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DRAFT

INTERNATIONAL STANDARDIZED PROFILE

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Information technology — International Standardized Profile FDI2 — Directory Data Definitions — MHS Use of the Directory

Technologies de l'information — Profil normalisé international FDI2 — Définitions des données d'annuaire — Emploi MHS de l'annuaire

Please see the administrative notes on page i-2

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Foreword

ISO (the International Organization for Standardization) and IEC (the International Electrotechnical Commission) form the specialized system for worldwide standardization. National bodies that are members of ISO or IEC participate in the development of International Standards through technical committees established by the respective organization to deal with particular fields of technical activity. ISO and IEC technical committees collaborate in fields of mutual interest. Other international organizations, governmental and non-governmental, in liaison with ISO and IEC, also take part in the work.

In the field of information technology, ISO and IEC have established a joint technical committee, ISO/IEC JTC 1. In addition to developing International Standards, ISO/IEC JTC 1 has created a Special Group on Functional Standardization for the elaboration of International Standardized Profiles.

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

Draft International Standardized Profiles are circulated to national bodies for voting. Publication as an International Standardized Profile requires approval by at least 75 % of the national bodies casting a vote.

International Standardized Profile ISO/IEC ISP 11189 was prepared with the collaboration of

— Asia-Oceania Workshop (AOW);

— European Workshop for Open Systems (EWOS);

— Open Systems Environment Implementors' Workshop (OIW).

This second edition cancels and replaces the first edition (ISO/IEC ISP 11189:1997), which has been technically revised.

Attention is drawn to the possibility that some of the elements of this International Standardized Profile may be the subject of patent rights. ISO and IEC shall not be held responsible for identifying any or all such patent rights.

Annex A forms a normative part of this International Standardized Profile. Annex B is for information only.

Introduction

The concept and structure of International Standardised Profiles for Information Systems are laid down in ISO/IEC TR 10000. The purpose of an International Standardised Profile is to recommend when and how certain information technology standards shall be used. This International Standardised Profile ISO/IEC ISP 11189 specifies application profile FDI2 as defined in ISO/IEC TR 10000-2.

ISO/IEC 10616 profiles information to be stored within the directory which is common to a variety of application. ISO/IEC ISP 11189 augments this information by specific information for use with Message Handling Systems.

To support the implementation of the Directory as defined by ITU-T Rec. X.500 - series of Recommendations | ISO/IEC 9594, this ISP gives requirements that are applicable to implementations of DSAs. Additionally, these requirements may guide Directory users and administrative authorities in defining their needs for the use of the Directory.

The primary objective of this International Standardized Profile is to define the minimum capabilities that DSAs must have to support an MHS application's view of Directory information. It does this by specifying a minimum set of structure and naming elements for the DIT which a DSA must be capable of holding and accessing, and other minimum schema requirements.

This International Standardized Profile does not limit DSAs to these minimum capabilities - DSAs that comply with this ISP and which have no additional information handling (storage, retrieval and modification) capabilities may not be adequate for many purposes, and Implementors are strongly encouraged to provide such additional capabilities.

Likewise, this International Standardized Profile does not limit Naming Authorities in any way, e.g. restrict their selection of object classes or naming attributes to those which are required to be supported by this Profile. Rather, it guarantees that selections made within the scope of this International Standardized Profile will be within the capabilities of DSAs compliant with this International Standardized Profile.

Information technology - International Standardized Profile FDI2 - Directory Data Definitions - MHS Use of the Directory

1 Scope

1.1 General

ISO/IEC ISP 10616 profiles information to be stored within the directory which is common to a variety of applications. This International Standardized Profile augments this information by MHS specific information.

Statements and conformance requirements stated in ISO/IEC ISP 10616 for the information profiled by ISO/IEC ISP 10616 are also valid for the MHS specific information profiled by this International Standardized Profile.

