doc. nr.	ISO/IEC JTC 1/SGFS N 355	
date	1991-05-20	total pages
item nr.		supersedes document

Secretariat: Nederlands Normalisatie-instituut (NNI)
Kalfjeslaan 2 P.O. box 5059
2600 GB Delft
Netherlands
telephone: + 31 15 690390
telefax: + 31 15 690190
telex: 38144 nni nl
telegrams: Normalisatie Delft

ISO/IEC JTC 1/SGFS
Title: ISO/IEC JTC 1 Special Group on Functional Standardization

Secretariat: NNI (Netherlands)

Title : Response to SGFS N232 from ISO/IEC JTC1/SC22/WG15 (POSIX)

Source : Jim Isaak Convenor JTC1/SC22/WG15

Status :

Note :

To: Peter Bessems
Secretary SGFS
NNI
FAX: 31 15 690 190
Phone: 31 15 690 390

16-may-1991.
Pg 1/2

From: Jim Isaak
Convenor JTC1/SC22/WG15

Re: Response to SGFS N232 from ISO/IEC JTC1/SC22/WG15 (POSIX)

Whereas SGFS has requested input regarding potential extensions of the scope of ISO/IEC/TR 10000 (ISO/IEC JTC1 SGFS N232), and

Whereas the current work of SGFS appears to be focused primarily on OSI, and

Whereas the requirement for profiles which include the work of ISO/IEC JTC1/SC22/WG15 extends beyond the scope of ISO/IEC JTC1/SC22/WG15, and

Whereas various groups, including TSG-1 and EWOS, are recommending the development of profiles for Open System Environments (OSE), referred to in the TSG-1 report as Application Environment Profiles (AEP), and

Whereas the ISO/IEC JTC1/SC22/WG15 Profile Coordination Ad Hoc meeting included participants from groups outside of JTC1 who are currently working on profiles, and

Whereas it will be important to provide timely response to JTC1 TSG-1 recommendations, and

Whereas, unlike OSI, other areas where profiles might be applied may not have an extensive existing set of base standards, and

Whereas, ISO/IEC JTC1/SC22/WG15 has identified two types of profiles affecting the work of ISO/IEC JTC1/SC22/WG15: Environment Profiles (e.g., Open System Environment, Application Environment) and National Profiles,

Pg 2/2

Therefore, ISO/IEC JTC1/SC22/WG15 requests that SGFS convene a special meeting to address the issue of expanding JTC1 profile activities to specifically include Open System Environments (OSE).

ISO/IEC JTC1/SC22/WG15 recommends that agenda topics for this meeting include the following:

1. Identification and resolution of gaps in the set of existing base standards identified in a profile.
   - How can the gaps be identified?
   - What actions are required to fill identified gaps?
   - What actions should be taken while the gap is being filled?
   - What criteria should be used for establishing priorities in filling the gaps?

2. The nested use of profiles.
   - What are the possible consequences of embedding a profile in another profile?
   - What effect might the nesting of profiles have on the number and scope of profiles developed?

3. Can a subset of a base standard be used in a profile?

4. Is it appropriate for a profile to further specify behaviors that are explicitly left unspecified in a base standard?

5. How can OSE profiles be harmonized? What are the appropriate channels and forums for addressing harmonization?

6. Should a forum for discussing taxonomies proposed for OSE profiles be established?

With regard to National Profiles: ISO/IEC JTC1/SC22/WG15 makes three observations:

1. National Profiles specify how options and standards should be used together to meet national cultural needs. For example date formats, and reference to appropriate character sets.

2. Extensions to ISO/IEC/TR 10000 may be needed to address National Profiles

3. ISO/IEC JTC1/SC22/WG15 has formed a Rapporteur Group for Internationalization that could assist in developing any needed extension to ISO/IEC/TR 10000, and ISO/IEC JTC1/SC22/WG20 may also be interested in making contributions in this regard.

TECHNICAL REPORT

ISO/IEC TR 10000-2

First edition
1990-06-01

JTC1
SC-14

Information technology — Framework and taxonomy of International Standardized Profiles —

Part 2:
Taxonomy of Profiles

Systèmes de traitement de l'information — Cadre et taxonomie des profils internationaux normalisés —

Partie 2: Taxonomie des profils

6. 12 Reference number
ISO/IEC/TR 10000-2 : 1990 (E)

Contents

Page

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.

