

International Telecommunication Union

**ITU-T**

TELECOMMUNICATION  
STANDARDIZATION SECTOR  
OF ITU

**X.521**

(10/2019)

SERIES X: DATA NETWORKS, OPEN SYSTEM  
COMMUNICATIONS AND SECURITY

Directory

---

**Information technology – Open Systems  
Interconnection – The Directory: Selected object  
classes**

Recommendation ITU-T X.521



ITU-T X-SERIES RECOMMENDATIONS  
**DATA NETWORKS, OPEN SYSTEM COMMUNICATIONS AND SECURITY**

<b>PUBLIC DATA NETWORKS</b>	
Services and facilities	X.1–X.19
Interfaces	X.20–X.49
Transmission, signalling and switching	X.50–X.89
Network aspects	X.90–X.149
Maintenance	X.150–X.179
Administrative arrangements	X.180–X.199
<b>OPEN SYSTEMS INTERCONNECTION</b>	
Model and notation	X.200–X.209
Service definitions	X.210–X.219
Connection-mode protocol specifications	X.220–X.229
Connectionless-mode protocol specifications	X.230–X.239
PICS proformas	X.240–X.259
Protocol Identification	X.260–X.269
Security Protocols	X.270–X.279
Layer Managed Objects	X.280–X.289
Conformance testing	X.290–X.299
<b>INTERWORKING BETWEEN NETWORKS</b>	
General	X.300–X.349
Satellite data transmission systems	X.350–X.369
IP-based networks	X.370–X.379
<b>MESSAGE HANDLING SYSTEMS</b>	<b>X.400–X.499</b>
<b>DIRECTORY</b>	<b>X.500–X.599</b>
<b>OSI NETWORKING AND SYSTEM ASPECTS</b>	
Networking	X.600–X.629
Efficiency	X.630–X.639
Quality of service	X.640–X.649
Naming, Addressing and Registration	X.650–X.679
Abstract Syntax Notation One (ASN.1)	X.680–X.699
<b>OSI MANAGEMENT</b>	
Systems management framework and architecture	X.700–X.709
Management communication service and protocol	X.710–X.719
Structure of management information	X.720–X.729
Management functions and ODMA functions	X.730–X.799
<b>SECURITY</b>	<b>X.800–X.849</b>
<b>OSI APPLICATIONS</b>	
Commitment, concurrency and recovery	X.850–X.859
Transaction processing	X.860–X.879
Remote operations	X.880–X.889
Generic applications of ASN.1	X.890–X.899
<b>OPEN DISTRIBUTED PROCESSING</b>	<b>X.900–X.999</b>
<b>INFORMATION AND NETWORK SECURITY</b>	<b>X.1000–X.1099</b>
<b>SECURE APPLICATIONS AND SERVICES (1)</b>	<b>X.1100–X.1199</b>
<b>CYBERSPACE SECURITY</b>	<b>X.1200–X.1299</b>
<b>SECURE APPLICATIONS AND SERVICES (2)</b>	<b>X.1300–X.1499</b>
<b>CYBERSECURITY INFORMATION EXCHANGE</b>	<b>X.1500–X.1599</b>
<b>CLOUD COMPUTING SECURITY</b>	<b>X.1600–X.1699</b>
<b>QUANTUM COMMUNICATION</b>	<b>X.1700–X.1729</b>

*For further details, please refer to the list of ITU-T Recommendations.*

**Information technology – Open Systems Interconnection –  
The Directory: Selected object classes**

### Summary

Recommendation ITU-T X.521 | ISO/IEC 9594-7 defines a number of selected object classes and name forms which may be found useful across a range of applications of the Directory. An object class definition specifies the attribute types which are relevant to the objects of that class. A name form definition specifies the attributes to be used in forming names for the objects of a given class.

### History

Edition	Recommendation	Approval	Study Group	Unique ID*
1.0	ITU-T X.521	1988-11-25		<a href="http://handle.itu.int/11.1002/1000/3012">11.1002/1000/3012</a>
2.0	ITU-T X.521	1993-11-16	7	<a href="http://handle.itu.int/11.1002/1000/3013">11.1002/1000/3013</a>
3.0	ITU-T X.521	1997-08-09	7	<a href="http://handle.itu.int/11.1002/1000/4128">11.1002/1000/4128</a>
3.1	ITU-T X.521 (1997) Amd. 1	2000-03-31	7	<a href="http://handle.itu.int/11.1002/1000/5043">11.1002/1000/5043</a>
3.2	ITU-T X.521 (1997) Technical Cor. 1	2001-02-02	7	<a href="http://handle.itu.int/11.1002/1000/5325">11.1002/1000/5325</a>
4.0	ITU-T X.521	2001-02-02	7	<a href="http://handle.itu.int/11.1002/1000/5326">11.1002/1000/5326</a>
5.0	ITU-T X.521	2005-08-29	17	<a href="http://handle.itu.int/11.1002/1000/8509">11.1002/1000/8509</a>
5.1	ITU-T X.521 (2005) Cor. 1	2012-04-13	17	<a href="http://handle.itu.int/11.1002/1000/11592">11.1002/1000/11592</a>
6.0	ITU-T X.521	2008-11-13	17	<a href="http://handle.itu.int/11.1002/1000/9599">11.1002/1000/9599</a>
6.1	ITU-T X.521 (2008) Cor. 1	2012-04-13	17	<a href="http://handle.itu.int/11.1002/1000/11593">11.1002/1000/11593</a>
7.0	ITU-T X.521	2012-10-14	17	<a href="http://handle.itu.int/11.1002/1000/11744">11.1002/1000/11744</a>
8.0	ITU-T X.521	2016-10-14	17	<a href="http://handle.itu.int/11.1002/1000/13037">11.1002/1000/13037</a>
9.0	ITU-T X.521	2019-10-14	17	<a href="http://handle.itu.int/11.1002/1000/14038">11.1002/1000/14038</a>

### Keywords

Attribute, directory, directory system agent, directory user agent, distinguished name, object class.

---

\* To access the Recommendation, type the URL <http://handle.itu.int/> in the address field of your web browser, followed by the Recommendation's unique ID. For example, <http://handle.itu.int/11.1002/1000/11830-en>.

## FOREWORD

The International Telecommunication Union (ITU) is the United Nations specialized agency in the field of telecommunications, information and communication technologies (ICTs). The ITU Telecommunication Standardization Sector (ITU-T) is a permanent organ of ITU. ITU-T is responsible for studying technical, operating and tariff questions and issuing Recommendations on them with a view to standardizing telecommunications on a worldwide basis.

The World Telecommunication Standardization Assembly (WTSA), which meets every four years, establishes the topics for study by the ITU-T study groups which, in turn, produce Recommendations on these topics.

The approval of ITU-T Recommendations is covered by the procedure laid down in WTSA Resolution 1.

In some areas of information technology which fall within ITU-T's purview, the necessary standards are prepared on a collaborative basis with ISO and IEC.

## NOTE

In this Recommendation, the expression "Administration" is used for conciseness to indicate both a telecommunication administration and a recognized operating agency.

Compliance with this Recommendation is voluntary. However, the Recommendation may contain certain mandatory provisions (to ensure, e.g., interoperability or applicability) and compliance with the Recommendation is achieved when all of these mandatory provisions are met. The words "shall" or some other obligatory language such as "must" and the negative equivalents are used to express requirements. The use of such words does not suggest that compliance with the Recommendation is required of any party.

