules for the significance to be attached to the values of the numeric string. Such rules may be defined within specific areas of concern.

In order to indicate that a profile is concerned with a particular interface or set of interfaces, there is a one to four character suffix separated from the numeric string by a hyphen. The suffix is composed from the letters C, H, I and P (in alphabetical order) to identify the type(s) of interface specified in the OSE profile as follows:

C - CSI H - HCI
I - ISI P - API

The use of suffixes for interchange format and representation profiles (F-profiles) is for further study. Those currently developed have no suffix.

Some OSI profiles have been developed with identifiers that do not have the suffix '-C'. For reasons of compatibility they retain their existing identifiers until revised, at which point the suffix '-C' is used. Therefore the identifier consisting of an old OSI profile identifier suffixed by the '-C' is reserved for revised versions of that OSI profile. All new CSI profiles have the suffix '-C' as part of their profile identifier.

Hence for an interim period there will be profiles whose identifiers do not have suffixes. These are either unrevised OSI-profiles or F-profiles.

Note:
1. Examples of profile identifiers could be:

AMHnnn-C	-Messaging functions	-CSI
AFTnnn-CP	-File functions	-CSI/API
WINnnn-H	-Window functions	-HCI only
MEDnn-CHP	-Medical function	-CSI/HCI/API

In this example, the CSI-only profile is an OSI profile and the root mnemonic is from the OSI taxonomy; in the other cases the root mnemonics are hypothetical.

2. If it is felt desirable in the taxonomy to identify profiles that are cited in another profile, they can be identified in parentheses following the profile identifier. For example:

- MEDnnn-CHP (FTmmm-CP, WINiii-H)

where the profile identified by MEDnnn-CHP includes the other two profiles.

7.2 Taxonomy Description

JTC 1 Subcomittees, A-liaison organisations and S-liaison organisations are expected to propose main subdivisions of the taxonomy and associated detailed taxonomies corresponding to functions or groups of functions. These will be incorporated into the taxonomy by revisions of this technical report.

Note: The following is a list of points that should be considered by those who are developing taxonomy proposals for their own areas of interest. It is not suggested that it will be possible to take account of all of them in the structure of the profile identifiers.

- Unambiguous identification of profiles.
- The use of identifiers that are meaningful to users.
- Provision for expansion of the taxonomy.
- The possibility of conveying information on interoperability of profiles, architectural groupings of profiles or other types of relationship between profiles.
- Provision for additional needs such as security or management.

7.3 Profile Classes

7.3.1 POSIX OSE Profiles

The POSIX Application Environment Profiles are developed with application software portability at the source code level for specific environments as their objective. Source code portability requires specification of at least one programming language and the interfaces defined in the POSIX standards. Therefore, these profiles typically include a programming language, POSIX interfaces and potentially include API's for other services beyond the operating system (communications, database access, graphics, etc.) All of these profiles include a normative reference to IS 9945-1, the POSIX System Interface API.

There are four major profile classes defined: an Interactive Systems Environment, two High Performance Application Environments and a set of Real Time Application Environments. The interactive system environment corresponds with the traditional multi-user operating system set of services, with language development in C (or Ada as an alternative).

The real time environments range from embedded real time applications (set-top devices, guidance control systems, etc.) which might not have any "rotating media", with steps up to a full blown environment that includes all of the "interactive systems environment" and expands it to include most of the real time options as well.

7.3.2 Virtual Terminal OSE Profiles

The Virtual Terminal taxonomy, as contained in TR 10000-2, consists of two classes: the VT Application profiles AVT that refer to the FVT profiles defining VT Registered Objects. These classes of profiles promote the interoperability between implementations of the VT Application Service Element.

Portability of VT ASE implementations at source code level requires the standardization of the interface between the VT ASE and the VT user application.

Portability of VT ASE implementations at the HCI level requires the standardization of the way in which the VT device objects are mapped to real devices.

The following taxonomy substructure has been choosen:

VTnn-CP – ViT Program Interfaces
VTnn-H – VT Device Interfaces

7.3.3 Medical OSE Profiles

7.3.3.1 Medical Image Interchange Application Profiles

The Medical Image Interchange profiles defined in this section provide for the application interchange of information (“A-Profiles”) which include encoded medical images, using connection-mode Transport Service.

The MEDI1-C branch includes profiles supporting simple point-to-point image transfer. The digital image(s) are assumed to be encoded according to one of the interchange formats defined in the medical F-profiles (see 7.4.2), and are transferred transparently from one end-system to another.

The MEDI2-C branch includes profiles supporting store-and-forward image transfer between two end-systems, via a third party.

The MEDI3-C branch includes profiles supporting the query and transfer of digital images from a conceptual image database. This includes the selection of individual images from a study, and the transfer of partial images and related information, according to pre-defined data.

The MEDI4-C branch includes profiles supporting committed image transfer. These profiles will typically be specified when a high degree of confidence is required that an image has been successfully transferred and secured by the receiving end-system.

The MEDI5-C branch includes additional profiles for image filing, retrieval and display. This includes profiles for medical imaging workstation supporting OSI Virtual Terminal.

