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ISO/IEC JTC1/SGFS	
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Secretariat:	NNI (Netherlands)

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Information Technology - Framework and Taxonomy of International
Standardized Profiles - Part 1: General Principles and Framework.

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Status: Second working draft revision covering the extension of scope of SGFS to include profiles for the Open System Environment. Editor's draft following receipt of comments on first working draft and discussion at SGFS meeting in June 1992. Resolution 12 (SGFS N626) refers.

Action: For review and development at the SGFS Authorized Subgroup meeting, December 1992.

Editor's Note: The changes from WDTR 10000-1.3 (SGFS N442) are shown by means of **bold text with marginal marks for additions**, and by ~~struck-out text for deletions~~. **[Editor's comments are in bold text in square brackets]**.

General editing instructions were provided by SGFS in N621

The text has been aligned, where appropriate, with the final text of TR 10000-1.2 (SGFS N631). Further alignment will be required with the new text being drafted for TR 10000-3 (N688).

In Editor's Notes, references of the form "US-04" refer to comments received, as identified in the Disposition of Comments document SGFS N618.

For ease of discussion and subsequent editing, the presentation of the text has been simplified from the required ITTF publication layout and font, to single column layout and a larger font. Line numbers have been added.

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1 Foreword

2 ISO (the International Organization for Standardization) and IEC (the International
3 Electrotechnical Commission) together form a system for worldwide standardization as a
4 whole. National bodies that are members of ISO or IEC participate in the development of
5 International Standards and Technical Reports through technical committees established
6 by the respective organization to deal with particular fields of technical activity. ISO and IEC
7 technical committees collaborate in fields of mutual interest. Other international
8 organizations, governmental and non-governmental, in liaison with ISO and IEC, also take
9 part in the work.

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

13 - type 1, when the required support cannot be obtained for the publication of an
14 International Standard, despite repeated efforts;

15 - type 2, when the subject is still under technical development or where for any
16 other reason there is the future but not immediate possibility of an agreement on
17 an International Standard;

18 - type 3, when a technical committee has collected data of a different kind from
19 that which is normally published as an International Standard ("state of the art",
20 for example).

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

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

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

- 28 | • Part 1: **General Principles and Framework**
- 29 | • Part 2: **Principles and Taxonomy for OSI Profiles**
- 30 | • Part 3: ~~Taxonomy of Application Environment Profiles~~ **Principles and**
31 | **Taxonomy for OSE Profiles**
- 32 | • ~~Part 4: Taxonomy of Profiles for..... (as necessary)~~
- 33 | **Other parts to be defined as necessary.**

34 | Part 1 has ~~four~~ **two** Annexes:

- 35 | • Annex A is an integral part of the Technical Report, and is binding on submitters
36 | of ISPs.
- 37 | • Annex B is ~~illustrative for information only~~, and has no binding significance.
- 38 | • ~~Annexes C and D are for information only, and have no binding significance.~~

1 Introduction

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

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

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

18 *[Ed. Note: Suggested by IT-01]*

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

Information Technology - Framework and taxonomy of International Standardized Profiles -

Part 1:

General principles and framework

1 Scope

This part of ISO/IEC/TR 10000 is an overall framework for functional standardization. It defines the concept of Profiles, and the way in which they are documented in International Standardized Profiles. It gives guidance to organizations making proposals for Draft International Standardized Profiles on the nature and content of the documents they are producing.

This Technical Report is concerned with an environment within which Profiles are defined and used, known by the term "Open System Environment". Its salient characteristics are those which permit systems to interwork consistently with each other, and which facilitate the movement of applications and users from one system to another. In order to structure the universe of Profiles for the Open System Environment in a manageable way, the model illustrated in Figure 1 is used.

This model identifies three main domains of Profile, whose interrelationships are described in more detail in Part 3. This part of ISO/IEC/TR 10000 is concerned with describing a framework within which subsequent parts are able to define the more specific principles and taxonomy of Profiles in each domain.

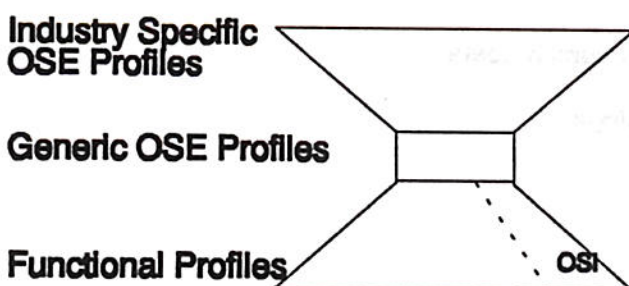


Figure 1 - Domains of Profiles

[Ed. Note: The above diagram and text are based on FR-01]

This part of ISO/IEC/TR 10000 outlines concepts of Profiles, the general Taxonomy (or Classification Scheme), and the format and content of ISPs in a generic manner, relevant to all domains of functional standardization. Annex A gives details of the format and content of ISPs as required by ISO/IEC JTC-1. Annex B gives examples of the ways in which Profile definitions are incorporated in ISPs for publication. Annex C gives guidance on conformance aspects of Profiles, and indicates the direction in which

1 | ~~ISO/IEC/TR 10000 may be developed in the future. Annex D lists these ISO/IEC Standards and CCITT~~
2 | ~~Recommendations which are quoted in examples.~~

3 | **[Ed. Note: Whole para deleted because it is repetitious of the first para above, and of information in**
4 | **the Foreword.]**

5 | ISO/IEC/TR 10000-2 ~~provides a rationale~~ **defines the principles** and classification for OSI Profiles (**part of**
6 | **the overall class of Functional Profiles as illustrated in Figure 1)** which may be or have been submitted
7 | for ratification as International Standardized Profiles.

8 | NOTE - These OSI Profiles **[Ed. Note: US-4]** specify OSI base standards, and those **base standards** concerned with interchange
9 | formats and data representation which are expected to be used in conjunction with them.

10 | ISO/IEC/TR 10000-3 ~~provides a rationale~~ **defines the principles** and classification for **Application**
11 | **Environment OSE Profiles (identified in Figure 1 as Generic OSE Profiles)** which may be or have been
12 | submitted for ratification as International Standardized Profiles.

13 | Further parts of ISO/IEC/TR 10000 may be developed to define other domains or **classes** of functional
14 | standardization **within the overall context illustrated in Figure 1.**

15 | ISO/IEC/TR 10000 is applicable to all International Standardized Profiles of ISO and IEC. Its primary focus
16 | is the area of competence of ISO/IEC JTC1, but by mutual agreement with JTC1, other Technical
17 | Committees may undertake similar functional standardization activities leading to the inclusion of additional
18 | material in this Technical Report.

19 | NOTE - Such material may either be located within the parts of ISO/IEC/TR 10000 which are the responsibility of JTC1/SGFS, or may
20 | take the form of separate parts, drafted and approved by the relevant Technical Committees of ISO or IEC.

21 | ~~Examples of other areas to which the concept may be extended are:~~

22 | **[Ed. Note: See US-05 and G-01]**

23 | **The scope of OSE profiling embraces a wide range of areas of Information Technology**
24 | **standardization, including, in addition to the specific area of Open Systems Interconnection**
25 | **addressed in ISO/IEC/TR 10000-2, such topics as:**

- 26 | • **Operating System Interfaces (POSIX)**
- 27 | • **Interfaces to Application Programs and to human users**
- 28 | • **Programming languages and related bindings**
- 29 | • **Character sets and their coding**
- 30 | • **Open Distributed Processing;**
- 31 | • **the representation of information or objects on storage media**
- 32 | • **logical and physical storage structures.**
- 33 | • **interchange formats defined for particular application areas (e.g. trade data interchange formats in**
34 | **ISO/TC 154);**
- 35 | • **protocols used in particular application areas (e.g. documentation (bibliographic) protocols in ISO/TC**
36 | **46, banking protocols in ISO/TC 68, industrial automation protocols in ISO/TC 184), which may also**
37 | **specify particular uses of the more generic OSI and OSE Profiles for OSI and Application**
38 | **Environments.**

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.

[Ed. Note: List of standards to be updated to match the documents referenced normatively in this part of TR 10000]

ISO 7498:1984, *Information processing systems - Open Systems Interconnection - Basic Reference Model*.
(Corresponds to CCITT X.200)

ISO/IEC 8613-1: 1989, *Information processing - Text and Office Systems; Office Document Architecture (ODA) and interchange format - Part 1: Introduction and General Principles*.
(Corresponds to CCITT T.411)

ISO/IEC 9646-1: 1991, *Information technology - OSI conformance testing methodology and framework - Part 1: General Concepts*.
(Corresponds to CCITT X.290)

ISO/IEC 9646-2: 1991, *Information technology - OSI conformance testing methodology and framework - Part 2: Abstract test suite specification*.
(Corresponds to CCITT X.291)

ISO/IEC 9646-6:¹⁾, *Information technology - OSI conformance testing methodology and framework - Part 6: Protocol Profile Test specification*.