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

— 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 10000-2, which is a Technical Report of type 3, was prepared by the Special Group on Functional Standardization of ISO/IEC JTC 1, *Information technology.*

The structure of ISO/IEC/TR 10000 is as follows:

- Part 1: Framework
- Part 2: Taxonomy of Profiles

Part 2 has one annex:

- Annex A is for information only, and has no binding significance.

Introduction

The context of Functional Standardization is one part of the overall field of Information Technology 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 subsets or combinations of base standards used to provide specific functions. Profiles identify the use of particular 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 addition to ISO/IEC/TR 10000, the Secretariat of the Special Group on Functional Standardization maintains a "Directory of ISPs and Profiles contained therein". This is a factual record of which ISPs exist, or are in preparation, together with a summary description of the scope, scenario, and model for each Profile. It is subject to regular updating by the Secretariat.

Information technology - Framework and taxonomy of International Standardized Profiles - Part 2: Taxonomy of Profiles

1 Scope

The purpose of this part of ISO/IEC/TR 10000 is to provide a full classification for 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, as documented in ISPs, and gives guidance to organizations making proposals for Draft ISPs, on the nature and content of the documents they are producing.

ISO/IEC/TR 10000 is intended to be applied to Profiles in the area of competence of JTC 1, and within this, priority consideration has been given to Profiles in the OSI area, i.e. those which specify OSI base standards, and those which are expected to be used in conjunction with them. In addition, as a lower priority, it is also applicable to Profiles specifying the use of other JTC 1 base standards. However, it is recognized that the scope of the concept of Profiles may ultimately be wider than that of JTC 1.

The existence of a Profile classification in this part of ISO/IEC/ TR 10000 does not reflect a judgement by ISO/IEC JTC 1/SGFS that a Profile is required for such capability. It merely provides a capability to identify uniquely such a function and to enable evaluation of PDISPs.

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 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 preparation of this version 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, currently under elaboration in JTC 1/SGFS.

A distinction has been made between a Profile and an ISP documenting 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 JTC1/SGFS document (JTC 1/SGFS N 100) and will be updated on a regular basis. For each Profile in the Taxonomy, it will also provide additional information, including such about the status of the identified Profiles.

2 Normative references

The following standards contain provisions which, through reference in this text, constitute provisions of this part of ISO/IEC/TR 10000. At the time of publication, the editions indicated were valid. All standards are subject to revision, and parties to agreements based on this part of ISO/IEC / TR 10000 are encouraged to investigate the possibility of applying the most recent editions of the standards listed below. Members of IEC and ISO maintain registers of currently valid International Standards.

ISO/IEC 8073: 1988, *Information processing systems - Open Systems Interconnection - Connection oriented transport protocol specification.*

ISO/IEC 8073/Add. 2: 1989, *Information processing systems - Open Systems Interconnection - Connection oriented transport protocol specification - Addendum 2: Class four operation over connectionless network service.*

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

ISO/IEC 8602: 1987, *Information processing systems - Open Systems Interconnection - Protocol for providing the connectionless-mode transport service.*

ISO/IEC 8613: 1989, *Information processing - Text and office systems - Office Document Architecture (ODA) and interchange format.*

ISO/IEC/TR 10000-1: 1990, *Information technology - Framework and taxonomy of International Standardized Profiles*
Part 1: Framework

ISO/IEC 10021: 1989, *Information processing systems - Text communication - Message Oriented Text Interchange System.* [1)]

ISO/IEC 10028, -- [1)], *Information processing systems - Telecommunications and information exchange between systems - Definition of the relaying functions of a Network Layer intermediate system.*

ISO/IEC/TR 10029: 1989, *Information technology - Telecommunications and information exchange between systems - Operation of an X.25 interworking unit.*

ISO/IEC/TR 10172: -- [1)], *Information technology - Telecommunications and information exchange between systems - Network/Transport protocol interworking function.*

IEC/ISO Directives Part 3: 1989, *Drafting and presentation of International Standards*

CCITT X.224: 1988, *Transport Protocol Specification for Open Systems Interconnection for CCITT Applications.*