## INTELLECTUAL PROPERTY RIGHTS

ITU draws attention to the possibility that the practice or implementation of this Recommendation may involve the use of a claimed Intellectual Property Right. ITU takes no position concerning the evidence, validity or applicability of claimed Intellectual Property Rights, whether asserted by ITU members or others outside of the Recommendation development process.

As of the date of approval of this Recommendation, ITU had not received notice of intellectual property, protected by patents, which may be required to implement this Recommendation. However, implementers are cautioned that this may not represent the latest information and are therefore strongly urged to consult the TSB patent database at <http://www.itu.int/ITU-T/ipr/>.

© ITU 2019

All rights reserved. No part of this publication may be reproduced, by any means whatsoever, without the prior written permission of ITU.

## CONTENTS

	<i>Page</i>
SECTION 1 – GENERAL .....	1
1 Scope .....	1
2 Normative references.....	1
2.1 Identical Recommendations   International Standards .....	1
3 Definitions .....	2
3.1 Communication Model definitions.....	2
3.2 Directory Model definitions .....	2
4 Conventions .....	2
SECTION 2 – SELECTED OBJECT CLASSES .....	4
5 Definition of useful attribute sets .....	4
5.1 Telecommunication attribute set .....	4
5.2 Postal attribute set .....	4
5.3 Locale attribute set .....	4
5.4 Organizational attribute set .....	5
6 Definition of selected object classes.....	5
6.1 Country.....	5
6.2 Locality .....	5
6.3 Organization .....	5
6.4 Organizational Unit .....	5
6.5 Person.....	6
6.6 Organizational Person .....	6
6.7 Organizational Role.....	6
6.8 Group Of Names .....	6
6.9 Group Of Unique Names.....	7
6.10 Residential Person.....	7
6.11 Application Process.....	7
6.12 Application Entity .....	7
6.13 DSA.....	8
6.14 Device .....	8
6.15 Strong Authentication User .....	8
6.16 User Security Information .....	8
6.17 User Password.....	9
6.18 Certification Authority .....	9
6.19 Certification Authority-V2.....	9
6.20 DMD .....	9
6.21 OID Obj1.....	9
6.22 OID Obj2.....	10
6.23 OID ObjC.....	10
6.24 OID root .....	10
6.25 OID arc.....	10
6.26 URN ObjC.....	10
6.27 ISO Tag Information .....	10
6.28 ISO Tag Type.....	11
6.29 EPC Tag Information object class.....	11
6.30 EPC Tag Type Object Class.....	11
SECTION 3 – SELECTED NAME FORMS .....	12
7 Definition of selected name forms.....	12
7.1 Country name form .....	12
7.2 Locality name form .....	12
7.3 State Or Province name form .....	12
7.4 Organization name form.....	12

	<i>Page</i>
7.5 Organizational Unit name form.....	12
7.6 Person name form .....	13
7.7 Organizational Person name form.....	13
7.8 Organizational Role name form .....	13
7.9 Group Of Names name form.....	13
7.10 Residential Person name form.....	13
7.11 Application Process name form .....	13
7.12 Application Entity name form.....	13
7.13 DSA name form .....	14
7.14 Device name form.....	14
7.15 DMD name form .....	14
7.16 OIDC1 name form.....	14
7.17 OIDC2 name form.....	14
7.18 OIDC name form.....	14
7.19 URNC name form .....	14
7.20 OID root name form.....	15
7.21 OID arc name form .....	15
Annex A – Selected object classes and name forms in ASN.1 .....	16
Annex B – Suggested name forms and Directory information tree (DIT) structures .....	24
B.1 Country.....	24
B.2 Organization.....	25
B.3 Locality .....	25
B.4 Organizational Unit .....	25
B.5 Organizational Person .....	26
B.6 Organizational Role.....	26
B.7 Group of Names .....	26
B.8 Residential Person.....	27
B.9 Application Entity .....	27
B.10 Device .....	27
B.11 Application Process.....	27
B.12 Alternative Structure Rule for Locality .....	27
Annex C – Amendments and corrigenda .....	29
Bibliography .....	30

## Introduction

This Recommendation | International Standard, together with other Recommendations | International Standards, has been produced to facilitate the interconnection of information processing systems to provide directory services. A set of such systems, together with the directory information that they hold, can be viewed as an integrated whole, called the *Directory*. The information held by the Directory, collectively known as the Directory Information Base (DIB), is typically used to facilitate communication between, with or about objects such as application entities, people, terminals, and distribution lists.

The Directory plays a significant role in Open Systems Interconnection, whose aim is to allow, with a minimum of technical agreement outside of the interconnection standards themselves, the interconnection of information processing systems:

- from different manufacturers;
- under different managements;
- of different levels of complexity; and
- of different ages.

This Recommendation | International Standard defines a number of attribute sets and object classes which may be found useful across a range of applications of the Directory.

This Recommendation | International Standard provides the foundation frameworks upon which industry profiles can be defined by other standards groups and industry forums. Many of the features defined as optional in these frameworks may be mandated for use in certain environments through profiles. This ninth edition technically revises and enhances the eighth edition of this Recommendation | International Standard.

Annex A, which is an integral part of this Recommendation | International Standard, provides an ASN.1 module containing all of the type and value definitions which appear in this Recommendation | International Standard.

Annex B, which is not an integral part of this Recommendation | International Standard, provides some common naming and structure rules which may or may not be used by administrative authorities.

Annex C, which is not an integral part of this Recommendation | International Standard, lists the amendments and defect reports that have been incorporated to form this edition of this Recommendation | International Standard.





**INTERNATIONAL STANDARD  
RECOMMENDATION ITU-T**

**Information technology – Open Systems Interconnection –  
The Directory: Selected object classes**

**SECTION 1 – GENERAL**

**1 Scope**

This Recommendation | International Standard defines a number of object classes and name forms which may be found useful across a range of applications of the Directory. The definition of an object class involves listing a number of attribute types which are relevant to objects of that class. The definition of a name form involves naming the object class to which it applies and listing the attributes to be used in forming names for objects of that class. These definitions are used by the administrative authority which is responsible for the management of the directory information.

Any administrative authority can define its own object classes or subclasses and name forms for any purpose.

NOTE 1 – Those definitions may or may not use the notation specified in Rec. ITU-T X.501 | ISO/IEC 9594-2.

NOTE 2 – It is recommended that an object class defined in this Recommendation | International Standard, or a subclass derived from one, or a name form defined in this Recommendation | International Standard, be used in preference to the generation of a new one, whenever the semantics is appropriate for the application.

Administrative authorities may support some or all the selected object classes and name forms, and may also add additional ones.

All administrative authorities shall support the object classes which the directory uses for its own purpose (the top, alias and Directory system agent (DSA) object classes).

**2 Normative references**

The following Recommendations and International Standards contain provisions which, through reference in this text, constitute provisions of this Recommendation | International Standard. At the time of publication, the editions indicated were valid. All Recommendations and Standards are subject to revision, and parties to agreements based on this Recommendation | International Standard are encouraged to investigate the possibility of applying the most recent editions of the Recommendations and Standards listed below. Members of IEC and ISO maintain registers of currently valid International Standards. The Telecommunication Standardization Bureau of the ITU maintains a list of currently valid ITU-T Recommendations.