ISO/IEC 9834-1:¹⁾ *Information technology - Open Systems Interconnection - Procedures for the operation of OSI registration authorities - Part 1: General procedures*
(Corresponds to CCITT X.660)

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

ISO/IEC/TR 10000-3:¹⁾ *Information technology - Framework and taxonomy of International Standardized Profiles - Part 3: Principles and taxonomy for OSE Profiles*.

~~ISO/IEC TR 10183:, Information processing - Text and Office Systems; Office Document Architecture (ODA) and interchange format - Technical Report on ISO 8613 Implementation Testing - Part 1: Testing Methodology⁴⁾
Part 2: Framework for Abstract Test Cases⁴⁾~~

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

A number of other ISO Standards and CCITT Recommendations are quoted in examples which do not constitute provisions of this part of ISO/IEC/TR 10000. They are listed in Annex-~~D~~ B.

¹⁾ To be published.

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

[Ed. Note: To be resequenced into alphabetical order before publication.]

3.1.1 International Standardized Profile: An internationally agreed-to, harmonized document which identifies a standard or group of standards, together with options and parameters, necessary to accomplish a function or set of functions.

3.1.2 Profile: A set of one or more base standards, and, where applicable, the identification of chosen classes, **conforming** subsets, options and parameters of those base standards, necessary for accomplishing a particular function.

NOTE - An International Standardized Profile includes the specification of one or more Profiles.

3.1.3 Functional Profile: A Profile defining a function which is an identifiable component of the Open System Environment, specified in terms of one base standard, or a small number of intimately related base standards.

3.1.4 Generic Profile: A Profile which is not specific to a particular community of use.

[Ed. Note: It was proposed in N618 that definitions for Functional and Generic Profile should be added. These probably need more consideration, since Functional Profiles would appear to be, by definition, Generic. The distinction in FR-01 is not between Functional and Generic, but between Generic and Industry Specific, and also between Functional and Generic OSE Profiles. Do we also need a definition of "Industry Specific" Profiles? If so, it would be as follows, following FR-01:]

3.1.5 Industry Specific Profile: : A Generic OSE Profile with extensions necessary to deal with specific industry requirements.

3.1.6 Base Standard: An approved International Standard, or CCITT Recommendation which is used in the definition of a Profile.

~~NOTE - See also 6.1 for an indication of circumstances under which documents other than these may be referenced in an ISP~~

~~**ISP Implementation Conformance Statement:** A statement made by the supplier of a system which claims to conform to an ISP, stating the capabilities and options which have been implemented, and all optional features which have been omitted.~~

3.1.7 Open System Environment: The comprehensive set of interfaces, services, and supporting formats, plus user aspects, for interoperability and/or portability of applications, data, or people, as specified by information technology standards and profiles.

3.1.8 OSI Profile: A functional Profile which ~~references base standard(s)~~ specifies a complete and coherent subset of the Open System Environment, which ~~adhere to~~ complies with and is consistent with the Basic Reference Model for Open Systems Interconnection in ISO/IEC 7498.

[Ed. Note: US-06 and EW-01. See also notes in N618]

3.1.9 Application Environment Profile: An OSE Profile (either generic or industry specific) which specifies a complete and coherent subset of the Open System Environment, ~~together with the identification of the applicable classes, subsets, options and parameters of the referenced standards,~~ necessary to support a class of applications.

1 | **3.1.10 Interoperability:** The ability of two or more systems to exchange information and to make
 2 | mutual use of the information that has been exchanged.

3 | **3.1.11 Portability (of Application Software):** The ease with which Application Software can be
 4 | transferred from one information processing system to another.

5 | **3.1.12 Portability (of Application):** The ease with which an application can be transferred from one
 6 | application platform to another.

7 | *[Ed. Note: FR-02 and EW-03; definitions adapted from TSG-1 Report]*

8 | ~~**Group:** A set of OSI Profiles that are compatible, in the sense that a system implementing one Profile from
 9 | a Group can interwork, according to OSI, with another system implementing a different Profile from the
 10 | same Group, in terms of the operation of the protocols specified within those Profiles.~~

11 | *[Ed. Note: See EW-02; appears in Part 2 for OSI usage.]*

12 | **3.2 Terms defined in ISO/IEC 9646-1 Conformance Terminology**

13 | *[Ed. Note: To be updated to refer to terms actually used in this part of TR 10000. Since this part of
 14 | TR 10000 is not specific to OSI, the "Conformance Terminology" it uses needs to be free of any
 15 | specific OSI connotation. Given, however, that OSI Conformance Testing is well defined in ISO/IEC
 16 | 9646, including aspects of Profile Conformance Testing, its concepts and terms can be borrowed for
 17 | this TR. They should therefore be included in this clause in their own right, and so the following
 18 | material is proposed as a starting point for this part of the TR.]*

19 | This part of ISO/IEC/TR 10000 uses the following terms for describing the methodology of specifying
 20 | and testing for an implementation's conformance to a Profile; they are derived from those terms
 21 | defined specifically for OSI in ISO/IEC 9646-1:

22 | **3.2.1 Conformance Testing:** Testing the extent to which an IUT is a conforming implementation.

23 | **3.2.2 Conforming Implementation:** An IUT which satisfies both static and dynamic requirements,
 24 | consistent with the capabilities stated in the Profile ICS.

25 | **3.2.3 Dynamic Conformance Requirement:** One of the requirements which specifies what observable
 26 | behaviour is permitted by the relevant specification(s) in particular instances.

27 | **3.2.4 Implementation Conformance Statement [ICS]:** A statement made by the supplier of an
 28 | implementation or system claimed to conform to a given specification, stating which capabilities have been
 29 | implemented. X

30 | **3.2.5 Implementation Conformance Statement Proforma:** A document, in the form of a questionnaire,
 31 | which when completed for an implementation or system becomes an ICS.

32 | **3.2.6 Implementation Under Test [IUT]:** An implementation of one or more Profiles in an adjacent
 33 | user/provider relationship, being that part of a system which is to be studied in testing.

34 | **3.2.7 Profile Implementation Conformance Statement:** An ICS for a system claimed to conform to a
 35 | given Profile, comprising the Profile RL, plus the base standard ICSs plus the Profile Specific ICS.

36 | **3.2.8 Profile Requirements List [PRL]:** A specification, within a Profile specification, of the requirements
 37 | to be met by a Profile ICS for a system which is stated to conform to that Profile. X

1 | **3.2.9 Profile Specific ICS:** An ICS for a system claimed to conform to a given Profile, answering
 2 | questions which are Profile-specific and additional to those of the base standards ICS proformas mentioned
 3 | in the Profile RL.

4 | **3.2.10 Requirements List [RL]:** A document specifying additional constraints placed by a Profile on the
 5 | allowed answers in a base standard ICS.

6 | **3.2.11 Static Conformance Requirement:** One of the requirements that specify the limitations on the
 7 | combinations of implemented capabilities permitted in a system which is claimed to conform to the relevant
 8 | specification(s).

9 | **3.2.12 System Conformance Statement [SCS]:** A document summarizing which International Standards,
 10 | CCITT Recommendations or ISPs are implemented and to which ones conformance is claimed.

11 | **3.2.13 System Under Test:** The system in which the IUT resides.

16 | 4 Abbreviations

17 | *[Ed. Note: To be updated to refer to terms actually used in this part of TR 10000]*

18 AEP	Application Environment Profile
19 ICS	Implementation Conformance Statement
20 ISP	International Standardized Profile
21 IUT	Implementation Under Test
22 OSE	Open System Environment
23 OSI	Open Systems Interconnection
24 PRL	Profile Requirements List
25 RL	Requirements List
26 A-Profile	Application Profile (requiring Connection-mode Transport Service)
27 B-Profile	Application Profile (requiring Connectionless-mode Transport Service)
28 F-Profile	Interchange Format and Representation Profile
29 R-Profile	Relay Profile
30 T-Profile	Transport Profile (providing Connection-mode Transport Service)
31 U-Profile	Transport Profile (providing Connectionless-mode Transport Service)
32 M-Profile	Managed-object Profile

5 Purpose of Profiles

Profiles define combinations of base standards **or other Profiles** for the purpose of

- identifying the ~~base~~ standards and ISPs, together with appropriate classes, **conforming** subsets, options and parameters, which are necessary to accomplish identified functions ~~for purposes such as~~ (e.g. interoperability) **or to support a class of applications (e.g. Transaction Processing applications)**;

[Ed. Note: US-02 and US-10]

- providing a system of referencing the various uses of ~~base~~ standards **and ISPs** which is meaningful to both users and suppliers **in response to a systematic identification and analysis of user requirements**;

[Ed. Note: Importance of linking profile development to user requirements is in line with JTC1 objectives and discussion in SGFS. See also N618 comment on IT-01 and EWOS EG-CAE/92/49 clause 2.1]

- providing a means to enhance the availability for procurement of consistent implementations of functionally defined groups of ~~base~~ standards **and ISPs**, which are expected to be the major components of real application systems, **and which realise the intentions of the corresponding reference models or frameworks with which the standards are associated**;
- promoting uniformity in the development of conformance tests for systems that implement the functions associated with the Profiles.