This International Standardized Profile specifies the use of the Directory by MHS, using existing object classes and attribute type definitions from the Directory specifications and the MHS specifications. The scope of application of this International Standardized Profile covers the broad area of MHS Use of the Directory as defined in annex A of ISO/IEC 10021-2 as indicated below:

- Determining an MHS User's OR-Address from the directory name
- MHS User capability assessment
- Determining information about the application entities supporting MTAs, MSs and UAs
- Storing and retrieving information on distribution lists for distribution list expansion.

1.2 Position within the taxonomy

This International Standardized Profile is identified by ISO/IEC TR 10000-2 as "Information technology - International Standardized Profile - Directory Data Definitions - MHS Use of the Directory".

1.3 Scenario

An MHS application using its associated DUA ,directly or indirectly obtains Directory information by accessing one or more DSAs in the Directory (See figure 1).

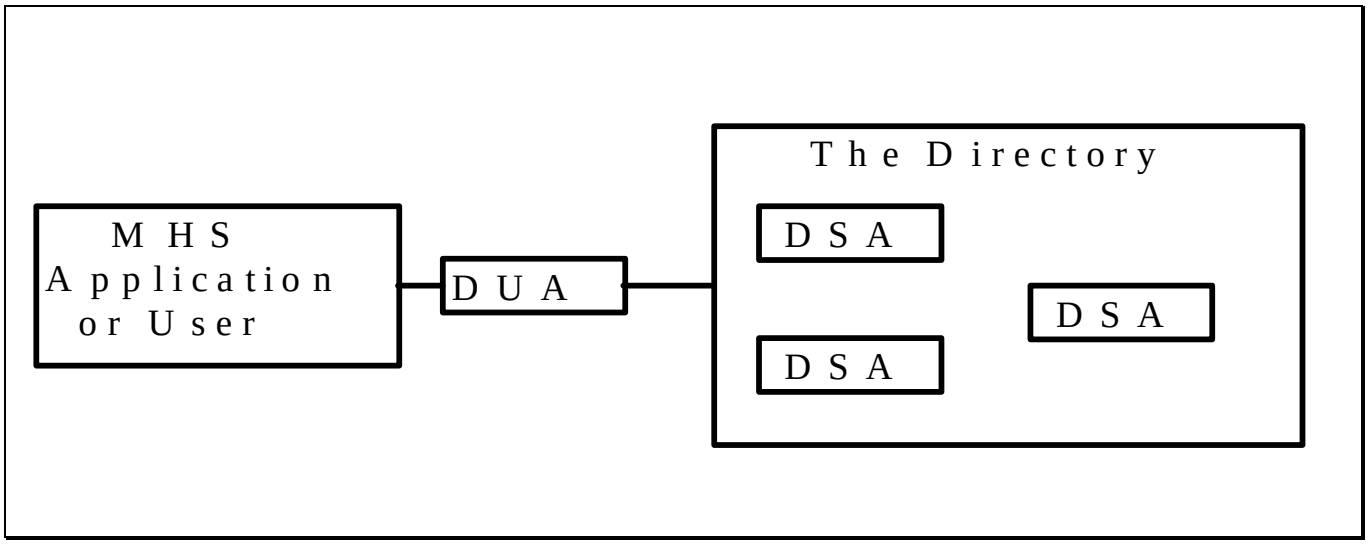

Figure 1 - MHS use of the Directory Scenario

2 Normative References

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 ITU-T maintains published editions of its current Recommendations.

2.1 ISP Framework Documents

ISO/IEC TR 10000-1: 1995~~8~~, *Information technology - Framework and taxonomy of International Standardized Profiles - Part 1: General principles and documentation framework.*

ISO/IEC TR 10000-2: 1995~~8~~, *Information technology - Framework and taxonomy of International Standardized Profiles - Part 2: Principles and Taxonomy for OSI profiles.*

ISO/IEC ISP 10616: 1995, *Information technology - International Standardized Profile FDI11 - Directory data definitions - Common Directory Use (Normal).*

2.2 Directory Standards - 1998 edition

ISO/IEC 9594-1: 1998, *Information technology - Open Systems Interconnection - The Directory: Overview of concepts, models and service. [See also Recommendation X.500 (1997)].*