**2.1 Identical Recommendations | International Standards**

- Recommendation ITU-T X.200 (1994) | ISO/IEC 7498-1:1994, *Information technology – Open Systems Interconnection – Basic Reference Model: The Basic Model.*
- Recommendation ITU-T X.500 (2019) | ISO/IEC 9594-1:2020, *Information technology – Open Systems Interconnection – The Directory: Overview of concepts, models and services.*
- Recommendation ITU-T X.501 (2019) | ISO/IEC 9594-2:2020, *Information technology – Open Systems Interconnection – The Directory: Models.*
- Recommendation ITU-T X.509 (2019) | ISO/IEC 9594-8:2020, *Information technology – Open Systems Interconnection – The Directory: Public-key and attribute certificate frameworks.*
- Recommendation ITU-T X.511 (2019) | ISO/IEC 9594-3:2020, *Information technology – Open Systems Interconnection – The Directory: Abstract service definition.*
- Recommendation ITU-T X.518 (2019) | ISO/IEC 9594-4:2020, *Information technology – Open Systems Interconnection – The Directory: Procedures for distributed operation.*
- Recommendation ITU-T X.519 (2019) | ISO/IEC 9594-5:2020, *Information technology – Open Systems Interconnection – The Directory: Protocol specifications.*
- Recommendation ITU-T X.520 (2019) | ISO/IEC 9594-6:2020, *Information technology – Open Systems Interconnection – The Directory: Selected attribute types.*
- Recommendation ITU-T X.525 (2019) | ISO/IEC 9594-9:2020, *Information technology – Open Systems Interconnection – The Directory: Replication.*

- Recommendation ITU-T X.680 (2015) | ISO/IEC 8824-1:2015, *Information technology – Abstract Syntax Notation One (ASN.1): Specification of basic notation.*
- Recommendation ITU-T X.681 (2015) | ISO/IEC 8824-2:2015, *Information technology – Abstract Syntax Notation One (ASN.1): Information object specification.*
- Recommendation ITU-T X.682 (2015) | ISO/IEC 8824-3:2015, *Information technology – Abstract Syntax Notation One (ASN.1): Constraint specification.*
- Recommendation ITU-T X.683 (2015) | ISO/IEC 8824-4:2015, *Information technology – Abstract Syntax Notation One (ASN.1): Parameterization of ASN.1 specifications.*
- Recommendation ITU-T X.690 (2015) | ISO/IEC 8825-1:2015, *Information technology – ASN.1 encoding rules: Specification of Basic Encoding Rules (BER), Canonical Encoding Rules (CER) and Distinguished Encoding Rules (DER).*

### **3 Definitions**

For the purposes of this Recommendation | International Standard, the following definitions apply.

#### **3.1 Communication Model definitions**

The following terms are defined in Rec. ITU-T X.519 | ISO/IEC 9594-5:

- a) *application-entity;*
- b) *application process.*

#### **3.2 Directory Model definitions**

The following terms are defined in Rec. ITU-T X.501 | ISO/IEC 9594-2:

- a) *attribute;*
- b) *attribute type;*
- c) *Directory information tree (DIT);*
- d) *Directory system agent (DSA);*
- e) *attribute set;*
- f) *entry;*
- g) *name;*
- h) *object class;*
- i) *subclass;*
- j) *name form;*
- k) *structure rule.*

### **4 Conventions**

The term "Directory Specification" (as in "this Directory Specification") shall be taken to mean Rec. ITU-T X.521 | ISO/IEC 9594-7. The term "Directory Specifications" shall be taken to mean the Rec. ITU-T X.500 | ISO/IEC 9594-1, Rec. ITU-T X.501 | ISO/IEC 9594-2, Rec. ITU-T X.511 | ISO/IEC 9594-3, Rec. ITU-T X.518 | ISO/IEC 9594-4, Rec. ITU-T X.519 | ISO/IEC 9594-5, Rec. ITU-T X.520 | ISO/IEC 9594-6, Rec. ITU-T X.521 | ISO/IEC 9594-7 and Rec. ITU-T X.525 | ISO/IEC 9594-9.

If an International Standard or ITU-T Recommendation is referenced within normal text without an indication of the edition, the edition shall be taken to be the latest one as specified in the normative references clause.

This Directory Specification makes extensive use of Abstract Syntax Notation One (ASN.1) for the formal specification of data types and values, as it is specified in Rec. ITU-T X.680 | ISO/IEC 8824-1, ITU-T X.681 | ISO/IEC 8824-2, ITU-T X.682 | ISO/IEC 8824-3, ITU-T X.683 | ISO/IEC 8824-4 and Rec. ITU-T X.690 | ISO/IEC 8825-1.

This Directory Specification presents ASN.1 notation in the bold Courier New typeface. When ASN.1 types and values are referenced in normal text, they are differentiated from normal text by presenting them in the bold Courier New typeface. The names of procedures, typically referenced when specifying the semantics of processing, are differentiated

from normal text by displaying them in bold Times New Roman. Access control permissions are presented in italicized Times New Roman.

Object classes and name forms are defined in this Directory Specification as values of the **OBJECT-CLASS** and **NAME-FORM** information object classes defined in Rec. ITU-T X.501 | ISO/IEC 9594-2.

## SECTION 2 – SELECTED OBJECT CLASSES

## 5 Definition of useful attribute sets

### 5.1 Telecommunication attribute set

This set of attributes is used to define those which are commonly used for business communications.

```
TelecommunicationAttributeSet ATTRIBUTE ::=
  {facsimileTelephoneNumber |
   internationalISDNNumber |
   telephoneNumber |
  -- teletexTerminalIdentifier (Attribute type has been deleted)
  -- teletexTerminalIdentifier | Attribute type has been deleted
   telexNumber |
   preferredDeliveryMethod |
   destinationIndicator |
   registeredAddress |
   x121Address}
```

### 5.2 Postal attribute set

This set of attributes is used to define those which are directly associated with postal delivery.

```
PostalAttributeSet ATTRIBUTE ::=
  {physicalDeliveryOfficeName |
   postalAddress |
   postalCode |
   postOfficeBox |
   streetAddress}
```

### 5.3 Locale attribute set

This set of attributes is used to define those which are commonly used for search purposes to indicate the locale of an object.

```
LocaleAttributeSet ATTRIBUTE ::=
  {localityName |
   stateOrProvinceName |
   streetAddress}
```

## 5.4 Organizational attribute set

This set of attributes is used to define the attributes that an organization or organizational unit may typically possess.

```
OrganizationalAttributeSet ATTRIBUTE ::=
  {description |
   LocaleAttributeSet |
   PostalAttributeSet |
   TelecommunicationAttributeSet |
   businessCategory |
   seeAlso |
   searchGuide |
   userPassword}
```

## 6 Definition of selected object classes

### 6.1 Country

The `country` object class is used to define country entries in the DIT.

```
country OBJECT-CLASS ::= {
  SUBCLASS OF {top}
  MUST CONTAIN {countryName}
  MAY CONTAIN {description |
               searchGuide}
  LDAP-NAME {"country"}
  ID id-oc-country }
```

### 6.2 Locality

The `locality` object class is used to define locality in the DIT.

```
locality OBJECT-CLASS ::= {
  SUBCLASS OF {top}
  MAY CONTAIN {description |
               searchGuide |
               LocaleAttributeSet |
               seeAlso}
  LDAP-NAME {"locality"}
  ID id-oc-locality }
```

At least one of Locality Name or State or Province Name shall be present.