Various bodies throughout the world are undertaking work, in either regional or topic-oriented groups, in the area of Functional Standardization. Various names are given to the results of this work (such as Profiles, Functional Standards, Implementation Agreements, Specifications) and various approaches are being taken to the scope of the Profiles and to the style in which they are documented. This Framework of International Standardized Profiles has been developed by ISO/IEC JTC 1 in order to create a common classification scheme, (The Taxonomy) and a common documentation scope and style, into which the work of Functional Standardization bodies can be submitted, along with corresponding work from the members, technical committees and subcommittees of ISO and IEC.

It is not sufficient, however, just to create a framework of this sort. Product development and procurement need to be seen on a global, and not just on a national, regional or sectoral scale. Therefore an objective of ISO/IEC JTC 1 is to create the climate for the production of harmonized Profiles, where a wide measure of agreement is reached before proposals are submitted to ISO/IEC JTC 1.

One of the most important roles for an International Standardized Profile is to serve as the basis for the establishment of internationally recognized conformance test suites and test ~~laboratories~~ **methods**. ISPs are produced not simply to "legitimize" a particular choice of base standards and options, but to promote the **implementation of the referenced standards and ISPs in real systems in such a way as to achieve their intended goals - for example, interoperability and application portability**. The development and widespread acceptance of conformance testing based on ISPs is crucial to the successful realization of this goal.

[Ed. Note: US-11 and -12 and N618]

6 Concept of a Profile

The concept of a Profile, which fulfils the purposes defined in clause 5, is considered first in an abstract sense, with particular emphasis on the significance of the claim of conformance to a Profile. This concept of an individual Profile is then extended to include defining its relationship to other Profiles, i.e. the concept of a Taxonomy of Profiles, and its place within it. Finally, since a Profile has to have a concrete existence in order for it to be used effectively, these conceptual aspects are related to a formal documentation system.

Clauses 6 and 7 concentrate on defining the concept and taxonomy of the Profiles, independently of the way they are documented in ISPs. Clause 8 defines the actual documentation scheme and shows how there is not necessarily one separate document (ISP) for each Profile definition.

Profiles are related to Base Standards, to Registration Mechanisms, and to Conformance Tests of the systems which implement them. The practical implications of these relationships are developed in the following sub-clauses, some of which specify requirements that shall be satisfied by Profiles defined in ISPs.

[Ed. Note: SGFS in writing TR 10000 has always left issues concerning Conformance Testing to SC21/WG1 and ISO/IEC 9646. In this, more generic, revision of TR 10000-1, should there be some "generic" material on Conformance Testing, and if so, what and where? Specific statements of test methodology should of course be referenced from the appropriate parts of TR 10000 (for instance, for OSI Protocol Profiles, reference ISO/IEC 9646-6 from TR 10000-2)]

6.1 The relationship to base standards

[Ed. Note: In this clause, the text of N442 has first been aligned with N631 (the final text of TR 10000-1.2); marked changes then reflect the changes subsequently applied.]

6.1.1 Reduction of options

Base standards which specify procedures, interfaces and formats, provide options, anticipating the needs of a variety of applications and taking into account different capabilities of real systems and networks.

Profiles promote portability and interoperability by defining how to use a combination of base standards for a given function and environment. In addition to the selection of base standards, a choice is made of permitted options for each base standard and of suitable values for parameters left unspecified in the base standard.

Profiles shall not contradict base standards but shall make specific choices where options and ranges of values are available. The choice of the base standard options should be restricted so as to maximise the probability of achieving the objective of the Profile, ~~for example interworking between systems, or porting an application between systems, where the systems have implemented different selections of options of the Profile.~~ Clause 6.3.1 states the requirements for deriving the functionality of a Profile from the functionality of a base standard.

[Ed. Note: See US-13 and IT-04]

6.1.2 Use of normative References

An approved ISP shall make normative reference only to base standards or other ISPs.

In exceptional circumstances, described below, normative reference may be made to ISO/IEC Technical Reports. Such reference, which requires that the following conditions are met, shall be justified on a case-by-case basis:

- 1 • no base standard addressing the requirements is available, but a Technical Report is;
- 2 • the use is identified and discussed in the Explanatory Report which accompanies the proposed draft
- 3 for an ISP, justifying that use;
- 4 • the JTC1 body responsible for that Technical Report agrees that a normative reference is an
- 5 appropriate use of that Technical Report;
- 6 • the National Bodies approve this usage in the draft ISP ballot.

7 NOTE - In this Technical report, any text which describes the relationship of an ISP to a base standard, shall be taken to be referring
8 also to its relationship to any Technical Reports which have been accepted according to the criteria given above.

9 | 6.1.3 Use of Informative References

0 It may be useful to make informative reference to other documents in the process of defining a Profile.

1 For example:

- 2 a) Reference may be made to applicable regional or national standards. Examples of the functionality
3 which may require the use of this expedient are:
- 4 • physical connectors
 - 5 • electrical characteristics
 - 6 • safety requirements
 - 7 • character repertoires

8 | Such reference to regional or national standards shall be placed ~~in an informative annex to the~~
9 | **within informative text within an ISP**, or in a separate, ~~non-informative~~, part of a multi-part ISP.
0 Such usage shall be justified on a case-by-case basis, either as a consequence of the lack of
1 appropriate functionality in International Standards, or because of the existence of national or
2 regional regulatory requirements. It shall be accompanied by details of the body responsible for the
3 distribution and maintenance of the standard.

- 4 b) There is a need to define some aspect of the required functionality of a Profile where suitable base
5 standards of ISPs do not yet exist. Informative reference to the missing material may be made,
6 including, where appropriate, a pointer to the existence of ~~a non-nan~~ informative specification.

7 ***[Ed. Note: <<<This clause needs reconsidering in the light of the status of the Gaps
8 Issue>>>]***

9 This should only be done where the missing functionality is a relatively small proportion of the total
0 Profile. Where larger sections of the functionality are missing, it would be preferable to ~~redefine the~~
1 ~~scope of the Profile in the Taxonomy to match available base standards, and to insert in the~~
2 ~~Taxonomy a placeholder for a future, more extensive, Profile. leave the Profile in the Taxonomy~~
3 ~~as a placeholder for future use, and to insert a new Profile with a scope which is explicitly~~
4 ~~restricted to that of the available base standards. [Ed. Note: See EW-07 and FR-04]~~

- 5 | c) Background material helpful in understanding the Profile, suitable for citation in the
6 | Bibliography (as provided for in Annex A.4.3 and A.6.1). ***[Ed. Note: See US-17]***

6.1.4 Other Factors

Approval of an ISP by ISO/IEC members does not change the status of any documents referenced by it.

The development of an ISP may indicate the need to modify or to add to the requirements specified in a base standard, **or to create new base standards**, [*Ed. Note: This addition was already in N442, but not in N631.*] it is necessary for the ISP developer to liaise with the standards group responsible for that base standard so that the required changes may be made through established methods such as defect reporting, amendment procedures, or the introduction of new work.

Entry of a Profile into the Taxonomy may occur before the referenced base standards are all stable and approved. In these circumstances, regional or sectoral bodies may make use of interim or preliminary draft versions of Profiles in their own controlled environment

6.2 The relationship to Registration Authorities

[Ed. Note: This text is specifically oriented towards the OSI-related Registration Authorities process of ISO/IEC 9834. How much of this is generic and should remain here, and how much belongs in Part 2? There are also the issues raised by SWG-RA in Sept 1992 - yet to be formally circulated - to be considered.]

The base standards referenced in Profiles may include objects such as abstract syntaxes, document types, Virtual Terminal Environments and control objects, which require a Registration Authority to administer them. Profiles should specifically define the use of such objects (i.e. indicate whether they are included in the Profile or not) and shall refer to the objects using the registered name in the base standard. Profiles may, in addition to the registered name, define particular registered values associated with the name for use in the Profile.

