INTERNATIONAL STANDARDIZED PROFILE

ISO/IEC ISP 11189

First edition
1997-12-15

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

Reference number
ISO/IEC ISP 11189:1997(E)

Contents

Foreword

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

In the field of information technology, ISO and IEC have established a joint technical committee, ISO/IEC JTC1. In addition to developing International Standards, ISO/IEC JTC1 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 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

- OSI Asia-Oceania Workshop (AOW);
- European Workshop for Open Systems (EWOS);
- OSE Implementors' Workshop (OIW).

Annex A forms an integral 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).

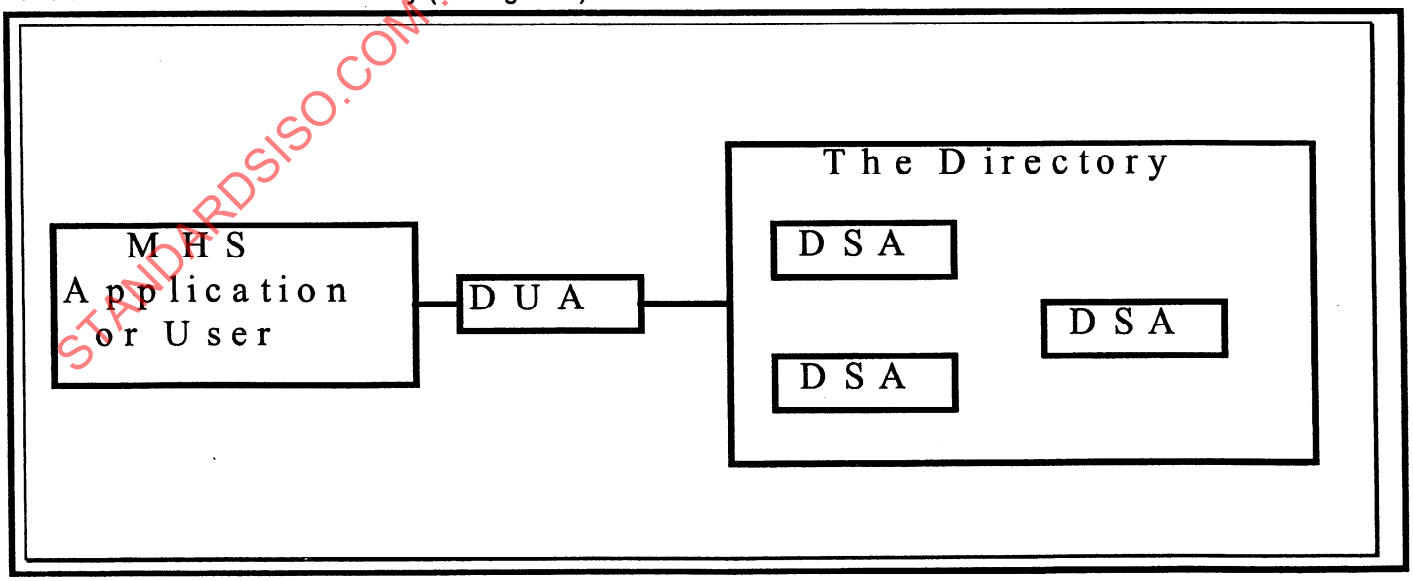

Figure 1 - MHS use of the Directory Scenario

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, *Information technology - Framework and taxonomy of International Standardized Profiles - Part 1: General principles and documentation framework.*

ISO/IEC TR 10000-2: 1995, *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 - 1990 edition

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)].*

2.3 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.

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)].*

2.4 Message Handling Systems Standards

ISO/IEC 10021-2: 1996, *Information technology - Message Handling Systems (MHS) - Part 2: Overall architecture [See also ITU-T Recommendation X.402 (1996)].*

ISO/IEC 10021-5: 1996, *Information technology - Message Handling Systems (MHS) - Part 5: Message store abstract service definition. [See also ITU-T Recommendation X.413 (1995)].*

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) 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).

3.2.2 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.

The requirements formulated in ISO/IEC ISP 10616 with respect to supported object classes, supported attribute types and associated attribute syntaxes according to ISO/ISP 10616 are also valid for the additional supported object classes, supported attribute types and associated attribute syntaxes according to this International Standardized Profile.

Storage and modification of entry information imply checking and matching of attribute values for which ***equality*** matching is defined for that attribute type.

5.4 Conformance to Basic Requirements

All DSAs for which conformance to this profile is claimed shall support all of the object classes, attributes, matching rules and structure elements of the basic requirements as classified in the 'Basic' column of the tables in annex A.