ISO/IEC 9594-2: 1998, *Information technology - Open Systems Interconnection - The Directory: Models. [See also Recommendation X.501 (1997)].*

ISO/IEC 9594-5: 1998, *Information technology - Open Systems Interconnection - The Directory: Protocol specifications [See also Recommendation X.519 (1997)].*

ISO/IEC 9594-6: 1998, *Information technology - Open Systems Interconnection - The Directory: Selected attribute types. [See also Recommendation X.520 (1997)].*

ISO/IEC 9594-7: 1998, *Information technology - Open Systems Interconnection - The Directory: Selected object classes. [See also Recommendation X.521 (1997)].*

2.3 Directory Standards - 1990 edition informative references

The following informative references to the 1990 edition of the directory standards are included because the object classes, attributes and matching rules specified in this International Standardized Profile can be used on Directory systems conforming to the 1990 Directory standards. The contexts cannot.

ISO/IEC 9594-1: 1990, *Information technology - Open Systems Interconnection - The Directory - Part 1: Overview of concepts, models and service. [See also Recommendation X.500 (1988)].*

ISO/IEC 9594-2: 1990, *Information technology - Open Systems Interconnection - The Directory - Part 2: Models. [See also Recommendation X.501 (1988)].*

ISO/IEC 9594-5: 1990, *Information technology - Open Systems Interconnection - The Directory - Part 5: Protocol specifications [See also Recommendation X.519 (1988)].*

ISO/IEC 9594-6: 1990, *Information technology - Open Systems Interconnection - The Directory - Part 6: Selected attribute types. [See also Recommendation X.520 (1988)].*

ISO/IEC 9594-7: 1990. *Information technology - Open Systems Interconnection - The Directory - Part 7: Selected object classes. [See also Recommendation X.521 (1988)].*

NOTE - In the 1990 edition of ISO/IEC 9594, the syntax of attributes is defined separately using the ATTRIBUTE-SYNTAX ASN.1 Macro. In the 1995 edition of ISO/IEC 9594, the syntax of attributes is specified within the attribute definition itself.

2.4 Directory Standards - 1995 edition informative references

The following informative references to the 1995 edition of the directory standards are included because the object classes, attributes and matching rules specified in this International Standardized Profile can be used on Directory systems conforming to the 1995 Directory standards. The contexts cannot.

ISO/IEC 9594-1: 1995, *Information technology - Open Systems Interconnection - The Directory: Overview of concepts, models and service. [See also Recommendation X.500 (1995)].*

ISO/IEC 9594-2: 1995, *Information technology - Open Systems Interconnection - The Directory: Models. [See also Recommendation X.501 (1995)].*

ISO/IEC 9594-5: 1995, *Information technology - Open Systems Interconnection - The Directory: Protocol specifications [See also Recommendation X.519 (1995)].*

ISO/IEC 9594-6: 1995, *Information technology - Open Systems Interconnection - The Directory: Selected attribute types. [See also Recommendation X.520 (1995)].*

ISO/IEC 9594-7: 1995, *Information technology - Open Systems Interconnection - The Directory: Selected object classes. [See also Recommendation X.521 (1995)].*

2.5 Message Handling Systems Standards

ISO/IEC 10021-2: 199~~6~~9, *Information technology - Message Handling Systems (MHS) - Part 2: Overall architecture [See also ITU-T Recommendation X.402 (199~~6~~9)].*

ISO/IEC 10021-5: 199~~9~~6*, Information technology - Message Handling Systems (MHS) - Part 5: Message store abstract service definition. [See also ITU-T Recommendation X.413 (199~~9~~5)].*

~~NOTE 1 - This International Standardized Profile is based on the 1996 versions of ISO/IEC 10021 and X.400 Recommendations since the earlier versions are considered to be faulty.~~

~~NOTE 2 - In the 1990 edition of ISO/IEC 9594, the syntax of attributes is defined separately using the ATTRIBUTE-SYNTAX ASN.1 Macro. In the 1995 edition of ISO/IEC 9594, the syntax of attributes is specified within the attribute definition itself.~~

3 Definitions

For the purposes of this International Standardized Profile, definitions apply as defined in the referenced standards. In addition, the following terms are defined.