### 6.3 Organization

The `organization` object class is used to define organization entries in the DIT.

```
organization OBJECT-CLASS ::= {
  SUBCLASS OF {top}
  MUST CONTAIN {organizationName}
  MAY CONTAIN {OrganizationalAttributeSet}
  LDAP-NAME {"organization"}
  ID id-oc-organization }
```

### 6.4 Organizational Unit

The `organizationalUnit` object class is used to define entries representing subdivisions of organizations.

```
organizationalUnit OBJECT-CLASS ::= {
  SUBCLASS OF {top}
  MUST CONTAIN {organizationalUnitName}
  MAY CONTAIN {OrganizationalAttributeSet}
  LDAP-NAME {"organizationalUnit"}
  ID id-oc-organizationalUnit }
```

## 6.5 Person

The **person** object class is used to define entries representing people generically.

```
person OBJECT-CLASS ::= {
  SUBCLASS OF    {top}
  MUST CONTAIN   {commonName |
                  surname}
  MAY CONTAIN    {description |
                  telephoneNumber |
                  userPassword |
                  seeAlso}
  LDAP-NAME      {"person"}
  ID             id-oc-person }
```

## 6.6 Organizational Person

The **organizationalPerson** object class is used to define entries representing people employed by, or in some other important way associated with, an organization.

```
organizationalPerson OBJECT-CLASS ::= {
  SUBCLASS OF    {person}
  MAY CONTAIN    {LocaleAttributeSet |
                  PostalAttributeSet |
                  TelecommunicationAttributeSet |
                  organizationalUnitName |
                  title}
  LDAP-NAME      {"organizationalPerson"}
  ID             id-oc-organizationalPerson }
```

## 6.7 Organizational Role

The **organizationalRole** object class is used to define entries representing an organizational role, i.e., a position or role within an organization. An organizational role is normally considered to be filled by a particular organizational person. Over its lifetime, however, an organizational role may be filled by a number of different organizational people in succession. In general, an organizational role may be filled by a person or a non-human entity.

```
organizationalRole OBJECT-CLASS ::= {
  SUBCLASS OF    {top}
  MUST CONTAIN   {commonName}
  MAY CONTAIN    {description |
                  LocaleAttributeSet |
                  organizationalUnitName |
                  PostalAttributeSet |
                  preferredDeliveryMethod |
                  roleOccupant |
                  seeAlso |
                  TelecommunicationAttributeSet}
  LDAP-NAME      {"organizationalRole"}
  ID             id-oc-organizationalRole }
```

## 6.8 Group Of Names

The **groupOfNames** object class is used to define entries representing an unordered set of names which represent individual objects or other groups of names. The membership of a group is static, i.e., it is explicitly modified by administrative action, rather than dynamically determined each time the group is referred to.

The membership of a group can be reduced to a set of individual object's names by replacing each group with its membership. This process could be carried out recursively until all constituent group names have been eliminated, and only the names of individual objects remain.

```
groupOfNames OBJECT-CLASS ::= {
  SUBCLASS OF    {top}
  MUST CONTAIN   {commonName | member}
  MAY CONTAIN    {description |
                  organizationName |
                  organizationalUnitName |
                  owner }
```

```

        seeAlso |
        businessCategory}
LDAP-NAME  {"groupOfNames"}
ID         id-oc-groupOfNames }

```

## 6.9 Group Of Unique Names

The `groupOfUniqueNames` object class is used to define entries representing an unordered set of names whose integrity can be assured and which represent individual objects or other groups of names. The membership of a group is static, i.e., it is explicitly modified by administrative action, rather than dynamically determined each time the group is referred to.

```

groupOfUniqueNames OBJECT-CLASS ::= {
  SUBCLASS OF  {top}
  MUST CONTAIN {commonName |
                uniqueMember}
  MAY CONTAIN  {description |
                organizationName |
                organizationalUnitName |
                owner |
                seeAlso |
                businessCategory}
LDAP-NAME     {"groupOfUniqueNames"}
ID           id-oc-groupOfUniqueNames }

```

## 6.10 Residential Person

The `residentialPerson` object class is used to define entries representing a person in the residential environment.

```

residentialPerson OBJECT-CLASS ::= {
  SUBCLASS OF  {person}
  MUST CONTAIN {localityName}
  MAY CONTAIN  {LocaleAttributeSet |
                PostalAttributeSet |
                preferredDeliveryMethod |
                TelecommunicationAttributeSet |
                businessCategory}
LDAP-NAME     {"residentialPerson"}
ID           id-oc-residentialPerson }

```

## 6.11 Application Process

The `applicationProcess` object class is used to define entries representing application processes. An application process is an element within a real open-system which performs the information processing for a particular application (see Rec. ITU-T X.200 | ISO/IEC 7498-1).

```

applicationProcess OBJECT-CLASS ::= {
  SUBCLASS OF  {top}
  MUST CONTAIN {commonName}
  MAY CONTAIN  {description |
                localityName |
                organizationalUnitName |
                seeAlso}
LDAP-NAME     {"applicationProcess"}
ID           id-oc-applicationProcess }

```

## 6.12 Application Entity

The `applicationEntity` object class is used to define entries representing application-entities. An application-entity consists of those aspects of an application process pertinent to communications.

```

applicationEntity OBJECT-CLASS ::= {
  SUBCLASS OF  {top}
  MUST CONTAIN {commonName |
                presentationAddress}
  MAY CONTAIN  {description |
                localityName |
                organizationName |
                organizationalUnitName |

```

```

        seeAlso |
        supportedApplicationContext}
LDAP-NAME   {"applicationEntity"}
ID          id-oc-applicationEntity }

```

NOTE – If an application-entity is represented as a Directory object that is distinct from an application process, the **commonName** attribute is used to carry the value of the Application Entity Qualifier.

### 6.13 DSA

The **dSA** object class is used to define entries representing DSAs. A DSA is as defined in Rec. ITU-T X.501 | ISO/IEC 9594-2.

```

dSA OBJECT-CLASS ::= {
  SUBCLASS OF   {applicationEntity}
  MAY CONTAIN   {knowledgeInformation}
  LDAP-NAME     {"dSA"}
  ID            id-oc-dSA }

```

### 6.14 Device

The **device** object class is used to define entries representing devices. A device is a physical unit which can communicate, such as a modem, disk drive, etc.

```

device OBJECT-CLASS ::= {
  SUBCLASS OF   {top}
  MUST CONTAIN  {commonName}
  MAY CONTAIN   {description |
                localityName |
                organizationName |
                organizationalUnitName |
                owner |
                seeAlso |
                serialNumber}
  LDAP-NAME     {"device"}
  ID            id-oc-device }

```

NOTE – At least one instance of **localityName**, **serialNumber** or **owner** attribute type, should be included. The choice is dependent on device type.

### 6.15 Strong Authentication User

The **strongAuthenticationUser** object class is used to define entries for objects which participate in strong authentication, as defined in Rec. ITU-T X.509 | ISO/IEC 9594-8.

```

strongAuthenticationUser OBJECT-CLASS ::= {
  SUBCLASS OF   {top}
  KIND          auxiliary
  MUST CONTAIN  {userCertificate}
  LDAP-NAME     {"strongAuthenticationUser"}
  LDAP-DESC     {"X.521 strong authentication user"}
  ID            id-oc-strongAuthenticationUser }

```

NOTE – Use of this object class has been deprecated in favour of the **pkiUser** and **pkiCA** object classes defined in Rec. ITU-T X.509 | ISO/IEC 9594-8. Implementations that use **strongAuthenticationUser**, **certificationAuthority** and **certificationAuthorityv2** object classes are still conformant to the standard, although new implementations are strongly recommended to move to the **pkiUser** and **pkiCA** object classes.