CCITT X.400: 1984, *Recommendations X.400-X.430: Data Communication Networks: Message Handling Systems.*

CCITT X.400: 1988, *Recommendations X.400-X.430: Data Communication Networks: Message Handling Systems.*

3 Abbreviations

3.1 General abbreviations

CL	Connectionless-mode
CL-NS	Connectionless-mode Network Service
CL-TS	Connectionless-mode Transport Service
CO	Connection-mode
CO-NS	Connection-mode Network Service
CO-TS	Connection-mode Transport Service
CSDN	Circuit Switched Data Network
CSMA/CD	Carrier Sense, Multiple Access / Collision Detection
DAP	Directory Access Protocol
DSA	Directory Service Agent
DSP	Directory Service Protocol
DTE	Data Terminal Equipment
DUA	Directory User Agent
EDI	Electronic Data Interchange
EDIM(S)	EDI Messaging (System)
FDDI	Fibre Distributed Data Interface
IPM(S)	Interpersonal Messaging (System)
ISDN	Integrated Services Digital Network
ISP	International Standardized Profile
LAN	Local Area Network
MAC	Media Access Control
MOTIS	Message Oriented Text Interchange System
MTA	Message Transfer Agent
MS	Message Store
MTS	Message Transfer System
PDISP	Proposed Draft ISP
PSDN	Packet Switched Data Network
PSTN	Public Switched Telephonic Network
PVC	Permanent Virtual Circuit
QoS	Quality of Service
SGFS	ISO/IEC JTC 1/Special Group on Functional Standardization
UA	User Agent
VC	Virtual Call

3.2 Abbreviations used in Profile identifiers

ADI	Profile sub-class: Directory
AFT	Profile sub-class: File Transfer, Access and Management
AMH	Profile sub-class: Message Handling
AOM	Profile sub-class: OSI Management
ARD	Profile sub-class: Remote Database Access
ATP	Profile sub-class: Transaction Processing
AVT	Profile sub-class: Virtual Terminal
FCG	Profile sub-class: Computer Graphics Metafile Interchange Format
FDI	Profile sub-class: Directory Data Definitions
FOD	Profile sub-class: Office Document Format
FSG	Profile sub-class: SGML Interchange Format

[1)] to be published.

4 The Taxonomy: Principles

4.1 General

Profiles are primarily arranged into classes, each class representing a category of functionality of reasonable independence from other classes. ISO/IEC/TR 10000-1 provides some further information about the principles used in this primary classification.

Within each class, a class-specific subdivision will be used.

Profile identifiers have been introduced such that each Profile is identified by a character string commencing with one letter (indicating the primary class of the Profile), and continuing with as many further letters or digits as are necessary to reflect its position within the hierarchic structure of the class. The syntax of all but the first letter is subject to individual definitions for each class (see below).

4.2 The class concept for OSI Profiles

In order to decouple representation of information or objects from communication protocols, and application-related protocol from subnetwork types, OSI and OSI-related Profiles are divided into the following classes:

T - Transport Profiles providing connection-mode Transport Service
U - Transport Profiles providing connectionless-mode Transport Service

R - Relay Profiles

A - Application Profiles requiring connection-mode Transport Service
B - Application Profiles requiring connectionless-mode Transport Service

F - Interchange format and representation Profiles

Other classes may be required.

Transport Profiles of classes T and U specify how the two modes of OSI Transport Service are provided over the two modes of OSI Network Service, and over specific subnetwork types, such as individual types of LANs, PSDNs, etc. In this way they isolate the A/B-Profiles and F-Profiles from network technology.

Application Profiles of classes A and B specify communications protocol support for particular application types over the two modes of OSI Transport Service, respectively.

F-Profiles specify the characteristics and representation of various types of information interchanged by A- and B-Profiles.

R-Profiles specify Relay functionality needed to enable systems using different T- or U-Profiles to interwork. Relays between T- and U-Profiles are not provided.

Within each of these classes, sub-classes of Profiles are identified which, again, may require further subdivision such that the granularity of the Taxonomy meets the requirements outlined in ISO/IEC/TR 10000-1. This leads to a hierarchical structure of Profile (sub-)classes which is given in full in clause 5.