When a type of information object requires a registration agent with a technical rôle as defined in ISO/IEC 9834-1, and the type of information object concerned falls within the scope of one of the classes of Profile defined in a taxonomy in this Technical Report, a multi-part ISP may be used as the registration agent concerned. In this case, the provisions of this part of ISO/IEC TR 10000, of ISO/IEC 9834-1, and of any other part or parts of ISO/IEC 9834 that concern this type of information object, shall all be applicable.

Where registration mechanisms are not yet set up, objects of this kind shall in the meantime be maintained in an informative annex to the ISP which defines the Profile. Entry of an object into such an annex does not imply registration.

NOTE - It is for further study whether a Profile could create the requirement to register a type of object that is not already accommodated by the Registration Authority mechanism for the base standards referenced.

6.3 Principles of Profile Content

6.3.1 General Principles

A Profile makes explicit the relationships ~~between~~**within** a set of base standards used together (relationships which ~~are~~ **can be** implicit in the definitions of the base standards themselves), and may also specify particular details of each base standard being used.

A Profile may refer to other International Standardized Profiles in order to make use of the functions and interfaces already defined by them, and thus limit its own direct reference to base standards.

It follows that a Profile

- 1 a) shall restrict the choice of base standard options to the extent necessary to maximise the probability
 2 of achieving the objective of the Profile; for example **to facilitate** interworking between systems, or
 3 porting an application between systems, where the systems have implemented different selections
 4 of options of the Profile. Thus a Profile may retain base standard options as options of the Profile
 5 provided that they do not affect interworking or portability.
- 6 b) shall not specify any requirements that would contradict or cause non-conformance to the base
 7 standards to which it refers;
- 8 c) may contain conformance requirements which are more specific and limited in scope than those of
 9 the base standards to which it refers. Whilst the capabilities and behaviour specified in a Profile will
 0 always be valid in terms of the base standards, a Profile may exclude some valid optional
 1 capabilities and optional behaviour permitted in those base standards.

2 Thus conformance to a Profile implies by definition conformance to the set of base standards which it
 3 references. However, conformance to that set of base standards does not necessarily imply conformance to
 4 the Profile.

5 6.3.2 Main elements of a Profile Definition

6 The definition of a Profile shall comprise the following elements:

- 7 a) a concise definition of the scope of the function for which the Profile is defined, and of its purpose,
 8 **which is capable of being used as an Executive Summary of the Profile;**
- 9 b) an illustration of the scenario within which the function is applicable, giving, where possible, a
 0 diagrammatic representation of the systems, applications and interfaces which are relevant;
- 1 c) normative reference to a single set of base standards or ISPs, including precise identification of the
 2 actual texts of the base standards or ISPs being used and of any approved amendments and
 3 technical corrigenda (errata), conformance to which is identified as potentially having an impact on
 4 achieving interoperation **or portability** using the Profile;
- 5 d) specifications of the application of each referenced base standard or ISP, ~~covering~~
 6 ~~recommendations on~~ **stating** the choice of classes or **conforming** subsets, and ~~on~~ the selection of
 7 options, ranges of parameter values, etc, and reference to registered objects; **[Ed. Note: US-18 and**
 8 **US-02]**
- 9 e) a statement defining the requirements to be observed by systems claiming conformance to the
 0 Profile, including any remaining permitted options of the referenced base standards or ISPs, which
 1 thus become options of the Profile.
- 2 f) informative reference to any other relevant source documents **(see 6.1.3(c))**;

3 Where systems can perform different but complementary roles (e.g. an initiator-responder, a client-server, or
 4 a master-slave relationship), the Profile shall identify the separate roles which may be adopted by a system,
 5 and these shall be stated as either mandatory requirements or options of the Profile, as appropriate.

6 NOTE - Clause 8 and annex A provide information on the way in which a Profile shall be defined in an ISP.

7 6.3.3 Specific types of Profile definition

8 Different classes of Profile, corresponding to the major divisions of the Taxonomy, may have unique aspects
 9 to their definition, **which are specified in detail in appropriate parts of this Technical Report.** For
 0 example:

an OSI Profile specifies the application of one or more OSI base standards in support of a specific requirement for interworking between systems. ~~While it adheres to complying with the structure defined by the Basic Reference Model for OSI, it does not define the total OSI functionality of a system, but only that part relevant to the function being defined.~~ *[Ed. Note: Based on EW-08]*

- a) an Interchange Format and Representation Profile specifies the application of one or more base standards in order to define the layout and internal structure of a document, an image, or a controlling data-object, which is interchanged between systems; such Profiles comply with the generic data specifications of their referenced base standards.
- b) an industry-specific Profile specifies the use of one or more base standards relevant to its domain of application, and may also require the use of the functions of a generic Profile, indicating the manner in which the options of the generic Profile become included or excluded when used in a specific environment.
- c) an OSE Generic Profile specifies the use of a number of Functional Profiles, providing both the portability characteristics (for instance an Application Environment Profile provides for portability of application software) and the corresponding interworking characteristics through the use of OSI Profiles and their associated programming interface specifications.
[Ed. Note: Based on EW-09]

6.4 The meaning of conformance to a Profile

[Ed. Note: Additions and changes to the text of this clause are based mainly on the OSI conformance framework in ISO/IEC 9646-1 and 9646-6, adapted to provide "generic" concepts and definitions relevant to all domains of Profiles. See G-06, EW-10, 12, US-20, 21, 23.]

6.4.1 ~~General~~

In the context of OSE, a system is said to exhibit conformance if it complies with the requirements of applicable specifications in its relationships with its external environment. Applicable specifications include those that specify interfaces to application programs (e.g. APIs), to human users (e.g. MMIs), and to other systems (e.g. protocols), and also those that specify definitions of data structures for communication of control and user information.

The purpose of a Profile, as indicated in earlier clauses, is to specify the use of sets of specifications to provide clearly defined system functionality. Hence conformance to a Profile specification always implies conformance to the referenced specifications.

Conformance requirements can be

- a) **mandatory requirements:** these are to be observed in all cases;
- b) **conditional requirements:** these are to be observed if the conditions set out in the specification apply;
- c) **options:** these can be selected to suit the implementation, provided that any requirements applicable to the option are observed.

Furthermore, conformance requirements can be stated

- d) **positively:** they state what is required to be done;
- e) **negatively:** they state what is required not to be done;

Finally, conformance requirements fall into two groups

- 1 | f) static conformance requirements;
 2 |
 3 | g) dynamic conformance requirements.
 4 |

5 | These are discussed in 6.6 and 6.7 respectively.

6 | To evaluate the conformance of a particular implementation, it is necessary to have a statement of
 7 | the capabilities and options which have been implemented, so that the implementation can be tested
 8 | for conformance against relevant requirements, and against those requirements only. Such a
 9 | statement is called an Implementation Conformance Statement (ICS).

10 | ~~A Profile shall address the following two topics:-~~

- 11 |
 12 | ~~• static conformance requirements (details as given in 6.6)~~
 13 |
 14 | ~~• dynamic conformance requirements (details as given in 6.7);-~~
 15 |

16 | ~~These requirements are stated in an ISP Implementation Conformance Statement (ISPIGS), using the PIGS~~
 17 | ~~Proformas of the referenced base standards and an ISPIGS Requirements List (IPRL details as given in~~
 18 | ~~8.4):~~

19 | ~~NOTE Where such PIGS proformas do not exist in a base standard, the appropriate means of stating implementation conformance~~
 20 | ~~shall be used.~~

21 | ~~6.4.2 OSI Profiles~~

22 | ~~The concepts of static conformance, dynamic conformance and Protocol Implementation Conformance~~
 23 | ~~Statements (see ISO/IEC 9646 parts 1 and 2) are incorporated in the concept of Profiles.-~~

24 | ~~In the context of OSI, a real system is said to exhibit conformance if it complies with the requirements of~~
 25 | ~~applicable OSI standards in its communication with other real systems.-~~

26 | ~~Since OSI standards form a set of inter-related standards which combine to define behaviour of open~~
 27 | ~~systems in their communication, it is necessary to express conformance of real systems with reference to~~
 28 | ~~this set.-~~

29 | ~~NOTE ISO/IEC 9646 is under development to include the subject of testing concepts and methodology for such Profiles, and will be~~
 30 | ~~referenced from this Technical Report when these extensions have been completed. In the mean time, nothing in this Technical Report~~
 31 | ~~shall be taken to contradict statements made in subsequently published ISO/IEC standards.-~~

32 | ~~6.4.3 Profiles for Interchange Formats and Representation~~

33 | ~~The concept of static conformance (as given in 6.6) shall be applied to Interchange Format and~~
 34 | ~~Representation Profiles.-~~