3.1 General

The following definitions are made in ISO/IEC ISP 10616:

Table 1 - Definitions used from ISO/IEC ISP 10616

Term	Reference in ISO/IEC ISP 10616
Auxiliary object class	3.1.1
Structural object class	3.1.2
Structure Element	3.1.3

The following terms are defined for the purposes of this International Standardized Profile:

3.1.1 Functional Group

A specification of one or more Directory schema components (object classes, attribute types and associated attribute syntaxes, matching rules and structure elements) or other identifiable features specified in base standards which together support a significant optional area of DSA functionality.

3.2. Support classification

To specify the support level of schema elements for this International Standardized Profile, the following terminology is defined.

3.2.1 Mandatory support (m):

3.2.1.1 General

Mandatory requirement for support. A feature (object class, attribute type and associated attribute syntax, structure element, or matching rule, or context) is supported by a DSA implementation if the DSA is able to process the feature in accordance with the base standard, ISO/IEC ISP 10616 or as specified in this International Standardized Profile.

3.2.1.2 Mandatory support for Object Classes

Support of object classes by a DSA conformant with FDI2 requires the DSA to be able to store, modify and retrieve, via Directory operations, an entry of its fragment of the DIT, if the entry is associated with supported object classes and the following conditions are fulfilled:

a) The entry lies within the DIT structure described in clause 6 and in A.6.5.1;

b) The entry contains all MUST CONTAIN attributes of its object classes;

c) The entry contains no other than MUST CONTAIN and MAY CONTAIN attributes of its object classes.

3.2.1.3 Mandatory support for Attributes

A DSA conformant with FDI2 shall support an attribute type as follows:

a) The DSA shall perform, on the original inclusion or on a subsequent modification attempt of an attribute, the checking algorithm which is associated with the syntax of the attribute, when required;

b) The DSA shall check that the number of attribute values complies with the multivalued element of the attribute definition;

c) The DSA shall check that the attribute value(s) conform with the bounds defined in ITU-T Rec. X.520 annex C (which is not an integral part of ISO/IEC 9594-6);

d) The DSA shall support the **equality** matching algorithm that is associated with the attribute, and shall execute this matching algorithm in a manner that conforms with ITU-T Rec. X.500 series | ISO/IEC 9594 requirements as clarified in 9.3 of ISO/IEC ISP 10616.

NOTE - the word 'equality' has been added to the original FDI11 text in ISO/IEC ISP 10616 to avoid the necessity of mandating all of the OR-Address and OR-Name attribute matching rules which have been defined in ISO/IEC 10021.

e) The DSA shall support the attribute for each supported object class which references that attribute.

f) The DSA shall be able to check values of the attribute syntax associated with the attribute for syntactical correctness in compliance with limitations as defined by ITU-T Rec. X.520, annex C and additional rules stated in clause 9 of ISO/IEC ISP 10616.

NOTE - Attribute Syntaxes are separately defined in the 1988/90 editions of the Directory documents and referenced by the 1988/92 editions of the Message Handling Systems documents. In the 1993/95 Directory documents and the 1995/7 Message Handling System documents, Attribute Syntaxes are implicitly defined in the definition of Attributes.

3.2.1.4 Mandatory support for Matching Rules

Mandatory support of a matching rule implies the DSA's ability to perform matches according to rules defined in ITU-T Rec. X.520 | ISO/IEC 9594-6 as well as the rules defined in annex D subclause 12.4 and the additional rules stated in ISO/IEC ISP 10616, 9.4. Support for a Matching Rule implies that it is supported for all attributes which reference the matching rule;

3.2.1.5 Mandatory support for Structure Elements

(refer to clause 6 of ISO/IEC ISP 10616). The DSA complies with a structure element for an entry of a particular structural object class if:

a) its superior entry complies with at least one of the superior structure elements;

b) it is associated with the structural object class;

c) its RDN is formed using the naming attribute(s).