For the identification of sub-classes and a further subdivision within a given class, a class-dependent methodology is applied. This is explained in the subsequent class-individual sections.

4.3 The Group concept for OSI Profiles

ISO/IEC/TR 10000-1 identifies a basic concept which will be used in this Taxonomy:

A Group is a set of T- or U-Profiles that are compatible in the sense that a system implementing one Profile from the Group and another system implementing a Profile from the same Group can be expected to interwork, according to OSI, to some minimum level which is determined by the mandatory features of the Profiles in the Group.

Interworking according to OSI means end-to-end operation across a single subnetwork, or across multiple subnetworks linked by means of Network (or lower) Layer relays.

An example of a Group is the set of T-Profiles that provide the Connection-mode Transport Service, using Class 4 Transport Protocol over the Connectionless-mode Network Service, provided by ISO 8473. This Group has members which correspond to different subnetwork technologies but interworking between systems conforming to them is made possible by LAN bridges and/or Network Layer relays.

4.4 Profile classes for OSI

4.4.1 Transport Profiles

4.4.1.1 Principles

Transport Profiles define the use of protocol standards from OSI layers 1 to 4, to provide the OSI Transport Service.

A primary distinction is made between Transport Profiles, based on the mode of Transport Service offered:

- Connection-mode Transport Service: Profile class T
- Connectionless-mode Transport Service: Profile class U

For the Transport Profile classification within each class, the following methodology is applied:

a) As a first level distinction the Group concept (see 4.3) is used in the following way:

A lower layer Group is a collection of Profiles which:

- support the same combination of modes of Transport and Network Service;
- support the same Transport Protocol Class(es);

The notion of a Group is incorporated in the classification.

b) The second level distinction between Profiles, i.e. within a Group, is made according to the subnetwork type supported.
(See 5.1.1 for examples of subnetwork types).

c) Further subdivisions are made according to the characteristics of a particular subnetwork, e.g., switched versus leased line.
(See 5.1.1 for examples of such characteristics).

4.4.1.2 Connection-mode Transport Service: Profile class T

Based on functional standardization already under way in organizations represented in SGFS and on standards already developed in ISO, the following lower layer Groups are identified as being of value. They are characterized as follows:

a) Connection-mode Transport Service over Connectionless-mode Network Service:

Group T A

The Connection-mode Transport Service (CO-TS) is provided over the Connectionless-mode Network Service (CL-NS) by requiring the use of the Class 4 Transport Protocol as defined in ISO 8073/Add. 2.

NOTE - A system implementing Group TA and claiming conformance to ISO 8073 also has to implement the mandatory transport protocol classes for operation over CO-NS as required by ISO 8073.

b) Connection-mode Transport Service over Connection-mode Network Service

The Connection-mode Transport Service (CO-TS) is provided over the Connection-mode Network Service (CO-NS).

Profiles of this characteristic are further grouped according to their required support of Transport Protocol class(es):

	mandatory [1] transport protocol classes
Group TB:	0 and 2 and 4 [2]
Group TC:	0 and 2 [2]
Group TD:	0
Group TE:	2 [3]

[1] 'mandatory' means those Transport Protocol classes made mandatory by the base standard, ISO 8073, plus any class required for Group membership

[2] The class negotiation rules to be employed are those in CCITT Recommendation X.224 (1988).

[3] A system implementing Group TE and claiming conformance to CCITT Recommendation X.224 (1988) also has to implement transport protocol class 0.

4.4.1.3 Connectionless-mode Transport Service: Profile class U

a) Connectionless-mode Transport Service over Connectionless-mode Network Service:

Group UA

The Connectionless-mode Transport Service (CL-TS) is provided using the ISO 8602 Connectionless-mode Transport Protocol. This Group supports the mandatory operation of ISO 8602, over Connectionless-mode Network Service.

b) Connectionless-mode Transport Service over Connection-mode Network Service:

Group UB

The Connectionless-mode Transport Service (CL-TS) is provided using the ISO 8602 Connectionless-mode Transport Protocol. This Group supports the option of ISO 8602 that operates over Connection-mode Network Service.

NOTE - A system implementing Group UB and claiming conformance to ISO 8602 also has to implement the mandatory operation over CL-NS as required by ISO 8602.