35 | ~~Interchange Format and Representation Profiles should if appropriate include an IPRL based on a PIGS-~~
 36 | ~~style proforma, which may vary from the PIGS defined in ISO/IEC 9646 Parts 1 and 2.~~

37 | ~~In the case of Profiles for Office Document Architecture, conformance centres on the requirements for valid~~
 38 | ~~ODA data streams. The conformance methodology for ODA data streams (defined in ISO/IEC 8613-1) is~~
 39 | ~~differentiated from the implementation testing methodology (defined in ISO/IEC TR 10183), which deals with~~
 40 | ~~the way that data streams are generated and received.~~

41 | ~~Other sub-classes of Interchange Format and Representation Profiles will similarly have specific definitions~~
 42 | ~~of conformance methodology.~~
 43 |

1 | ~~6.4.4 Application Environment Profiles~~

2 | ~~{To be supplied}~~

3 | *[Ed. Note: The preceding three subclauses will be picked up in the other parts of TR 10000 as appropriate.]*

4 | **6.5 Conformance requirements of ~~OSI~~ Profiles**

5 | The conformance requirements of a Profile shall relate to the conformance requirements in the base standards in the following ways, ~~based on the definitions in ISO/IEC 9646-2~~ **subject to any more specific indications given for particular domains of Profiles in other parts of this Technical Report:**

- 6 | a) **Mandatory requirements in the base standards:** these shall remain mandatory in the Profile.
- 7 | b) **Conditional requirements in the base standards:** these shall remain conditional in the Profile with the exception that if the condition always evaluates to True or False given the requirements of the Profile, then the status can be changed to the result obtained. ~~{See clause C.4 for additional information}.~~
- 8 | c) **Optional requirements in the base standards:** these may remain optional, or may be changed in various ways within the profile to:
- 9 | • **Mandatory:** support may be made mandatory.
 - 10 | • ~~Optional: support may remain optional.~~
 - 11 | • **Out of Scope:** optional requirements which are not relevant to the Profile. For example, functional units of layer (n-1) which are unused by layer (n) elements which are unused in the context of the Profile.
 - 12 | • **Conditional:** optional requirements may be made conditional within the Profile.
 - 13 | • **Excluded:** the use of an optional feature may be prohibited in the context of the Profile. This should only be used to restrict the dynamic behaviour in terms of the transmission of protocol elements. **of the implementation.**

14 | Exclusion of an optional feature in a base standard should be done only with great care. ~~An example of an appropriate situation would be when use of an optional feature would lead directly to future interoperability problems.~~ **especially when "out of scope" would be more appropriate. [Ed. Note: DIS 9646-6 clause 6.3 has more words about this topic, but they are rather "protocol-oriented"; is anything more needed here?]**

- 15 | d) **Not Applicable features in the base standards:** (i.e. those that are logically impossible, according to the base standard) these shall remain Not Applicable in the Profile.

16 | ~~e) Excluded requirements in the base standards: these shall remain excluded in the Profile.~~

17 | See 8.4 for the way in which these types of conformance requirements are handled in the ~~ISP Profile Implementation Conformance Statement (ISPICS).~~

18 | ~~NOTE See also Annex C for further information about the way in which these concepts may be applied in writing ISPs.~~

19 | A Profile shall be defined in such a way that testing of an implementation of it can be carried out in the most complete way possible **practicable**, given the available testing methodologies.

In order to conform to a Profile, a system shall perform correctly all the capabilities defined in the ~~ISP~~ **Profile** ICS as mandatory and also any options of the ~~ISP~~ **Profile** which it claims to include. Conformance to a base standard in this context is conformance to a particular identified publication of a referenced base standard as defined in 6.3.2 (c), irrespective of however many additional technical corrigenda to it may have been published.

But a system may have the ability to operate according to several Profiles which make use of different capabilities of the same base standards, and either to negotiate between such different uses, or to be configured appropriately.

[Ed. Note: The preceding three paragraphs have been moved from 6.4, which is now a general discussion of the meaning of conformance, and not specific to Profile conformance.]

6.6 Static Conformance

6.6.1 General

The choices of options made in a Profile's static conformance requirements are specific to that Profile and provide added value to the base standards.

The choices are not, therefore, arbitrary but need to be consistent with the purpose of the Profile and consistent across all base standards referenced by it.

In order to ~~avoid ambiguity~~ **ensure consistency** between the Profiles and the base standards, the static conformance requirements of a Profile shall be specified, where possible, by reference to the conformance requirements of the referenced base standards (see 8.4.3).

6.6.2 Structure

The statement of static conformance requirements shall be structured as follows:

- a) an overview of major subsets or implementation categories which provides an overall rationale for the more detailed selection of classes and options made in the Profile.
- b) the major conformance requirements which relate to these subsets or implementation categories.
- c) for each base standard selected in the Profile, ~~a set of static conformance requirements referring both~~ **reference** to the base standard static conformance requirements and ~~to the specification of the choices made for the Profile (details as given in 6.5).~~
- d) **any additional static conformance requirements of the Profile which involve interdependencies of related functional elements.**

See clause 8, and especially figure 3, for the way in which these requirements are reflected in the ~~ISPIGS~~ **Profile Requirements List**.

~~6.6.3 Sending/Receiving Asymmetry~~

~~Static conformance requirements may be different in respect of sending and receiving, or initiating and responding. This asymmetry may apply at any level of detail, from the capability of an implementation to initiate or respond to a connection, to the capability of receiving and correctly interpreting a wider range of parameter encodings than those used for sending.~~

~~Many base standards specifically identify only the connection initiate-respond asymmetry under static conformance in the conformance clause. There is a need to make it clear in the Profile either that there is no asymmetry, or, if there are asymmetrical requirements, what they are. [Ed. Note: For removal to TR 10000-2]~~

6.7 Dynamic conformance

Given the implementation choices made in the ~~ISP~~ Implementation Conformance Statement, the dynamic conformance requirements for a ~~system~~ Profile are ~~mostly already for the most part~~ specified by the referenced base standards.

Hence, a Profile shall specify dynamic conformance requirements by reference to those base standards, together with any further constraining requirements necessary to fulfil the stated purposes of the Profile.

Restrictions by a Profile on dynamic conformance requirements of a base standard are exceptions, and should only apply to ~~transmission~~ **the initiation of activity**. Restrictions should not apply to ~~reception~~ **responding to external initiatives**. Consequently, it is possible that receipt of an excluded option may cause the receiving system to operate outside the Profile, **but still in accordance with the base standards**. ~~Refer to clause C.2 for more information on a general categorization of conformance requirements.~~

7 Framework of The Taxonomy of Profiles

7.1 Nature and Purpose of the Taxonomy

The Taxonomy is the structure and classification within which Profiles will fit. It gives a first-level specification of Profiles, including any determined technical constraints due to their position in the structure, it classifies them and it specifies a number of relationships between them.

The process of drafting and approving ISPs requires a technical framework within which to operate. ISPs will, in general, be written, evaluated and used by experts in specific areas of standardization. There is therefore a prima facie case for identifying classes of Profiles which correspond to these main areas of expertise.

Having defined such classes, there is then a need to make further subdivisions, related to the inherent real-world divisions of functionality which are supported by the base standards concerned. These sub-classes correspond to functional elements which are meaningful to both users and suppliers; they correspond to points where choices are made, such as whether or not to use/offer a particular **conforming** subset of an application service, or which communications sub-network environment is to be accessed, or what types of portability need to be provided by a system.

In defining the elements of the taxonomy, a major source of determining factors can be provided by analysis of user requirements. Grouping together elements of functionality into a Profile should correspond to identifiable, real-world, units of application or system design.

The granularity of the Taxonomy is important from the point of view of satisfying the requirement for common methods of interworking **or portability** using Profiles; too many nearly-similar Profiles within a sub-class of the Taxonomy will increase the likelihood that users will be unable to agree on a single Profile choice to interwork successfully, **or port applications or users easily**; too few Profiles may lead to the provision of so many options to a Profile that it accomplishes little in the way of selection and simplification.

The Taxonomy therefore provides a structure within which these choices can be made and recorded, and the embodiment of the Taxonomy is the structured identifier system. **Subsequent parts of ISO/IEC/TR 10000-2** provides the detail of this system.

7.2 Main Elements of the Taxonomy of ~~OSI~~ Profiles

Profiles are divided into a number of classes, each class identified by a different initial letter. This letter is the basis of a structured set of Profile identifiers, which forms the representation of the Taxonomy. The main characteristics of the Taxonomy are stated here, **including all defined uses of the initial letter**, and the **details of the entries in each class of the taxonomy** are to be found in the referenced documents.