A DSA for which conformance to this profile is claimed shall, after suitable set up, be capable of storing, modifying and retrieving entries which fulfil all of the following conditions:

- The entry lies within the part of the scope of the minimum set of structure and naming elements specified in clause 6;
- The entry's object classes are part of the set of those mandatory object classes specified in A.6.4.1 of this profile and A.6.4.1 of ISO/IEC ISP 10616, and the subset of optional object classes specified in A.6.4.2 of this profile and A.6.4.2 of ISO/IEC ISP 10616 for which support is claimed for the DSA as classified in the 'basic' columns of the tables;
- The entry's attributes are part of the set of mandatory attribute types specified in A.6.4.2 of this profile and A.6.4.2 of ISO/IEC ISP 10616, and the subset of optional attribute types specified in A.6.4.2 of this profile and A.6.4.2 of ISO/IEC ISP 10616 as classified in the 'basic' columns of the tables.

In addition to the matching rules mandated by ISO/IEC ISP 10616, the DSA shall support the set of mandatory matching rules specified in the 'basic' column of A.6.5.4, and may support those optional matching rules specified in the 'basic' column of A.6.5.4.

5.5 Distribution List Functional Group Conformance

A DSA for which conformance to the Distribution List Functional Group of this profile is claimed shall, after suitable set up, be capable of storing, modifying and retrieving entries which fulfil all of the following conditions:

- The entry lies within the part of the scope of the minimum set of structure and naming elements specified in clause 6;

- The entry's object classes are part of the set of those mandatory object classes specified in A.6.4.1 of this profile and A.6.4.1 of ISO/IEC ISP 10616, and the subset of optional object classes specified in A.6.4.2 of this profile and A.6.4.2 of ISO/IEC ISP 10616 for which support is claimed for the DSA as classified in the 'DL' columns of the tables;

- The entry's attributes are part of the set of mandatory attribute types specified in A.6.4.2 of this profile and A.6.4.2 of ISO/IEC ISP 10616, and the subset of optional attribute types specified in A.6.4.2 of this profile and A.6.4.2 of ISO/IEC ISP 10616 as classified in the 'DL' columns of the tables.

An implementation shall support the set of mandatory matching rules specified in the 'DL' column of A.6.5.4, and may support those optional matching rules specified in the 'DL' column of A.6.5.4.

5.6 Additional Matching Rules Functional Group conformance

DSAs for which conformance to the Additional Matching Rules Functional Group is claimed shall support those Matching Rules classified by 'm' in column AMR of Table A.6.5.4.

5.7 Substring Matching Rules Functional Group conformance

DSAs for which conformance to the Substring Matching Rules Functional Group is claimed shall support those Matching Rules classified by 'm' in column SMR of Table A.6.5.4.

5.8 DUA conformance

DUAs typically need schema information as outlined in FDI2 to support an MHS application's use of the Directory. However, FDI2 makes no statements about DUA conformance.

6 Conformance to DIT Structure

The purpose of this clause is to relate information specified in this International Standardized Profile to the minimum set of structure and naming elements defined in ISO/IEC ISP 10616 and thus to provide locations for entries of selected object classes.

The DIT structure which shall be supported as a minimum by DSA implementations for which conformance to FDI2 is claimed is the superset of those defined in ISO/IEC ISP 10616, and structure elements listed in A.6.5.1 of this profile.

Subclause A.6.5.2 defines how additional object classes defined in clause 7 are related to these structure elements.

This DIT structure is supported in the sense that a conformant DSA shall be capable of storing, modifying and retrieving entries which are part of a tree with this structure (for a more formal definition see ISO/IEC ISP 10616).

7 Conformance to Object Classes

The following object classes, all of which are defined in ISO/IEC 10021 - 2, shall be supported as specified in annex A of this profile, in addition to those specified and mandated in ISO/IEC ISP 10616:

- mhs-distribution-list
- mhs-message-transfer-agent
- mhs-message-store
- mhs-user
- mhs-user-agent

8 Conformance to Attribute Types

The following attribute types and their associated syntaxes, all of which are defined in ISO/IEC 10021 - 2, shall be supported as specified in annex A of this profile for conformance to this International Standardized Profile in addition to those defined in ISO/IEC ISP 10616:

- mhs-acceptable-eits
- mhs-deliverable-content-types
- mhs-deliverable-classes
- mhs-deliverable-eits
- mhs-dl-archive-service
- mhs-dl-members
- mhs-dl-policy
- mhs-dl-submit-permissions
- mhs-dl-subscription-service
- mhs-exclusively-acceptable-eits

NOTE - In previous versions this was called 'mhs-deliverable-eits'

- mhs-maximum-content-length
- mhs-message-store-dn
- mhs-or-addresses
- mhs-or-address-with-capabilities
- mhs-related-lists
- mhs-supported-attributes
- mhs-supported-automatic-actions
- mhs-supported-content-types
- mhs-supported-matching-rules
- mhs-unacceptable-eits

NOTE - Since the 1995 Directory documents and 1995 Message Handling Systems documents do not explicitly specify attribute syntaxes, the requirements for conformance to attribute syntaxes are considered to be dealt with as an implicit part of conformance to attribute types.