4.4.1.4 Transport Profile identifier

The identifier for a Profile in the lower layers is of the form:

YXabcd

where:

Y = class designator, indicating the Transport Service mode:

T for Connection-mode
U for Connectionless-mode

X = one letter indicating the lower-layer Group within the class, as defined in 4.4.1.2 and 4.4.1.3 above.

abcd = the structured numerical identifier indicating the subnetwork type supported in this Profile. It is possible that a further level of identifier may become necessary. In general, when referencing a Profile, only that level of identifier which is necessary for uniqueness needs to be used.

The identifier structure is not meant to capture the variety of details and options of OSI layer 1 such as attachment speeds and connectors. However, it is recognized that this issue must be covered by the appropriate Profile specification.

4.4.1.5 Interworking between Transport Profile Groups

The following tables 1 and 2 show the interworking capabilities between Profiles. Table 1 shows the interworking between Profiles in Profile class T, and table 2 shows the interworking among Profiles in Profile class U. Successful establishment of a Transport Connection is dependent upon successful negotiation of parameters, some of which are not considered in the following tables.

No interworking is possible between Groups in class T and U because of the different mode of Transport Service provided.

Entries in the tables have the following meaning:

Full: Full OSI interworking (an OSI relay may be required (see 5.2))

Restricted: Interworking capabilities are restricted in the sense that the choice of Transport Protocol classes may be restricted by the static capability of the responder. Successful interworking is dependent on the satisfactory outcome of class negotiation.

Special: Non-OSI relay required for interworking (see also 4.4.2.1)

Special 1: Special restrictions for interworking exist (see 5.2.4).

Special 2: Interworking between these Profile types is not contemplated in any JTC 1 work.

NOTE - Successful interworking depends not only on the satisfactory outcome of the transport protocol class negotiation but also on dynamic responses during transport initiation. Such dynamic responses can include, amongst others, responder reactions to the offered quality-of-service (QoS) or to the specific options requested by the initiator.

Table 1 - Interworking amongst Groups in class T

Responder in Group	Network Service mode	Initiator in Group				
		TA	TB	TC	TD	TE
TA	CL	full	special 1	special 1	special 1	special 1
TB	CO	special 1	full	full	full	full
TC	CO	special 1	restricted	full	full	full
TD	CO	special 1	restricted	restricted	full	special 2
TE	CO	special 1	restricted	restricted	special 2	full

4.4.2 Relays

4.4.2.1 Principles

Relay Profiles define the use of standards from OSI layers 1 to 4, to provide relaying functions between OSI Transport Profiles.

No relays exist between different Profiles of different Transport Profile classes (T, U).

Relays may operate at various layers up to layer 4. However, relays operating at layer 4 are not OSI relays and hence some restrictions or limitations may be expected in their operation. Many proposals for such relays have significant architectural issues associated with them relating to integrity, security, QoS, etc., and the fact that an identifier has been allocated to them does not indicate that such issues have been resolved.

4.4.2.2 Relay Profile identifier

The identifier for a Relay Profile is of the form

RXp.q

where

R = relay function

X = relay type identifier

This identifier will cover

- the layer at which the relay operates
- the service mode being supported
- the type of relay

p, q = subnetwork identifier

p and q may each take the value of the abcd-structured numerical identifier defined for Transport Profiles. The fully qualified structure need only be used where necessary (e.g., for circumstances where a distinction must be made between LANs).

RXp.q represents a relay of type X between subnetwork type p and subnetwork type q.

A relay RXp.q is considered to provide the same functionality as RXq.p unless otherwise stated.

Table 2 - Interworking amongst Groups in class U

Responder in Group	Initiator in Group	
	UA	UB
UA	full	special 2
UB	special 2	full

4.4.3 Application Profiles for OSI

4.4.3.1 Principles

Application Profiles define the use of protocol standards from OSI layers 5 to 7, to provide for the structured transfer of information between end systems.

Currently, only Application Layer standards defined by JTC1/SC18 and SC21 are included.

Each Application Profile is a complete definition of the use of protocol standards from OSI layers 5 to 7, though it may share one or more common definitions of some part of its content with other Application Profiles.