7.2.1 ~~Application~~ Open System Environment Profiles

The Taxonomy of AEPs is ~~(to be)~~ **OSE Profiles** is defined in ISO/IEC/TR 10000-3.

A single class of OSE Profiles is identified as follows:

P - OSE Profiles

In the context of the scope of OSE as outlined in clause 1, this classification covers the domain of "Generic OSE Profiles".

No classification is assigned to the domain of "Industry Specific OSE Profiles", which are identified in this Technical Report only in concept, and which are not therefore subject to classification or control under the common processes of ISO/IEC.

The domain of "Functional Profiles" comprises a number of classes. The set of classes which corresponds to the concept of OSI Profiles is identified in clause 7.2.2, and the relevant taxonomies are defined in Part 2 of this Technical Report.

The definition of additional classes of Functional Profile is for further study.

7.2.2 OSI Profiles

The Taxonomy of OSI and OSI-related Profiles is defined in ISO/IEC/TR 10000-2.

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

F - Interchange Format and Representation Profiles.

A - Application Profiles using Connection-mode Transport Service (i.e. using T-Profiles).

B - Application Profiles using Connectionless-mode Transport Service (i.e. using U-Profiles).

T - Connection-mode Transport Profiles, related to subnetwork type.

U - Connectionless-mode Transport Profiles, related to subnetwork type.

R - Relay functions between T-Profiles or between U-Profiles.

M - Managed-object Profiles

Other classes or sub-classes of OSI profiles may be required, particularly when the Taxonomy is extended beyond the current OSI orientation.

8 Structure of Documentation for Profiles

8.1 Principles

The requirements for content and format of ISPs are based on the following principles:

- a) Profiles shall be directly related to base standards, and conformance to Profiles shall imply conformance to base standards.
- b) ISPs shall follow the IEC/ISO Rules for the drafting and presentation of International Standards. See Annex A for relevant extracts from these rules, adapted for use in ISPs.
- c) ISPs are intended to be concise documents, which do not repeat the text of the documents to which they refer. The reliance on references to base standards, their PICS proformas (in the case of OSI Profiles), and the use of registered names of objects, are thus essential for the production of concise ISPs.
- d) Profiles making identical use of particular base standards shall be consistent, down to the level of identical wording in the ISPs for identical requirements.
- e) **The definition of one Profile may include a reference to the definition of another Profile in its totality.**

[Ed. Note: US-29 - text transferred from 8.2 Note 3]

8.2 Multi-part ISPs

Many Profiles will be documented and published as individual ISPs. However, where close relationships exist between two or more Profiles (~~for example these relationships documented in general terms in clause 7 of this part of ISO/IEC TR 10000, and in detail in subsequent parts~~), a more appropriate technique can be used.

The need for common text between related Profiles is essential to ensure consistency and interworking, to avoid unnecessary duplication of text, and to aid writers and reviewers of ISPs. Items of common text comprise the definition of a distinct section of a Profile, together with that part of the ~~ISPICS-Profile~~ Requirements List relating to the use of one or more base standards by that section of the Profile.

An ISP can be produced in a number of separate parts, on the analogy of multi-part International Standards, where each part is capable of being separately written, submitted to an ISO/IEC Technical Committee, and approved.

A single-part ISP, or one part of a multi-part ISP, shall not contain the definition of more than one Profile.

The following rules apply to multi-part ISPs:

- a) A multi-part ISP shall contain the definition of a complete Profile or of a related set of Profiles.
- b) A part of a multi-part ISP may contain a section of the definition of one or more Profiles.
- c) Where a multi-part ISP covers more than one Profile, the part structure shall permit each Profile to be the subject of a separate ISP ballot; i.e. its constituent Profiles shall be clearly identifiable, and the multi-part structure shall ensure that this can be accomplished.

- d) *Wherever possible, the references made from one part to another should be to complete parts. However, controlled use of one-way references to clauses of other parts is permitted in order to obtain a reasonable multi-part structure.*

For example, this system of multi-part ISPs is particularly useful in the context of OSI Profiles for defining:

- the set of Tx-Profiles which form a Group, and thus make common use of standards for network-independent functions;
- the set of Rx-profiles which use common relay techniques;
- the Tx, Ux, and Rx-profiles which make common use of sub-network technologies.

In all these cases, a single part of an ISP can be referenced several times from other parts of the same ISP, or from other ISPs, to ensure the identical specification of this common functionality.

Because there may also be potential disadvantages from over-use of the multi-part ISP capability, such as difficulties in gaining approval for a complex linked set of parts, or reduction of the content of a part to a small amount of text, considerable care should be taken with its use.

NOTES

- 1 When a section of text appears in several Profiles, then possibilities exist for sharing the corresponding code (etc.) for the implementation of several Profiles, and the tests applicable to the use of the referenced base standards will be applicable to the testing of several Profiles.
- 2 It follows that it is in the interests of the implementers of ~~OSI~~ **Open Systems** to promote the identification of common sections of text as parts of ISPs, but even more to promote, in future standardization and Profile work, the use of already defined parts of ISPs, so that Profiles fall into a few "common moulds". In particular, this allows implementation of a part of an ISP with confidence that it may be used in the implementation of Profiles as yet undefined, so that products are open to future development.

8.3 Structure of ISPs

~~8.3.1~~ Structure of ISPs for ~~OSI~~ Profiles

The document structure of an ISP for an ~~OSI~~ Profile is as outlined in table 1. This structure represents the sum of the conceptual requirements for the definition of an individual Profile given in clause 6. Where an ISP is divided into several parts, each part shall follow the same format, but with appropriate variations in the contents of its clauses.

This is a general format, and each subsequent part of this Technical Report contains more specific detail of the structure of ISPs for Profiles within its Taxonomy.

8.4 The ~~ISP~~ Profile Implementation Conformance Statement (~~IPICS~~)

NOTE - This subclause is only normative with respect to Profiles referencing OSI Protocol standards with PICS Proformas defined in accordance with ISO/IEC 9646. However, its principles are relevant to any Profile, and should be so interpreted. **Where other base standards do not contain such proformas, the ISPs referencing them are expected to indicate what information is required to claim conformance to the Profiles.**

8.4.1 The ~~P~~ Base Standard ICS

~~It is essential that both the supplier and the user of an OSI product have clear and identical views of the properties of that product. To evaluate the conformance of a particular implementation to a standard, it is necessary to have a statement of the capabilities and options which have been implemented, so that implementation can be tested for conformance against relevant requirements, and against those~~

	FOREWORD
	INTRODUCTION
1.	SCOPE
2.	NORMATIVE REFERENCES
3.	DEFINITIONS
4.	ABBREVIATIONS
5.	CONFORMANCE <i>[Ed. Note: Most existing or proposed ISPs include such a clause.]</i>
6...	Clauses defining requirements related to each base standard (Note 2)
	NORMATIVE ANNEX A. ISPIGS Profile Requirements List
	INFORMATIVE ANNEXES containing explanatory and/or tutorial material as required.
	NOTES
1	Further information concerning the content of the sections listed above is given in Annex A, which is based on the IEC/ISO Directives, Part 3 - Drafting and presentation of International Standards.
2	Where possible, these details shall be presented in a tabular form, consistent with the layout of the referenced standard, and not duplicating the representation required by the ISPIGS-Profile Requirements List.

Table 1

requirements only. Such a statement is called an Implementation Conformance Statement. For that reason (among others),

The standard should contain an indication of the content of such an ICS, preferably as a Proforma for completion by the supplier.

In the case of OSI Protocol standards, a Protocol Implementation Conformance Statement (PICS) Proforma has been defined for use in the base standards by ISO/IEC 9646, Parts 1 and 2.

A PICS is a statement, made by the supplier, in which it is declared whether or not each permitted option has been implemented and, if a choice of values is offered, the values that are supported.

ISO/IEC 9646-2 Annex A defines the requirements for, and provides guidance on, the production of PICS proformas. The body of each PICS proforma shall consist of a set of tables, which in their most general form would be as in figure 2 (based on ISO/IEC 9646-2 Annex A.9).

8.4.2 The ISP Profile ICS

NOTE ISO/IEC 9646 Parts 6 and 7 are under development with respect to Profile implementation conformance requirements, and will be referenced from this Technical report when they are stable.

The method of the supplier providing an implementation conformance statement shall also be used for Profiles, in which case it is called an ISP Implementation Conformance Statement (ISPIGS).

In the same way, the supplier of an implementation claiming conformance to a Profile provides a Profile ICS. However, in the case of the specification of a Profile in an ISP, an ICS Proforma is not provided, since use has to be made of the ICS proformas of the referenced base standards.