9 Conformance to Matching Rules

9.1 Additional Matching Rules Functional Group

The following matching rules shall be supported as specified in annex A Table 6.5.4 column AMR of this profile for conformance to the FDI2 Additional Matching Rule Functional Group in addition to the equality matching rules and those defined in ISO/IEC ISP 10616 and in addition to the equality matching rules:

- oRAddressElementsMatch
- oRNameElementsMatch
- oRNameMatch
- oRNameSingleElementMatch

9.2 Substring Matching Rules Functional Group

The following matching rules shall be supported as specified in annex A Table 6.5.4 column SMR of this profile for conformance to the FDI2 Substring Matching Rule Functional Group in addition to the equality matching rules and those defined in ISO/IEC ISP 10616 and in addition to the equality matching rules:

- oRAddressSubstringElementsMatch
- oRNameSubstringElementsMatch

Annex A[1]

(normative)

ISPICS Proforma

for ISO/IEC ISP 11189 (FDI2)

In the event of a discrepancy becoming apparent in the body of this International Standardized Profile and the tables in this annex, this annex is to take precedence.

This annex specifies the support constraints and characteristics of this International Standardized Profile on what shall or may appear in the implementation columns of an ISPICS.

This annex is based on the Directory Access Protocol PICS Proforma of Recommendation ITU-T Rec. X.581 and on ISO/IEC ISP 10616, annex A. It uses only a selection of the tables of ITU-T Rec. X.581 which are necessary for the specification of the ISP status. The numbering of the PICS Proforma is retained in order to facilitate an implementor to fill in the respective PICS Proforma. It only deals with the MHS schema components defined in annex A of ISO/IEC 10021 Part 2. All other schema components derived from ISO/IEC ISP 10616 are dealt with in that profile and are based on the ITU-T Rec. X.581 PICS proforma.

The terminology of conformance requirements is used as defined in 3.2.

In each table, the "Base" column reflects the level of support required for conformance to the base standard and the "Profile" column specifies the level of support required by this ISP. A column for a particular functional group is only included in tables which classify elements related to that particular functional group.

The Support column is provided for completion by the supplier of the implementation as follows:

Y	the element or feature is fully supported (i.e. satisfying the requirements of the 'm' profile support classification)
N	the element or feature is not supported, further qualified to indicate the action taken on receipt of such an element as follows:
– or blank	the element or feature is not applicable.

[1] **Copyright release for ISPICS proformas**

User of this International Standardized Profile may freely reproduce the ISPICS proforma in this annex so that it can be used for its intended purpose and may further publish the completed ISPICS.

Identification of the implementation

IDENTIFICATION OF PICS

Ref	Question	Response
1	Date of statement (DD/MM/YY)	
2	PICS serial number	
3	System conformance statement cross reference	

IDENTIFICATION OF IUT

Ref	Question	Response
1	Implementation name	
2	Implementation version	
3	Machine name	
4	Machine version	
5	Operating system name	
6	Operating system version	
7	Special configuration	
8	Other information	

Identification of supplier

Ref	Question	Response
1	Organization name	
2	Contact name(s)	
3	Address	
4	Telephone number	
5	Telex number	
6	Fax number	
7	E-mail address	
8	Other information	

Type of implementation

Ref	Implementation Type	Response
1	DSA	

NOTE - A separate PICS shall be completed for each implementation type for which conformance is claimed.

Global statement of conformance

Ref	Question	Response
1	Are all mandatory base standards requirements implemented?	

Statement of profile conformance

Ref	Question	Response	Comments
1	Are all mandatory requirements of profile FDI2 implemented?		

A.1 to A.5

No additional requirements stated in this International Standardized Profile beyond those stated in ISO/IEC ISP 10616.

A.6 Capabilities and options

A.6.1 to A.6.3

No additional requirements are stated beyond those stated in ISO/IEC ISP 10616.