In analogy with the primary distinction made between Transport Profiles, a primary distinction is made between Application Profiles, based on the mode of Transport Service they require:

Profile class A: Application Profiles requiring Connection-mode Transport Service, i.e., using T-Profiles

Profile class B: Application Profiles requiring Connectionless-mode Transport Service, i.e., using U-Profiles

A further distinction is based on Application categories, as they are currently identified as main projects in JTC 1/SC 18 and SC 21.

4.4.3.2 Application Profile identifier

The identifier for a Profile in the Application class is of the form:

CXYabc

where:

C = Application Profile class designator:

- A for Profiles requiring Connection-mode Transport Service
- B for Profiles requiring Connectionless-mode Transport Service

XY = two letters corresponding to the names of the primary subdivisions. These subdivisions are taken from the main categories of application functions and OSI management, as identified as main projects in JTC1.

abc = the structured numerical identifier for the member(s) of the subdivision. It is possible that a further level of subdivision may become necessary. Only that level of identifier will be used which is necessary for uniqueness. This level may vary among application functions.

4.4.4 Interchange Format and Representation Profiles

4.4.4.1 Principles

Interchange Format and Representation Profiles define the structure and/or content of the information being interchanged by Application Profiles. Hence, the main feature which distinguishes them from Application Profiles is the absence of a transfer function.

Currently, only interchange formats defined by JTC1/SC18, SC 21, and SC24 are included.

4.4.4.2 Interchange Format and Representation Profile identifier

The identifier for a Profile in the Interchange Format and Representation class is of the form:

FXYabc

where:

F = Interchange Format

XY = two letters corresponding to the names of the primary subdivisions.

abc = the structured numerical identifier for the member(s) of the subdivision. It is possible that a further level of subdivision may become necessary. Only that level of identifier will be used which is necessary for uniqueness. This level may vary among the primary subdivisions.

4.4.4.3 Principles for the Office Document Format Taxonomy

The Office Document Format (FOD) Profiles consist of a hierarchy of related ODA Document Applica-

tion Profiles supporting formatted, as well as, processable documents.

The structure of the Office Document Format (FOD) Profile Taxonomy consists of two levels of subdivision a and b.

- Level a reflects the hierarchically related, increasing complexity and functionality of the document structures supported by the Profile. Three types of complexity are provided for:

  1. Simple Document Structure

  2. Enhanced Document Structure

  3. Extended Document Structure

  The Simple Document Structure is intended to address the general requirements of current word processing applications. The Enhanced Document Structure is intended to address the general requirements of emerging word processing applications that have been enhanced from the earlier, simple document structures supported by current word processing applications. The Extended Document Structure is intended to address the general requirements of emerging personal publishing, document processing applications.

- Level b reflects the particular combination of content architectures supported in the Profile. Three such content architectures are specified in ISO 8613. Six combinations of content architectures are provided for:

  1. Character Content Architecture only.

  2. Raster Graphics Content Architecture only.

  3. Geometric Graphics Content Architecture only.

  4. Character and Raster Graphics Content Architecture.

  5. Character and Geometric Graphics Content Architecture.

  6. Character, Raster Graphics and Geometric Graphics Content Architecture.

NOTES

1 For a given Profile both levels shall be specified.

2 Further levels of subdivision may be identified in the future.

5 Taxonomy of Profiles

The inclusion of a Profile in this clause is purely for the purpose of assigning a unique, meaningful identifier. It should not be assumed that the inclusion of a Profile in this clause implies that a requirement for that Profile has been identified to SGFS. For such information, see the "Directory of ISPs and Profiles contained therein".

5.1 Transport Profiles

5.1.1 Taxonomy of subnetworks

The following Taxonomy classifies subnetworks and, where existing, different modes of operation over a particular subnetwork, to provide the OSI Network Service. The Taxonomy is used in all Transport Profile Groups, unless otherwise stated.