3.2.1.6 Mandatory support for Contexts

A DSA shall be able to store a list of contexts associated with each value of an attribute. It shall be able to supply all the associated context properties with each attribute when the values of an attribute are read. Furthermore, the DSA shall be capable of selecting values of an attribute based on properties of the associated contexts.

3.2.2 Optional support (o)

An implementation is not required to support the element (object class, attribute types and associated attribute syntaxes, structure element or matching rule). If support is claimed, the element shall be treated as if it were specified as mandatory for support.

3.2.3 Conditional support (c)

The element (object class, attribute type and associated attribute syntax, structure element or matching rule) shall be supported under the conditions specified in this International Standardized Profile. If these conditions are met, the element shall be treated as if it were specified as mandatory support. If these conditions are not met, the element shall be treated as if it were specified as optional support.

3.2.4 Not applicable (–)

The element is not applicable in the particular context in which this classification is used.

4 Abbreviations

The following abbreviations are defined in ISO/IEC 9594

DIB	Directory Information Base
DIT	Directory Information Tree
DN	Distinguished Name
DSA	Directory Service Agent
DUA	Directory User Agent
RDN	Relative Distinguished Name

The following abbreviations are defined in other standards:

DL Distribution List - is defined in ISO/IEC 10021 - 2
ISP International Standardized Profile - is defined in ISO/IEC TR 10000-1

The following abbreviation is defined in this Profile

FG Functional Group

5 Conformance

This International Standardized Profile states requirements placed upon DSA implementations to achieve interworking. A claim of conformance to it is a claim that:

- all requirements in the relevant directory base standards are satisfied. The object classes, attributes, matching rules and structure elements profiled in this ISP are equally valid for implementations of both the 1990 and 1995 editions of the directory protocols;
- all requirements in ISO/IEC ISP 10616 are satisfied;
- all requirements in the following clauses and in annex A of this International Standardized Profile are satisfied. Annex A states the relationship between these requirements and those of the base standards.

5.1 Conformance Statement

For each implementation claiming conformance to profile FDI2 as specified in this International Standardized Profile, a PICS shall be made available stating support or non-support of each option identified in this International Standardized Profile. The scope of conformance to FDI2 is restricted to DSAs.

Implementations for which conformance to FDI2 is claimed shall implement all the mandatory (m) support object classes, attribute types and associated attribute syntaxes, matching rules and structure elements specified in annex A and the conformance statement shall state which optional (o) Object Classes, Attribute Types and associated Attribute Syntaxes and Matching Rules are implemented.

5.2 Basic Requirements and Functional Groups

Annex A specifies the basic requirements for support of object classes, attributes and associated attribute syntaxes and matching rules for conformance to FDI2. Basic requirements specify the level of support required by all conformant DSAs. The basic requirements are further defined in 5.4 and classified in the 'Basic' column of the tables in annex A. All implementations for which conformance to FDI2 is claimed shall support the basic requirements.

Annex A also specifies any additional requirements for support of object classes, attributes and associated attribute syntaxes and matching rules if support for an optional functional group (FG) is claimed. The following clauses summarise the functionality supported by each of the optional FGs.

5.2.1 The Distribution List Functional Group - DL

This specifies the object classes, attributes and associated attribute syntaxes, matching rules and structure elements for holding specifications of MHS Distribution Lists in the Directory. The requirements of the DL functional group are further specified in 5.5 and classified in the 'DL' column of the tables in annex A.

5.2.2 The Additional Matching Rules Functional Group - AMR

This specifies a set of non-exact match rules which are comparatively easy to implement.

5.2.3 The Substring Matching Rules Functional Group - SMR

This specifies a group of matching rules which involve matching on substrings.

5.3 Conformance to ISO/IEC ISP 10616

Conformance to FDI2 implies conformance to ISO/IEC ISP 10616 as a precondition.