### 6.16 User Security Information

The **userSecurityInformation** object class is used to define entries for objects which need to indicate security information associated with them as defined in Rec. ITU-T X.509 | ISO/IEC 9594-8.

```

userSecurityInformation OBJECT-CLASS ::= {
  SUBCLASS OF   {top}
  KIND          auxiliary
  MAY CONTAIN   {supportedAlgorithms}
  LDAP-NAME     {"userSecurityInformation"}
  LDAP-DESC     {"X.521 user security information"}

```



```
ID          id-oc-userSecurityInformation }
```

## 6.17 User Password

The `userPwdClass` object class is used to define entries for objects that maintain a user password (`userPwd`).

```
userPwdClass OBJECT-CLASS ::= {
  KIND          auxiliary
  MAY CONTAIN   { userPwd }
  ID            id-oc-userPwdClass }
```

## 6.18 Certification Authority

The `certificationAuthority` object class is used to define entries for objects which act as certification authorities, as defined in Rec. ITU-T X.509 | ISO/IEC 9594-8.

```
certificationAuthority OBJECT-CLASS ::= {
  SUBCLASS OF   {top}
  KIND          auxiliary
  MUST CONTAIN  {cACertificate |
                certificateRevocationList |
                authorityRevocationList}
  MAY CONTAIN   {crossCertificatePair}
  LDAP-NAME     {"certificationAuthority"}
  LDAP-DESC     {"X.509 certificate authority"}
  ID            id-oc-certificationAuthority }
```

NOTE – Use of this object class has been deprecated in favour of the `pkiUser` and `pkiCA` object classes defined in Rec. ITU-T X.509 | ISO/IEC 9594-8. Implementations that use `strongAuthenticationUser`, `certificationAuthority` and `certificationAuthorityv2` object classes are still conformant to the standard, although new implementations are strongly recommended to move to the `pkiUser` and `pkiCA` object classes.

## 6.19 Certification Authority-V2

The `certificationAuthority-V2` object class is used to define entries for objects which act as certification authorities and can support the delta revocation list as defined in Rec. ITU-T X.509 | ISO/IEC 9594-8.

```
certificationAuthority-V2 OBJECT-CLASS ::= {
  SUBCLASS OF   {certificationAuthority}
  KIND          auxiliary
  MAY CONTAIN   {deltaRevocationList}
  LDAP-NAME     {"certificationAuthority-V2"}
  LDAP-DESC     {"X.509 certificate authority, version 2"}
  ID            id-oc-certificationAuthority-V2 }
```

NOTE – Use of this object class has been deprecated in favour of the `pkiUser` and `pkiCA` object classes defined in Rec. ITU-T X.509 | ISO/IEC 9594-8. Implementations that use `strongAuthenticationUser`, `certificationAuthority` and `certificationAuthorityv2` object classes are still conformant to the standard, although new implementations are strongly recommended to move to the `pkiUser` and `pkiCA` object classes.

## 6.20 DMD

The `dmd` object class is used to define DMD entries in the DIT.

```
dmd OBJECT-CLASS ::= {
  SUBCLASS OF   {top}
  MUST CONTAIN  {dmdName}
  MAY CONTAIN   {OrganizationalAttributeSet}
  LDAP-NAME     {"dmd"}
  ID            id-oc-dmd }
```

## 6.21 OID Obj1

The `oidC1obj` object class is used to define a top level object identifier component entry in the DIT.

```
oidC1obj OBJECT-CLASS ::= {
  SUBCLASS OF   {top}
  MUST CONTAIN  {oidC}
  LDAP-NAME     {"oidC1obj"}
```

```
ID          id-oc-oidC1obj }
```

## 6.22 OID Obj2

The `oidC2obj` object class is used to define second level object identifier component entries in the DIT.

```
oidC2obj OBJECT-CLASS ::= {
  SUBCLASS OF   {top}
  MUST CONTAIN  {oidC}
  LDAP-NAME     {"oidC2obj"}
  ID            id-oc-oidC2obj }
```

## 6.23 OID ObjC

The `oidCobj` object class is used to define the third- or lower-level object identifier component entries in the DIT.

NOTE – A tag-based object identifier typically has only three levels, where the first two values are { 2 27 }.

```
oidCobj OBJECT-CLASS ::= {
  SUBCLASS OF   {top}
  MUST CONTAIN  {oidC}
  LDAP-NAME     {"oidCobj"}
  ID            id-oc-oidCobj }
```

## 6.24 OID root

The `oidRoot` object class is moved to here from Rec. ITU-T X.660 | ISO/IEC 9834-1.

```
oidRoot OBJECT-CLASS ::= {
  SUBCLASS OF   {alias}
  MUST CONTAIN  { oidC1 | oidC2 | oidC }
  LDAP-NAME     {"oidRoot"}
  ID            id-oidRoot }
```

## 6.25 OID arc

The `oidArc` object class is moved to here from Rec. ITU-T X.660 | ISO/IEC 9834-1.

```
oidArc OBJECT-CLASS ::= {
  SUBCLASS OF   {alias}
  MUST CONTAIN  {oidC}
  LDAP-NAME     {"oidArc"}
  ID            id-oidArc }
```

## 6.26 URN ObjC

The `urnCobj` object class is used to define the entries of an URN subtree as determined

```
urnCobj OBJECT-CLASS ::= {
  SUBCLASS OF   {top}
  MUST CONTAIN  { urnC }
  LDAP-NAME     {"urnCobj"}
  ID            id-oc-urnCobj }
```

## 6.27 ISO Tag Information

The `isoTagInfo` auxiliary object class may be used to add tag-based attribute types to an entry holding information associated with a specific ISO tag.

```
isoTagInfo OBJECT-CLASS ::= {
  SUBCLASS OF   { top }
  KIND          auxiliary
  MAY CONTAIN   { tagOid |
                  tagAfi |
                  uii |
                  uiiInUrn |
                  contentUrl |
                  tagLocation }
```

```
LDAP-NAME {"isoTagInfo"}
ID        id-oc-isoTagInfo }
```

## 6.28 ISO Tag Type

The **isoTagType** auxiliary object class may be used to add tag-based attribute types to an entry holding information about a specific type of tag (see Annex G of Rec. ITU-T X.520 | ISO/IEC 9594-6).

```
isoTagType OBJECT-CLASS ::= {
  SUBCLASS OF { top }
  KIND        auxiliary
  MAY CONTAIN { tagOid |
               tagAfi |
               uiiFormat }
  LDAP-NAME   {"isoTagType"}
  ID         id-oc-isoTagType }
```

## 6.29 EPC Tag Information object class

The **epcTagInfoObj** auxiliary object class may be used to add tag-based attribute types to an entry holding information associated with a specific EPC tag.

```
epcTagInfoObj OBJECT-CLASS ::= {
  SUBCLASS OF { top }
  KIND        auxiliary
  MAY CONTAIN { epcHeader |
               epcPartition |
               epc |
               epcInUrn |
               contentUrl |
               tagLocation }
  LDAP-NAME   {"epcTagInfoObj"}
  ID         id-oc-epcTagInfoObj }
```

## 6.30 EPC Tag Type Object Class

The **epcTagTypeObj** auxiliary object class may be used to add tag-based attribute types to an entry holding information about a specific type of EPC tag.

```
epcTagTypeObj OBJECT-CLASS ::= {
  SUBCLASS OF { top }
  KIND        auxiliary
  MAY CONTAIN { uiiFormat }
  LDAP-NAME   {"epcTagTypeObj"}
  ID         id-oc-epcTagTypeObj }
```

## SECTION 3 – SELECTED NAME FORMS

**7 Definition of selected name forms****7.1 Country name form**

The `countryNameForm` name form specifies how entries of object class `country` may be named.

```
countryNameForm NAME-FORM ::= {
  NAMES          country
  WITH ATTRIBUTES {countryName}
  ID             id-nf-countryNameForm }
```