a b c d	Subnetwork Type
1	PACKET SWITCHED DATA NETWORK (PSDN)
1 1	Permanent Access to a PSDN
1 1 1	PSTN leased line
1 1 1 1	Virtual Call (VC)
1 1 1 2	Permanent Virtual Circuit (PVC)
1 1 2	Digital data circuit / CSDN leased line
1 1 2 1	Virtual Call (VC)
1 1 2 2	Permanent Virtual Circuit (PVC)
1 1 3	ISDN B-channel, semi-permanent
1 1 3 1	Virtual Call (VC)
1 1 3 2	Permanent Virtual Circuit (PVC)
1 2	Switched Access to a PSDN
1 2 1	PSTN Case
1 2 1 1	Virtual Call (VC)
1 2 2	CSDN Case
1 2 2 1	Virtual Call (VC)
1 2 3	ISDN B-channel Case
1 2 3 1	Virtual Call (VC)
2	DIGITAL DATA CIRCUIT
2 1	Leased (Permanent) Service
2 2	Dial-up (CSDN)
3	ANALOGUE TELEPHONE CIRCUIT
3 1	Leased (Permanent) Service
3 2	Dial-up (PSTN)
4	INTEGRATED SERVICES DIGITAL NETWORK (ISDN)
4 1	Semi-permanent service
4 1 1	B-channel
4 1 1 1	X.25 DTE to DTE operation
4 2	Circuit-mode service
4 2 1	B-channel
4 2 1 1	X.25 DTE to DTE operation
4 3	Packet-mode service
4 3 1	D-channel access
4 3 1 1	Virtual Call (VC)
4 3 1 2	Permanent Virtual Circuit (PVC)
4 3 2	B-channel semi-permanent access
4 3 2 1	Virtual Call (VC)
4 3 2 2	Permanent Virtual Circuit (PVC)
4 3 3	B-channel demand access
4 3 3 1	Virtual Call (VC)
5	LOCAL AREA NETWORKS
5 1	CSMA/CD
5 2	Token Bus
5 3	Token Ring
5 4	FDDI

5.1.2 Transport Groups

TA Group TA: CO-TS over CL-NS

For the detailed subnetwork Taxonomy within this Group see 5.1.1, with the exception that in Group TA, subnetworks of type ISDN (TA 4 xxx) are for further study.

TB Group TB: CO-TS over CO-NS :
with mandatory Transport Protocol Classes:
0 and 2 and 4

For the detailed subnetwork Taxonomy within this Group see 5.1.1.

TC Group TC: CO-TS over CO-NS :
with mandatory Transport Protocol Classes:
0 and 2

For the detailed subnetwork Taxonomy within this Group see 5.1.1.

TD Group TD: CO-TS over CO-NS :
with mandatory Transport Protocol Class:
0

For the detailed subnetwork Taxonomy within this Group see 5.1.1.

TE Group TE: CO-TS over CO-NS :
with mandatory Transport Protocol Class: 2

For the detailed subnetwork Taxonomy within this Group see 5.1.1.

UA Group UA: CL-TS over CL-NS

For the detailed subnetwork Taxonomy within this Group see 5.1.1.

UB Group UB: CL-TS over CO-NS

For the detailed subnetwork Taxonomy within this Group see 5.1.1.

5.2 Relay Profiles

5.2.1 Relaying the Network Internal Layer Service, as defined in ISO/IEC 10028

RA Relaying the Connectionless-mode Network Service

RB Relaying the Connection-mode Network Service

For the subnetwork identifiers p, q (as defined in 4.4.2.2) see the detailed subnetwork Taxonomy in 5.1.1.

5.2.2 Network Layer Protocol Relaying

RC X.25 Protocol Relaying

An approach for this type of relay could be as suggested in ISO/IEC/TR 10029.

For the subnetwork identifiers p, q (as defined in 4.4.2.2) see the detailed subnetwork Taxonomy in 5.1.1.

Only the following subnetwork type identifiers are valid: 11n, 21n, 31n, 41n, 431n, 432n, 5n.

5.2.3 Relaying the MAC Service

RD Relaying the MAC Service using transparent bridging

RE Relaying the MAC Service using source routing

For the subnetwork identifiers p, q (as defined in 4.4.2.2) see the detailed subnetwork Taxonomy in 5.1.1.

Only subnetwork type identifiers of the form 5n are valid for use with RD relays. Only subnetwork type identifiers of the form 53 and 54 are valid for use with RE relays.

5.2.4 CO/CL Interworking

RZ Relaying between Connectionless-mode Network Service and Connection-mode Network Service

The final position in the Taxonomy and the

substructure of this relay type cannot be determined until JTC 1/SC 6 has developed its Technical Report ISO/IEC/TR 10172.