A.6.4 Directory schema

A.6.4.1 Object classes

A.6.4.1.1 Standard object classes

No additional requirements are stated beyond those stated in ISO/IEC ISP 10616, A.6.4.1.1.

A.6.4.1.2 Other object classes

The table below indicates the conformance requirements of FDI2 on other object classes defined in ISO/IEC 10021-2 (see clause 7).

Ref. no.	Object Classes	Base Standard	Profile Basic	Profile DL	Support
1	mhs-distribution-list	o	o	m	
2	mhs-message-store	o	o		
3	mhs-message-transfer-agent	o	o		
4	mhs-user	o	m		
5	mhs-user-agent	o	o		

A.6.4.2 Attribute types

A.6.4.2.1 Standard attribute types

No additional requirements are stated beyond those stated in ISO/IEC ISP 10616, A.6.4.2.1.

A.6.4.2.2 Other attribute types

The table below indicates the conformance of FDI2 on other attribute types in addition to those stated in ISO/IEC ISP 10616, A.6.4.2.2 (see clause 8).

Ref. no.	Attribute types	Base Standard	Profile Basic	Profile DL	Support
1	mhs-acceptable-eits	o	o		
2	mhs-deliverable-content-types	o	m		
3	mhs-deliverable-classes	o	o		
4	mhs-dl-archive-service	o	o	m	
5	mhs-dl-members	c[1]	c[1]	m	
6	mhs-dl-policy	o	o	m	
7	mhs-dl-related-lists	o	o	m	
8	mhs-dl-submit-permissions	c[1]	c[1]	m	
9	mhs-dl-subscription-service	o	o	m	
10	mhs-exclusively-acceptable-eits	o	m		
11	mhs-maximum-content-length	o	m		
12	mhs-message-store-dn	o	o		
13	mhs-or-addresses	c[1]	m		

Ref. no.	Attribute types	Base Standard	Profile Basic	Profile DL	Support
14	mhs-or-addresses-with-capabilities	o	o		
15	mhs-supported-attributes	o	o		
16	mhs-supported-automatic-actions	o	o		
17	mhs-supported-content-types	o	o		
18	mhs-supported-matching-rules	o	o		
19	mhs-unacceptable-eits	o	o		
[1] These attributes are mandatory if the optional object classes which use them are supported. Their base standard object class definition classifies them as 'MUST HAVE'.					

A.6.5 Other information

A.6.5.1 Minimum set of structure and naming elements

The table below defines the additional requirements of FDI2 on structure elements and naming elements in addition to those stated in ISO/IEC ISP 10616, A.6.5.1 (see clause 6).

Ref no	Structure Element	Structural Object Class	Superior Structural Element(s)	Naming Attribute	Base Standard	Profile Basic	Profile DL	Sup port
1	0	mhs-distribution-list	fdi11-4, fdi11 5, fdi11-6, fdi11-7	common-name	o	o	m	

A.6.5.2 Additional object classes for structure elements of the minimum set of structure and naming elements

The table below defines the additional object classes for structure elements of the DIT (see clause 6).

Ref. no.	Structure Element	Structural Object Class	Superclasses of Structural Object Class	Subclasses of Structural Object Classes	Auxiliary Object Classes	Support
1	fdi11-15	Application Entity		mhs-message-transfer-agent		
2	fdi11-15	Application Entity		mhs-message-store		
3	fdi11-15	Application Entity		mhs-user-agent		
4	fdi11-14	Application Process			mhs-user	
5	fdi11-4	Organization			mhs-user	
6	fdi11-8, fdi11-9	Organizational Person	Person		mhs-user	

Ref. no.	Structure Element	Structural Object Class	Superclasses of Structural Object Class	Subclasses of Structural Object Classes	Auxiliary Object Classes	Support
7	fdi11-10	Organizational Role			mhs-user	
8	fdi11-5, fdi11-6, fdi11 -7	Organizational Unit			mhs-user	
9	fdi11-1, fdi11-2, fdi11-13	Residential Person	Person		mhs-user	

A.6.5.3 Additional Attribute Syntaxes

There are no explicit requirements for conformance to attribute syntaxes other than those implied by the conformance requirements to attributes and their associated syntaxes.

A.6.5.4 Additional matching rules

The table below indicates matching rule conformance requirements of FDI2 in addition to those stated in ISO/IEC ISP 10616.