**7.2 Locality name form**

The `locNameForm` name form specifies how entries of object class `locality` may be named.

```
locNameForm NAME-FORM ::= {
  NAMES          locality
  WITH ATTRIBUTES {localityName}
  ID             id-nf-locNameForm }
```

**7.3 State Or Province name form**

The `sOPNameForm` name form specifies how entries of object class `locality` may be named.

```
sOPNameForm NAME-FORM ::= {
  NAMES          locality
  WITH ATTRIBUTES {stateOrProvinceName}
  ID             id-nf-sOPNameForm }
```

**7.4 Organization name form**

The `orgNameForm` name form specifies how entries of object class `organization` may be named.

```
orgNameForm NAME-FORM ::= {
  NAMES          organization
  WITH ATTRIBUTES {organizationName}
  ID             id-nf-orgNameForm }
```

**7.5 Organizational Unit name form**

The `orgUnitNameForm` name form specifies how entries of object class `organizationalUnit` may be named.

```
orgUnitNameForm NAME-FORM ::= {
  NAMES          organizationalUnit
  WITH ATTRIBUTES {organizationalUnitName}
  ID             id-nf-orgUnitNameForm }
```

## 7.6 Person name form

The `personNameForm` name form specifies how entries of object class `person` may be named.

```
personNameForm NAME-FORM ::= {
  NAMES          person
  WITH ATTRIBUTES {commonName}
  ID             id-nf-personNameForm }
```

## 7.7 Organizational Person name form

The `orgPersonNameForm` name form specifies how entries of object class `organizationalPerson` may be named.

```
orgPersonNameForm NAME-FORM ::= {
  NAMES          organizationalPerson
  WITH ATTRIBUTES {commonName}
  AND OPTIONALLY {organizationalUnitName}
  ID             id-nf-orgPersonNameForm }
```

## 7.8 Organizational Role name form

The `orgRoleNameForm` name form specifies how entries of object class `organizationalRole` may be named.

```
orgRoleNameForm NAME-FORM ::= {
  NAMES          organizationalRole
  WITH ATTRIBUTES {commonName}
  ID             id-nf-orgRoleNameForm }
```

## 7.9 Group Of Names name form

The `gONNameForm` name form specifies how entries of object class `groupOfNames` may be named.

```
gONNameForm NAME-FORM ::= {
  NAMES          groupOfNames
  WITH ATTRIBUTES {commonName}
  ID             id-nf-gONNameForm }
```

## 7.10 Residential Person name form

The `resPersonNameForm` name form specifies how entries of object class `residentialPerson` may be named.

```
resPersonNameForm NAME-FORM ::= {
  NAMES          residentialPerson
  WITH ATTRIBUTES {commonName}
  AND OPTIONALLY {streetAddress}
  ID             id-nf-resPersonNameForm }
```

## 7.11 Application Process name form

The `applProcessNameForm` name form specifies how entries of object class `applicationProcess` may be named.

```
applProcessNameForm NAME-FORM ::= {
  NAMES          applicationProcess
  WITH ATTRIBUTES {commonName}
  ID             id-nf-applProcessNameForm }
```

## 7.12 Application Entity name form

The `applEntityNameForm` name form specifies how entries of object class `applicationEntity` may be named.

```
applEntityNameForm NAME-FORM ::= {
  NAMES          applicationEntity
  WITH ATTRIBUTES {commonName}
  ID             id-nf-applEntityNameForm }
```

### 7.13 DSA name form

The `dsANamaeForm` name form specifies how entries of object class `dsa` may be named.

```
dsANamaeForm NAME-FORM ::= {
  NAMES          dSA
  WITH ATTRIBUTES {commonName}
  ID             id-nf-dsANamaeForm }
```

### 7.14 Device name form

The `deviceNameForm` name form specifies how entries of object class `device` may be named.

```
deviceNameForm NAME-FORM ::= {
  NAMES          device
  WITH ATTRIBUTES {commonName}
  ID             id-nf-deviceNameForm }
```

### 7.15 DMD name form

The `dMDNameForm` name form specifies how entries of object class `dMD` may be named.

```
dMDNameForm NAME-FORM ::= {
  NAMES          dMD
  WITH ATTRIBUTES {dmdName}
  ID             id-nf-dMDNameForm }
```

### 7.16 OI DC1 name form

The `oidC1NameForm` name form specifies how the entry of object class `oidObj1` shall be named.

```
oidC1NameForm NAME-FORM ::= {
  NAMES          oidCobj
  WITH ATTRIBUTES {oidC}
  ID             id-nf-oidC1NameForm }
```

### 7.17 OI DC2 name form

The `oidC2NameForm` name form specifies how entries of object class `oidObj2` shall be named.

```
oidC2NameForm NAME-FORM ::= {
  NAMES          oidCobj
  WITH ATTRIBUTES {oidC}
  ID             id-nf-oidC2NameForm }
```

### 7.18 OI DC name form

The `oidCNameForm` name form specifies how entries of object class `oidObjC` shall be named.

```
oidCNameForm NAME-FORM ::= {
  NAMES          oidCobj
  WITH ATTRIBUTES {oidC}
  ID             id-nf-oidCNameForm }
```

### 7.19 URNC name form

The `urnCNameForm` specifies how entries of object class `urnCobj` shall be named.

```
urnCNameForm NAME-FORM ::= {
  NAMES          urnCobj
  WITH ATTRIBUTES {urnC}
  ID             id-nf-urnCNameForm }
```

## 7.20 OID root name form

The `oidRootNf` name form is moved to here from Rec. ITU-T X.660 | ISO/IEC 9834-1.

```
oidRootNf NAME-FORM ::= {  
  NAMES          oidRoot  
  WITH ATTRIBUTES {oidC1 | oidC2 | oidC}  
  ID             id-oidRootNf }
```

## 7.21 OID arc name form

The `oidArcNf` name form is moved to here from Rec. ITU-T X.660 | ISO/IEC 9834-1.

```
oidArcNf NAME-FORM ::= {  
  NAMES          oidArc  
  WITH ATTRIBUTES {oidC}  
  ID             id-oidArcNf }
```

## Annex A

## Selected object classes and name forms in ASN.1

(This annex forms an integral part of this Recommendation | International Standard.)

This annex includes all of the ASN.1 type and value definitions contained in this Directory Specification in the form of the ASN.1 module `SelectedObjectClasses`.

```

SelectedObjectClasses
    {joint-iso-itu-t ds(5) module(1) selectedObjectClasses(6) 9}
DEFINITIONS ::=
BEGIN

-- EXPORTS All
/*
The types and values defined in this module are exported for use in the other ASN.1
modules contained within the Directory Specifications, and for the use of other
applications which will use them to access Directory services. Other applications may
use them for their own purposes, but this will not constrain extensions and
modifications needed to maintain or improve the Directory service.
*/
IMPORTS

    -- from Rec. ITU-T X.501 | ISO/IEC 9594-2

    id, id-nf, id-oc
        FROM UsefulDefinitions
            {joint-iso-itu-t ds(5) module(1) usefulDefinitions(0) 9} WITH SUCCESSORS

    alias, ATTRIBUTE, NAME-FORM, OBJECT-CLASS, top
        FROM InformationFramework
            {joint-iso-itu-t ds(5) module(1) informationFramework(1) 9} WITH SUCCESSORS

    -- from Rec. ITU-T X.520 | ISO/IEC 9594-6

    businessCategory, commonName, contentUrl, countryName, description,
    destinationIndicator, dmdName, epc, epcInUrn, facsimileTelephoneNumber,
    internationalISDNNumber, knowledgeInformation, localityName, member, oidC, oidC1,
    oidC2, organizationalUnitName, organizationName, owner, physicalDeliveryOfficeName,
    postalAddress, postalCode, postOfficeBox, preferredDeliveryMethod,
    presentationAddress, registeredAddress, roleOccupant, searchGuide, seeAlso,
    serialNumber, stateOrProvinceName, streetAddress, supportedApplicationContext,
    surname, tagAfi, tagLocation, tagOid, telephoneNumber, telexNumber, title, uii,
    uiiFormat, uiiInUrn, uniqueMember, urnC, x121Address
        FROM SelectedAttributeTypes
            {joint-iso-itu-t ds(5) module(1) selectedAttributeTypes(5) 9} WITH SUCCESSORS

    -- from Rec. ITU-T X.509 | ISO/IEC 9594-8

    authorityRevocationList, cACertificate, certificateRevocationList,
    crossCertificatePair, deltaRevocationList, supportedAlgorithms,
    userCertificate, userPassword
        FROM AuthenticationFramework
            {joint-iso-itu-t ds(5) module(1) authenticationFramework(7) 9} WITH SUCCESSORS

    userPwd
        FROM PasswordPolicy
            {joint-iso-itu-t ds(5) module(1) passwordPolicy(39) 9} WITH SUCCESSORS ;

-- Attribute sets

TelecommunicationAttributeSet ATTRIBUTE ::=
    {facsimileTelephoneNumber |
    internationalISDNNumber |
    telephoneNumber |
    telexNumber |
    preferredDeliveryMethod |