The MEDI6-C branch includes profiles supporting image conferencing and real-time support.

7.3.3.2 Medical Image Interchange Format Profiles

The profiles defined here are format profiles; their classification is still a subject to investigation.

The FMI1 branch includes profiles which are suited to encoding single instances of medical digital images. These would be combined with other related digital images and associated non-image information by application-specific means.

The FMI2 branch includes profiles which explicitly provide for multiple related digital images and related information, such as would be obtained in a typical medical examination. The relationship between the images is not defined. For example, they might be all images from a given series of examinations, or multi-band images corresponding to the same moment in time.

The FMI3 branch specifies profiles for multiple related images with related data and graphics, where individual images may be annotated with text and/or overlaid with other digital images and/or graphics to indicate, for example particular Regions of Interest in the underlying digital image. The overlays and annotations are not intrinsically bound to the image, although they must always occupy the same display space relative to the image coordinates. Thus it will still be possible after image transfer to display the digital image either with or without the overlaid information.

The FMI4 branch of the taxonomy specifies Multimedia profiles.

The FMI5 branch of the taxonomy specifies profiles for representing Moving Images.

8 Taxonomy of OSE Profiles

8.1 POSIX OSE Profiles

PSEab-HIP
High Performance Application Environments

a	b	Substructure
1	0	Supercomputing Application Environment
1	1	Multiprocessor Application Environment

PSEab-P Realtime Application Environment

a	b	Substructure
5	1	Minimal Realtime System Profile
5	2	Realtime Controller System Profile
5	3	Dedicated Realtime System Profile

PSEab-IP Realtime Application Environment

a	b	Substructure
5	4	Multipurpose Realtime System Profile

8.2 VT OSE Profiles

8.2.1 VT Program Interfaces

VTab-CP Virtual Terminal Program Interfaces

a	b	Substructure
1		Data Structures
1	1	VTE-profile data structures for ISO C

8.2.2 VT Device Interfaces

VTab-H Virtual Terminal Device Interfaces

a	b	Substructure
1		Device Characteristics
2		Device Gateways

8.3 Medical OSE Profiles

8.3.1 Medical Image Interchange (Appl.)

MEDIab-C Medical Image Interchange profiles using the Connection Mode Transport Service

a	b	Substructure
1		Simple point-to-point image transfer
1	1	File Transfer of unstructured Binary Data
1	2	Simple Transaction Processing with Unstructured Data
1		Store-and-forward image transfer
2	1	Externally defined content type
2	2	Interpersonal messaging
2	2 1	Externally defined body part
1		Image database query and transfer
3	1	Basic MEDICOM profiles
3	2	System Management Profiles
3	3	Database access using Structured Query Language (SQL)
3	4	Management of Image Filestore
3	5	Management of Image Directory Structure
1		Committed Image Transfer
4	1	MEDICOM profiles with commit
4	2	File Transfer with commitment, concurrency and recovery (CCR)
4	3	Transaction Processing Profiles
4	3 1	Unstructured Data Transfer with commitment
1		Image filing, retrieval and display
5	1	Medical imaging workstation support
1		Image Conferencing real-time support
6	1	Real-time overlays and pointers

8.3.2 Medical Image Interchange (Format)

FMI Medical Image Interchange Profiles

a	b	c	Substructure
1			Simple Digital Image Encoding (Single Image)
1	1		IPI-IIF
1	1	1	simple uncompressed boolean image
1	1	2	simple uncompressed colour image
1	2		JPEG
1	3		JBIG
1	4		IS&C
1	5		G3 Fax
1	6		G4 Fax and Mixed Mode
1	7		TIFF encoding
2			Multiple related digital images and related information
2	1		IPI-IIF
2	1	1	Full PIKS with JPEG lossless compression
2	1	2	Full PIKS with lossless or lossy compression
2	1	3	TIFF encoding
2	2		IS&C
2	3		ODA [1]
2	3	1	Raster graphics with G3 Fax images
2	3	2	Raster graphics with G4 Fax images
2	4		TIFF encoding
3			Multiple related images with related data and graphics and overlays
3	1		IPI-IIF with geometric graphics
3	1	1	Full PIKS
3	1	2	IPI-IIF Full
3	2		IS&C
3	3		ODA
3	3	1	Geometric graphics and Raster graphics with G3 Fax images
3	3	2	Geometric graphics and Raster graphics with G4 Fax images
3	4		TIFF encoding
4			Multimedia
4	1		ODA
4	2		MHEG
5			Moving Images
5	1		MPEG
5	2		IPI

[1] It is recognized that some of the FMI taxonomy entries may be more appropriately positioned within existing branches of the TR 10000 taxonomy.

Annex A

Bibliography

1) ISO/IEC SGFS Standing Document SD-4 "*Directory of ISPs and Profiles contained therein*". [2]

[2] Updated and published regularly by the SGFS Secretariat as an ISO/IEC SGFS N-numbered document.

ICS 35.100.05

Price based on 10 pages