The Profile conformance requirements are expressed by:

- a) the ICS proforma of each relevant base standard referenced by the Profile;
- b) the Profile Requirements List, expressing constraints on the status and/or allowed answers in the referenced base standard ICS proformas;

1 | c) if required, a Profile specific ICS proforma, specifying questions which place additional
2 | constraints on the implementation of the Profile, not directly associated with any particular
3 | base standard.

4 |
5 | The supplier of an implementation fills in the ICS proformas (for the base standards and the Profile
6 | specific proforma) to state which conformance requirements of a Profile have been implemented.

7 | 8.4.3 ISPIGS Profile Requirements List (Profile RL)

8 | ~~NOTE—ISO/IEC 9646 Parts 6 and 7 are under development with respect to statements of Profile implementation conformance~~
9 | ~~requirements, and will be referenced from this Technical report when they are stable.~~

10 | An ~~ISPIGS~~ Profile Requirements List (~~IPRL~~) shall be provided for each Profile in an ISP. It shall follow the
11 | structure of the static conformance requirements, presenting

12 | a) the general options of the Profile as a whole;

13 | b) a list of the standards selected and combined in the Profile;

14 | c) for each of these referenced base standards, a section of the ~~IPRL~~, expressing the constraints upon
15 | allowable answers in the corresponding PICS proforma. This section of the ~~IPRL~~ **Requirements**
16 | **List** shall be derived from the PICS proforma of the base standard in question, when available, with
17 | its entries enabled, disabled, or pre-selected according to the Profile's choices (see figure 3).

18 | ~~When a set of PICS is produced in accordance with the IPRL by the supplier of a system implementing the~~
19 | ~~Profile, the set of PICS becomes an ISPIGS, stating the system's conformance to the mandatory and~~
20 | ~~optional features of the Profile, and, via them, its conformance to the selected features of the referenced~~
21 | ~~base standards.~~

22 | It is the purpose of an ~~IPRL~~ Profile RL to specify the Profile's constraints on what may appear in the
23 | "Support" and "Supported" (values etc) columns in the relevant PICS proformas.

24 | The ~~IP~~Profile RL will, in some cases, be a simple list of constraints placed upon the appropriate answers in
25 | the relevant PICS. In other cases, it could be produced by copying selected tables from the relevant base
26 | standards' PICS proformas, removing the column(s) to be completed by the supplier, and adding a new set
27 | of columns giving the ISP requirements, both in terms of status and value ranges.

28 | In the latter case, the constraints on what may appear in the "Support" column can be specified by a Profile
29 | "Status" column, stating whether the capability is mandatory, conditional (with predicates of conditional
30 | status expressions), optional, excluded, out of scope, or not applicable for the Profile.

1 | Similarly, the constraints on what may appear in the "Type/Length/Values Supported" column can be
2 | specified by a Profile "Allowed" column, stating the values or range of values allowed for the item by the
3 | Profile.

4 | In addition, references to relevant clauses in the ISP may be specified by the use of an "ISP References"
5 | column.

6 | Thus, one possible form of the ~~IP~~Profile RL can be considered to be as in figure 3 for each PICS
7 | proforma, although it may be simpler. Non-applicable tables may be omitted and some tables may be
8 | replaced by textual statements of the constraints.

9 | The specification in an ISP of an ~~IP~~Profile RL which is only constructed from explicit references to PICS
10 | proformas of base standards, is possible only if all the PICS proformas of the relevant base standards have
11 | been published as standards, and are in an adequate form to meet the needs of the ISP.

1 | If any PICS proformas of the relevant base standards are not standardized in an adequate form, then the
2 | ISP shall include whatever is necessary to overcome this deficiency, pending production of an adequate
3 | PICS proforma for the base standard. This may involve simply specifying additional questions needed for
4 | the ISP but not yet covered by the PICS proforma, (e.g. a question on whether certain options are
5 | configurable or not). ~~Alternatively, especially~~ If no standard PICS proforma is yet available, the ISP shall
6 | contain an interim version of the relevant PICS proforma. ~~Ideally, This should be kept separate from the~~
7 | Profile requirements **as specified by the Profile RL.** ~~, although by placing the Profile requirements~~
8 | ~~alongside the PICS proforma, it will be possible to provide an integrated PICS proforma and IPRL.~~

9 | Whenever this situation occurs, steps shall be taken to produce an adequate standard for the relevant PICS
10 | proforma. Once such a standard is published, then further steps shall be taken to update the ISP to replace
11 | the PICS proforma material by an ~~IP~~ Profile RL and the necessary reference to the standardized ~~PICS~~
12 | proforma.

13 | NOTE - This ensures that the primacy of the base standard is retained whenever possible, without delaying the publication of urgently
14 | needed ISPs.

15 | In some exceptional cases, the Profile may specify additional Profile-specific conformance requirements
16 | which are wholly outside the scope of any of the base standards referenced. This may require additional
17 | questions/answers in the ~~IP~~ Profile RL, for which the base standard PICS proformas are not appropriate to
18 | reflect this information. **This is called the Profile Specific ICS Proforma. Also, additions or changes**
19 | **reflecting the Profile RL may be needed to the set of test cases which have been defined in the base**
20 | **standards. Therefore care should be taken that the number of such statements is kept as small as**
21 | possible.

22 | **[Ed. Note: Figures 2 and 3 retained from WDTR 10000-1.2, SGFS N430 - see attachment. These**
23 | **require some editing]**

Annex A (normative)

Rules for the drafting and presentation of International Standardized Profiles

A.1 Introduction

The contents of this Annex are binding on the submitters of ISPs.

Clause 8 of this part of ISO/IEC/TR 10000 gives a general specification of the structure required for a Profile definition. It follows the IEC/ISO Directives for drafting and presentation of International Standards as far as is relevant, and this annex contains extracts from the appropriate clauses of that document with modification and comment relating to their use in ISPs. References to clauses of the IEC/ISO Directives are of the form "Rules x.y.z" .

In those cases where an ISP is being produced as a collaborative activity with CCITT under the terms of the ISO/IEC JTC1 Directives, the Drafting rules for Common Text agreed under those procedures shall also apply as appropriate.

[Ed. Note: Some reference to this issue is required; the process of creating the FODxx ISPs in alignment with the DAPs in the T.5xx series has shown this need. Some more specific text may be advisable once the incorporation of definitive reference to the Guide for CCITT and JTC1 Cooperation into the JTC1 Directives is achieved.]

Throughout this annex, which is concerned strictly with documentation content and layout, reference is made to ISPs. As is made clear in clause 8, an ISP, or part thereof, may contain a whole Profile definition, or part of one or more Profile definitions. The wording of this annex assumes that it is describing an undivided ISP which defines one Profile in its entirety. Its application to the other cases is easily deduced. Note however that each part of a multi-part ISP shall use the same format as far as is appropriate.

A.2 General Arrangement (Rules 2.1)

The elements which together form an ISP are classified into three groups:

- preliminary elements are those elements that identify the ISP, introduce its content, and explain its background, its development and its relationship with other standards and ISPs;
- normative elements are those elements setting out the provisions with which it is necessary to comply in order to be able to claim conformity with the ISP;
- supplementary elements are those elements that provide additional information intended to assist the understanding or use of the ISP.

These groups of elements are described in the following clauses.

Notes integrated in the text (see A.6.3) may be part of any element except the title page, the title and footnotes.

A.3 Preliminary Elements

A.3.1 Title Page (Rules 2.2.1)

The title page is prepared in a standard format by the office of the Information Technology Task Force.

The reference number is allocated by the office of the Information Technology Task Force.

A.3.2 Contents (Rules 2.2.2)

The contents is an optional preliminary element, but is necessary if it enables an overall view of the ISP to be obtained, and facilitates its consultation. The contents should normally list only the clauses and the annexes. All the elements listed shall be cited with their full titles.

A.3.3 Foreword (Rules 2.2.3)

The foreword shall appear in every ISP; it consists of a general part giving information relating to the organization responsible, and to International Standards in general, and a specific part giving as many of the following as are appropriate:

- an indication of the organization or committee which prepared the ISP; information regarding the approval of the ISP;
- a statement that the ISP cancels or replaces other documents in whole or in part;
- a statement of significant technical changes from the previous edition;
- a statement of which annexes are normative and which are informative.

A.3.4 Introduction (Rules 2.2.4)

The introduction shall appear in every ISP; it gives specific information about the process used to draft the ISP, and about the degree of international harmonization that it has received. It contains material similar to that in the "Explanatory Report" provided by the originating organization when it submits the proposed draft ISP (PDISP) for approval.