```



```

    destinationIndicator |
    registeredAddress |
    x121Address}

PostalAttributeSet ATTRIBUTE ::=
{physicalDeliveryOfficeName |
 postalAddress |
 postalCode |
 postOfficeBox |
 streetAddress}

LocaleAttributeSet ATTRIBUTE ::=
{localityName |
 stateOrProvinceName |
 streetAddress}

OrganizationalAttributeSet ATTRIBUTE ::=
{description |
 LocaleAttributeSet |
 PostalAttributeSet |
 TelecommunicationAttributeSet |
 businessCategory |
 seeAlso |
 searchGuide |
 userPassword}

-- Object classes

country OBJECT-CLASS ::= {
  SUBCLASS OF    {top}
  MUST CONTAIN   {countryName}
  MAY CONTAIN    {description |
                  searchGuide}
  LDAP-NAME      {"country"} -- RFC 4519
  ID             id-oc-country }

locality OBJECT-CLASS ::= {
  SUBCLASS OF    {top}
  MAY CONTAIN    {description |
                  searchGuide |
                  LocaleAttributeSet |
                  seeAlso}
  LDAP-NAME      {"locality"} -- RFC 4519
  ID             id-oc-locality }

organization OBJECT-CLASS ::= {
  SUBCLASS OF    {top}
  MUST CONTAIN   {organizationName}
  MAY CONTAIN    {OrganizationalAttributeSet}
  LDAP-NAME      {"organization"} -- RFC 4519
  ID             id-oc-organization }

organizationalUnit OBJECT-CLASS ::= {
  SUBCLASS OF    {top}
  MUST CONTAIN   {organizationalUnitName}
  MAY CONTAIN    {OrganizationalAttributeSet}
  LDAP-NAME      {"organizationalUnit"} -- RFC 4519
  ID             id-oc-organizationalUnit }

person OBJECT-CLASS ::= {
  SUBCLASS OF    {top}
  MUST CONTAIN   {commonName |
                  surname}
  MAY CONTAIN    {description |
                  telephoneNumber |
                  userPassword |
                  seeAlso}
  LDAP-NAME      {"person"} -- RFC 4519
  ID             id-oc-person }

organizationalPerson OBJECT-CLASS ::= {

```

```

SUBCLASS OF {person}
MAY CONTAIN {LocaleAttributeSet |
             PostalAttributeSet |
             TelecommunicationAttributeSet |
             organizationalUnitName |
             title}
LDAP-NAME {"organizationalPerson"} -- RFC 4519
ID        id-oc-organizationalPerson }

```

```

organizationalRole OBJECT-CLASS ::= {
SUBCLASS OF {top}
MUST CONTAIN {commonName}
MAY CONTAIN {description |
             LocaleAttributeSet |
             organizationalUnitName |
             PostalAttributeSet |
             preferredDeliveryMethod |
             roleOccupant |
             seeAlso |
             TelecommunicationAttributeSet}
LDAP-NAME {"organizationalRole"} -- RFC 4519
ID        id-oc-organizationalRole }

```

```

groupOfNames OBJECT-CLASS ::= {
SUBCLASS OF {top}
MUST CONTAIN {commonName | member}
MAY CONTAIN {description |
             organizationName |
             organizationalUnitName |
             owner |
             seeAlso |
             businessCategory}
LDAP-NAME {"groupOfNames"} -- RFC 4519
ID        id-oc-groupOfNames }

```

```

groupOfUniqueNames OBJECT-CLASS ::= {
SUBCLASS OF {top}
MUST CONTAIN {commonName |
             uniqueMember}
MAY CONTAIN {description |
             organizationName |
             organizationalUnitName |
             owner |
             seeAlso |
             businessCategory}
LDAP-NAME {"groupOfUniqueNames"} -- RFC 4519
ID        id-oc-groupOfUniqueNames }

```

```

residentialPerson OBJECT-CLASS ::= {
SUBCLASS OF {person}
MUST CONTAIN {localityName}
MAY CONTAIN {LocaleAttributeSet |
             PostalAttributeSet |
             preferredDeliveryMethod |
             TelecommunicationAttributeSet |
             businessCategory}
LDAP-NAME {"residentialPerson"} -- RFC 4519
ID        id-oc-residentialPerson }

```

```

applicationProcess OBJECT-CLASS ::= {
SUBCLASS OF {top}
MUST CONTAIN {commonName}
MAY CONTAIN {description |
             localityName |
             organizationalUnitName |
             seeAlso}
LDAP-NAME {"applicationProcess"} -- RFC 4519
ID        id-oc-applicationProcess }

```

```

applicationEntity OBJECT-CLASS ::= {
SUBCLASS OF {top}

```

```

MUST CONTAIN {commonName |
              presentationAddress}
MAY CONTAIN  {description |
              localityName |
              organizationName |
              organizationalUnitName |
              seeAlso |
              supportedApplicationContext}
LDAP-NAME    {"applicationEntity"}
ID           id-oc-applicationEntity }

dSA OBJECT-CLASS ::= {
  SUBCLASS OF {applicationEntity}
  MAY CONTAIN {knowledgeInformation}
  LDAP-NAME   {"dSA"}
  ID         id-oc-dSA }

device OBJECT-CLASS ::= {
  SUBCLASS OF {top}
  MUST CONTAIN {commonName}
  MAY CONTAIN {description |
              localityName |
              organizationName |
              organizationalUnitName |
              owner |
              seeAlso |
              serialNumber}
  LDAP-NAME   {"device"} -- RFC 4519
  ID         id-oc-device }

strongAuthenticationUser OBJECT-CLASS ::= {
  SUBCLASS OF {top}
  KIND        auxiliary
  MUST CONTAIN {userCertificate}
  LDAP-NAME   {"strongAuthenticationUser"} -- RFC 4523
  LDAP-DESC   {"X.521 strong authentication user"}
  ID         id-oc-strongAuthenticationUser }

userSecurityInformation OBJECT-CLASS ::= {
  SUBCLASS OF {top}
  KIND        auxiliary
  MAY CONTAIN {supportedAlgorithms}
  LDAP-NAME   {"userSecurityInformation"} -- RFC 4523
  LDAP-DESC   {"X.521 user security information"}
  ID         id-oc-userSecurityInformation }

userPwdClass OBJECT-CLASS ::= {
  KIND        auxiliary
  MAY CONTAIN { userPwd }
  ID         id-oc-userPwdClass }

certificationAuthority OBJECT-CLASS ::= {
  SUBCLASS OF {top}
  KIND        auxiliary
  MUST CONTAIN {cACertificate |
              certificateRevocationList |
              authorityRevocationList}
  MAY CONTAIN {crossCertificatePair}
  LDAP-NAME   {"certificationAuthority"} -- RFC 4523
  LDAP-DESC   {"X.509 certificate authority"}
  ID         id-oc-certificationAuthority }

certificationAuthority-V2 OBJECT-CLASS ::= {
  SUBCLASS OF {certificationAuthority}
  KIND        auxiliary
  MAY CONTAIN {deltaRevocationList}
  LDAP-NAME   {"certificationAuthority-V2"}
  LDAP-DESC   {"X.509 certificate authority, version 2"} -- RFC 4523
  ID         id-oc-certificationAuthority-V2 }

dMD OBJECT-CLASS ::= {