Ref. no.	Matching Rule	Base Standard	Profile Basic	Profile AMR	Profile SMR	Profile DL	Support
1	oRAddressCapabilitiesMatch	c[1]	c[1]				
2	oRAddressElementsMatch	o	o	m			
3	oRAddressMatch	c[1]	m				
4	oRAddressSubstringElementsMatch	o	o		m		
5	oRNameElementsMatch	o	o	m			
6	oRNameExactMatch	c[1]	c[1]			m	
7	oRNameMatch	o	o	m			
8	oRNameSingleElementMatch	o	o	m			
9	oRNameSubstringElementsMatch	o	o		m		

[1] The matching rule shall be supported if there exists an attribute which uses it as an equality matching rule and that attribute is supported.

Note - IntegerExactMatch, objectIdentifierMatch and distinguishedNameMatch are mandated by ISO/IEC ISP 10616.

Annex B

(informative)

Recommendations for DSA support of DIB fragments in an operational environment for MHS use of the Directory

Annex A of FDI11 and FDI2 define the static information handling capabilities that a DSA implementation shall support. This annex of FDI2 suggests the operational information handling capabilities that a Directory Management Domain should provide once set up in its operational environment .

The Directory Information Base of a Directory Management Domain which supports the directory information specified in FDI2 and FDI11 as further recommended in this annex may be held in a single DSA or it may be distributed over a number of DSAs. Each DSA in a distributed DMD might hold only a subset of the information object entries which constitute the total DIB.

Since the set of capabilities that a DSA implementation should provide is based on the set of capabilities that the DSA statically supports, the requirements specified in this annex are a subset of the requirements specified in annexes A of FDI11 and FDI2.

In the following tables, '✓' indicates a recommendation for support.

B.1 Object classes

B.1.1 Standard object classes

		Support Recommendation			
Ref. no.	Object Class	Basic	DL FG	AMR	SMR
fdi11-1	top	✓			
fdi11-2	alias				
fdi11-3	country	✓			
fdi11-4	locality	✓			
fdi11-5	organization	✓			
fdi11-6	organizationalUnit	✓			
fdi11-7	person	✓			
fdi11-8	organizationalPerson	✓			
fdi11-9	organizationalRole	✓			
fdi11-10	groupOfNames				
fdi11-11	residentialPerson				
fdi11-12	applicationProcess				
fdi11-13	applicationEntity				
fdi11-14	dsa				

		Support Recommendation			
Ref. no.	Object Class	Basic	DL FG	AMR	SMR
fdi11-15	device				
fdi11-16	strongAuthenticationUser				
fdi11-17	certificationAuthority				

B.1.2 Other object classes from FDI11

		Support Recommendation			
Ref. no.	Object Class	Basic	DL FG	AMR	SMR
fdi11-1	ispApplicationEntity				
fdi11-2	ispUseofApplicationEntity				

B.1.3 MHS object classes

		Support Recommendation			
	Object Class	Basic	DL FG	AMR	SMR
fdi2-1	mhs-distribution-list		✓		
fdi2-2	mhs-message-store				
fdi2-3	mhs-message-transfer-agent				
fdi2-4	mhs-user	✓			
fdi2-5	mhs-user-agent				

B.2 Attributes

B.2.1 Standard attribute types

		Support Recommendation			
Ref. no.	Attribute type	Basic	DL FG	AMR	SMR
fdi11-0	objectClass	✓			
fdi11-1	aliasedObjectName				
fdi11-2	knowledgeInformation[2]				
fdi11-3	commonName	✓			

[2] This attribute is obsolete in the '93 version of ITU-T X.500 | ISO/IEC 9594 Specifications.

		Support Recommendation			
Ref. no.	Attribute type	Basic	DL FG	AMR	SMR
fdi11-4	surname	✓			
fdi11-5	serialNumber				
fdi11-6	countryName	✓			
fdi11-7	localityName	✓			
fdi11-8	stateOrProvinceName				
fdi11-9	streetAddress				
fdi11-10	organizationName	✓			
fdi11-11	organizationalUnitName	✓			
fdi11-12	title				
fdi11-13	description				
fdi11-14	searchGuide				
fdi11-15	businessCategory				
fdi11-16	postalAddress				
fdi11-17	postalCode				
fdi11-18	postOfficeBox				
fdi11-19	physicalDeliveryOfficeName				
fdi11-20	telephoneNumber	✓			
fdi11-21	telexNumber				
fdi11-22	teletexTerminalIdentifier				
fdi11-23	facsimileTelephoneNumber	✓			
fdi11-24	x121Address				
fdi11-25	internationalISDNNumber				
fdi11-26	registeredAddress				
fdi11-27	destinationIndicator				
fdi11-28	preferredDeliveryMethod				
fdi11-29	presentationAddress				