5.3 Application Profiles

5.3.1 File Transfer, Access and Management

AFT File Transfer, Access and Management

a b	Substructure
1	FILE TRANSFER SERVICE
1 1	Simple (Unstructured)
1 2	Positional (Flat)
1 3	Full (Hierarchical)
2	FILE ACCESS SERVICE
2 2	Positional (Flat)
2 3	Full (Hierarchical)
3	FILE MANAGEMENT SERVICE

5.3.2 Message Handling

AMH Message Handling

a b c	Substructure
1	Common Facilities
1 1	MTA and MTS [1]
1 2	UA to MS (P7)
1 3	UA or MS to MTA (P3)
	IPMS [2]
2 1	IPM End System to IPM End System (P2 over P1)
2 2	IPM UA to IPM MS (P2 over P7)
2 3	IPM UA or IPM MS to MTA (P2 over P3)
2 4	IPM End System to IPM End System (P2 (1984) over P1 (1984))
3	EDIMS [2]
3 1	EDIM End System to EDIM End System (P_{EDI} over P1)
3 2	EDIM UA to EDIM MS (P_{EDI} over P7)
3 3	EDIM UA or EDIM MS to MTA (P_{EDI} over P3)

1) This profile deals with both X.410 mode and normal mode.

2) Profiles in this category should be structured in such a way that they refer to the ones identified in the AMH 1 category, plus specific text.

NOTES

1 All Profiles except AMH 24 refer to CCITT X.400 (1988) Recommendations and their JTC 1 equivalents on MOTIS, ISO/IEC 10021.

2 AMH 24 exceptionally requires the visibility of more than Transport Service mode.

5.3.3 Virtual Terminal

AVT Virtual Terminal

a b	Substructure
1	BASIC CLASS (A-mode)
1 1	A-mode Default
1 2	TELNET
1 3	Line Scroll
1 4	Paged
1 5	CCITT X.3 PAD Interworking
1 6	Transparent
1 7	Enhanced Line Scroll
1 8	Enhanced Paged
2	BASIC CLASS (S-mode)
2 1	S-mode Default
2 2	Forms
2 3	Paged
2 4	Enhanced Forms
2 5	Enhanced Paged

NOTE - The "enhanced" entries are place holders for the addition of facilities which will be specified in the forthcoming second addenda to the Basic Class Virtual Terminal standards. These include specifically "ripple" editing functions.

5.3.4 Transaction Processing

ATP Transaction Processing

a b Substructure

(to be studied)

5.3.5 Remote Database Access

ARD Remote Database Access

a b Substructure

(to be studied)

5.3.6 OSI Management

AOM OSI Management

a b Substructure

(to be studied)

5.3.7 Directory

ADI Directory

a Substructure

1 Directory Access Protocol (DAP)

2 Directory System Protocol (DSP)

NOTE - The ADI substructure requires further study.

5.4 Interchange Format and Representation Profiles

5.4.1 Office Document Format

FOD Office Document Format

a b Substructure

1 Simple document structure

1 1 Character content architecture only

2 Enhanced document structure

2 6 Character, Raster Graphics and Geometric Graphics content architecture

3 Extended document structure

3 6 Character, Raster Graphics and Geometric Graphics content architecture

For the principles of the FOD taxonomy, see 4.4.4.3.

5.4.2 Computer Graphics Metafile Interchange Format

FCG Computer Graphics Metafile Interchange Format

a b Substructure

(to be studied)

5.4.3 SGML Interchange Format

FSG SGML Document Interchange Format

a b Substructure

(to be studied)

5.4.4 Directory Data Definitions

FDI Directory Data Definitions

a b Substructure

(to be studied)

Annex A (informative).
Bibliography of other referenced (non-normative) documents

This annex is for information only.

ISO/IEC JTC 1/SGFS N 100, [1] *Directory of ISPs and Profiles contained therein.*

[1] will be updated and published regularly by the SGFS Secretariat.

UDC 681.3 : 621.39

Descriptors : data processing, information interchange, network interconnection, open systems interconnection, communication procedures, profiles, classifications.

Price based on 14 pages