A.4 General Normative Elements

A.4.1 Title (Rules 2.3.1)

The wording of the title shall be established with the greatest care; while being as concise as possible, it shall indicate, without ambiguity, the subject matter of the ISP in such a way as to distinguish it from that of any other ISP or International Standard, without going into unnecessary detail. Any necessary additional particulars shall be given in the Scope.

The title shall be composed of the following three elements:

a) **an introductory element:**

The title of the originating Technical Committee, for example:

Information technology

indicating ISO/IEC JTC 1.

b) **an identification element:**

1 *International Standardized Profile(s) XXXnnn*

2 indicating by the identifier *XXXnnn* the place in the Taxonomy which this Profile occupies.

3 NOTE - If a multi-part ISP defines more than one Profile, or if an ISP only defines common section(s) of a number of
4 Profiles, this element may either enumerate all Profile Identifiers, or use the convention of "X" for a variable letter, and "n" for
5 a variable number; e.g. "TXnnn" or "AFT1n".

- 6 c) **a main element** indicating the subject matter of the ISP, as recorded in the Taxonomy. For a multi-
7 part ISP, this element shall be subdivided into a general title element common to all parts, and a
8 specific title element for each part; where necessary, this specific element may include the identifier
9 of an individual Profile.

10 Example:

11 *Information technology - International Standardized Profiles AFTnn - File Transfer, Access and Management*
12 *- Part 3: AFT11 - Simple File Transfer (Unstructured).*

13 **A.4.2 Scope (Rules 2.3.2)**

14 This element contains three subclauses as follows:

15 a) **General**

16 This element shall appear at the beginning of the ISP or ISP part, to define without ambiguity the
17 purpose and subject matter of the document, thereby indicating the limits of its applicability. It shall
18 not contain requirements. **It shall take the form of an Executive Summary, suitable for use**
19 **independently of the ISP.**

20 b) **Position within the Taxonomy**

21 If the ISP or ISP part defines a Profile, it shall relate the Profile it defines to the Taxonomy,
22 published as a part of ISO/IEC/TR 10000. The element shall include the identifier and title of the
23 Profile defined within the ISP or ISP part.

24 c) **Scenario**

25 If the ISP, or ISP part, defines a Profile, it shall include (where appropriate) the "scenario" of the
26 Profile - an illustration of the environment within which it is applicable.

27 In the case of Profiles using OSI base standards, this shows in a simplified graphic form the OSI
28 system which is covered by this Profile, and other typical systems/subnetworks with which this OSI
29 system shall be capable of interworking.

30 **A.4.3 Normative References (Rules 2.3.3)**

31 This element shall give a list of normative documents (approved International Standards, ISPs, CCITT
32 Recommendations, or, where so approved, Technical Reports - see clause 6.1.2) with their titles and
33 publication dates, to which reference is made in the text in such a way as to make them indispensable for
34 the application of the ISP. Where published amendments or technical corrigenda (errata) to base standards
35 are relevant to the definition of the Profile in such a way as to have a potential impact on interworking, then
36 they shall be explicitly referenced here.

37 Where a referenced document is published jointly by both ISO/IEC and CCITT, then the identity of the
38 corresponding CCITT Recommendation shall also be given.

Reference shall also be made to ISO/IEC/TR 10000 on the Framework and taxonomy of International Standardized Profiles.

For a multi-part ISP, documents shall be listed only in the parts in which they are referenced.

The list shall be introduced by the following wording:

The following documents contain provisions which, through reference in this text, constitute provisions of this International Standardized Profile. At the time of publication, the editions indicated were valid. All documents are subject to revision, and parties to agreements based on this International Standardized Profile 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 CCITT maintains published editions of its current Recommendations.

The list shall not include the following:

- documents that are not publicly available;
- documents to which only informative reference is made;
- documents which have merely served as references in the preparation of the ISP.

Such documents can be listed in an informative annex (see A.6.1) entitled "Bibliography". In the case of documents which are not publicly available, full details shall be given there of their source organization, and of how defect reporting and error notification shall be performed.

A.5 Technical Normative Elements

A.5.1 Definitions (Rules 2.4.1)

This is an optional element giving definitions necessary for the understanding of certain terms used in the ISP. The definitions shall be introduced by the following wording:

For the purposes of this International Standardized Profile, the following definitions apply.

Rules for the drafting and presentation of terms and definitions are given in IEC/ISO Directives Part 3, Annex B.

In most cases, an ISP can indicate that all terms used are defined in the referenced base standards, and in such a case, they shall not be repeated within the ISP.

A.5.2 Symbols and Abbreviations (Rules 2.4.2)

This is an optional element giving a list of the symbols and abbreviations necessary for the understanding of the ISP.

In most cases, an ISP can indicate that all abbreviations used are defined in the referenced base standards, and in such a case, they shall not be repeated within the ISP.

A.5.3 Requirements

This element shall commence with a clause entitled "Conformance", which shall state the requirements specified in the ISP, indicating in general terms the claims that a conforming implementation shall make, and on which it shall be tested for conformance. This shall relate to the use made of each of the main base standards referenced in the Profile definition. The content and layout of

1 | ~~these~~ **this and subsequent** clauses is not defined, but can be tailored to the type of material which has to
2 | be specified in each case.

3 | The information given shall not repeat the text of the base standards, but shall define the choices made in
4 | the Profile of classes, subsets, options and ranges of parameter values. It shall be in the form of static and
5 | dynamic conformance requirements, and may where appropriate be given in tabular form. Preference shall
6 | be given to recording as much as possible of this information once and once only in the **Profile**
7 | Requirements List (~~e.g. for OSI Profiles, in the ISPIGS Requirements List~~) in an annex to the ISP.

8 | See clauses 6 and 8 for more detail concerning the nature of the content required in this element of an ISP.

9 | **A.5.4 Test Methods (Rules 2.4.5)**

10 | The possibility of including detail of testing methods and test cases for ISPs is for further study.

11 | **A.5.5 Normative Annexes (Rules 2.4.8)**

12 | Normative annexes are integral sections of the ISP which, for reasons of convenience, are placed after all
13 | other normative elements. The fact that an annex is normative (as opposed to informative - see A.6.1) shall
14 | be made clear by the way in which it is referred to in the text, by a statement to this effect in the foreword
15 | (see A.3.3), and by an indication at the head of the annex itself.

16 | The first normative annex shall be the ~~ISPIGS Profile~~ Requirements List (~~e.g. the IPRL~~) - see clause 8.4.

17 | **A.6 Supplementary Elements**

18 | **A.6.1 Informative Annexes (Rules 2.5.1)**

19 | Informative annexes give additional information, and are placed after the normative elements of an ISP.
20 | They shall not contain requirements to which an implementation shall conform. The fact that an annex is
21 | informative (as opposed to normative - see A.5.5) shall be made clear by the way in which it is referred to in
22 | the text, by a statement to this effect in the foreword (see A.3.3) and by an indication at the head of the
23 | annex itself.

24 | The details of any references to National or Regional standards shall be placed in such an informative
25 | annex (see also clause 6.1 and A.4.3)

26 | Information on user requirements to which an ISP is a response may be placed here.

27 | **A.6.2 Footnotes (Rules 2.5.2)**

28 | Footnotes give additional information, but their use shall be kept to a minimum. They shall not contain
29 | requirements.

30 | **A.6.3 Notes Integrated in the text (Rules 2.5.3)**

31 | Notes integrated in the text of an ISP may be used only for giving information which is essential to the
32 | understanding of the document. They shall not contain requirements.

33 | **A.6.4 Notes to tables and figures (Rules 2.5.4)**

34 | Notes to tables and to figures shall be treated independently from footnotes (see A.6.2) and notes integrated
35 | in the text (see A.6.3). They shall be located within the frame of the relevant table or immediately above the
36 | title of the relevant figure. A separate numbering sequence shall be used for each table and each figure.
37 | Such notes may contain requirements.

A.7 Editorial and Layout Information

Further information on layout of text, tables, figures, and footnotes is given in other sections of the Rules, which shall be applied by editors of ISPs. Information is also given in Rules Annex C on verbal forms to be used in drafting statements of requirements, recommendations, permissions, and possibilities, which shall also apply to ISPs.

[Ed. Note: Former Annexes B and C removed; may reappear in some form in Part 2.]

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Annex B (informative)

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Bibliography of Referenced (~~Non-~~Informative) International Standards and CCITT Recommendations

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[Ed. Note: To be completed as required to match actual document references in the text of this revision of TR 10000-1. At present, there do not appear to be any.]

12

B.1 Introduction

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14

This annex identifies those International Standards and CCITT Recommendations referenced in examples in this part of ISO/IEC/TR 10000.

15

B.2 List of referenced International Standards

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17

B.3 List of referenced International Standardized Profiles

18

B.4 List of referenced CCITT Recommendations