```

```

SUBCLASS OF {top}
MUST CONTAIN {dmdName}
MAY CONTAIN {OrganizationalAttributeSet}
LDAP-NAME {"dmd"}
ID id-oc-dmd }

oidC1obj OBJECT-CLASS ::= {
SUBCLASS OF {top}
MUST CONTAIN {oidC}
LDAP-NAME {"oidC1obj"}
ID id-oc-oidC1obj }

oidC2obj OBJECT-CLASS ::= {
SUBCLASS OF {top}
MUST CONTAIN {oidC}
LDAP-NAME {"oidC2obj"}
ID id-oc-oidC2obj }

oidCobj OBJECT-CLASS ::= {
SUBCLASS OF {top}
MUST CONTAIN {oidC}
LDAP-NAME {"oidCobj"}
ID id-oc-oidCobj }

oidRoot OBJECT-CLASS ::= {
SUBCLASS OF {alias}
MUST CONTAIN { oidC1 | oidC2 | oidC}
LDAP-NAME {"oidRoot"}
ID id-oidRoot }

oidArc OBJECT-CLASS ::= {
SUBCLASS OF {alias}
MUST CONTAIN {oidC}
LDAP-NAME {"oidArc"}
ID id-oidArc }

urnCobj OBJECT-CLASS ::= {
SUBCLASS OF {top}
MUST CONTAIN { urnC }
LDAP-NAME {"urnCobj"}
ID id-oc-urnCobj }

isoTagInfo OBJECT-CLASS ::= {
SUBCLASS OF { top }
KIND auxiliary
MAY CONTAIN { tagOid |
tagAfi |
uii |
uiiInUrn |
contentUrl |
tagLocation }
LDAP-NAME {"isoTagInfo"}
ID id-oc-isoTagInfo }

isoTagType OBJECT-CLASS ::= {
SUBCLASS OF { top }
KIND auxiliary
MAY CONTAIN { tagOid |
tagAfi |
uiiFormat }
LDAP-NAME {"isoTagType"}
ID id-oc-isoTagType }

epcTagInfoObj OBJECT-CLASS ::= {
SUBCLASS OF { top }
KIND auxiliary
MAY CONTAIN { epc |
epcInUrn |
contentUrl |
tagLocation }
LDAP-NAME {"epcTagInfoObj"}

```

```

ID          id-oc-epcTagInfoObj }

epcTagTypeObj OBJECT-CLASS ::= {
  SUBCLASS OF { top }
  KIND        auxiliary
  MAY CONTAIN { uiiFormat }
  LDAP-NAME   {"epcTagTypeObj"}
  ID          id-oc-epcTagTypeObj }

-- Name forms

countryNameForm NAME-FORM ::= {
  NAMES          country
  WITH ATTRIBUTES {countryName}
  ID             id-nf-countryNameForm }

locNameForm NAME-FORM ::= {
  NAMES          locality
  WITH ATTRIBUTES {localityName}
  ID             id-nf-locNameForm }

sOPNameForm NAME-FORM ::= {
  NAMES          locality
  WITH ATTRIBUTES {stateOrProvinceName}
  ID             id-nf-sOPNameForm }

orgNameForm NAME-FORM ::= {
  NAMES          organization
  WITH ATTRIBUTES {organizationName}
  ID             id-nf-orgNameForm }

orgUnitNameForm NAME-FORM ::= {
  NAMES          organizationalUnit
  WITH ATTRIBUTES {organizationalUnitName}
  ID             id-nf-orgUnitNameForm }

personNameForm NAME-FORM ::= {
  NAMES          person
  WITH ATTRIBUTES {commonName}
  ID             id-nf-personNameForm }

orgPersonNameForm NAME-FORM ::= {
  NAMES          organizationalPerson
  WITH ATTRIBUTES {commonName}
  AND OPTIONALLY {organizationalUnitName}
  ID             id-nf-orgPersonNameForm }

orgRoleNameForm NAME-FORM ::= {
  NAMES          organizationalRole
  WITH ATTRIBUTES {commonName}
  ID             id-nf-orgRoleNameForm }

gONNameForm NAME-FORM ::= {
  NAMES          groupOfNames
  WITH ATTRIBUTES {commonName}
  ID             id-nf-gONNameForm }

resPersonNameForm NAME-FORM ::= {
  NAMES          residentialPerson
  WITH ATTRIBUTES {commonName}
  AND OPTIONALLY {streetAddress}
  ID             id-nf-resPersonNameForm }

applProcessNameForm NAME-FORM ::= {
  NAMES          applicationProcess
  WITH ATTRIBUTES {commonName}
  ID             id-nf-applProcessNameForm }

applEntityNameForm NAME-FORM ::= {
  NAMES          applicationEntity
  WITH ATTRIBUTES {commonName}

```

```

ID                id-nf-applEntityNameForm }

dSASNameForm NAME-FORM ::= {
  NAMES           dSA
  WITH ATTRIBUTES {commonName}
  ID              id-nf-dSASNameForm }

deviceNameForm NAME-FORM ::= {
  NAMES           device
  WITH ATTRIBUTES {commonName}
  ID              id-nf-deviceNameForm }

dMDNameForm NAME-FORM ::= {
  NAMES           dMD
  WITH ATTRIBUTES {dmdName}
  ID              id-nf-dMDNameForm }

oidC1NameForm NAME-FORM ::= {
  NAMES           oidCobj
  WITH ATTRIBUTES {oidC}
  ID              id-nf-oidC1NameForm }

oidC2NameForm NAME-FORM ::= {
  NAMES           oidCobj
  WITH ATTRIBUTES {oidC}
  ID              id-nf-oidC2NameForm }

oidCNameForm NAME-FORM ::= {
  NAMES           oidCobj
  WITH ATTRIBUTES {oidC}
  ID              id-nf-oidCNameForm }

urnCNameForm NAME-FORM ::= {
  NAMES           urnCobj
  WITH ATTRIBUTES {urnC}
  ID              id-nf-urnCNameForm }

oidRootNf NAME-FORM ::= {
  NAMES           oidRoot
  WITH ATTRIBUTES {oidC1 | oidC2 | oidC}
  ID              id-oidRootNf }

oidArcNf NAME-FORM ::= {
  NAMES           oidArc
  WITH ATTRIBUTES {oidC}
  ID              id-oidArcNf }

-- Object identifier assignments
-- object identifiers assigned in other modules are shown in comments

-- Object classes

-- id-oc-top                OBJECT IDENTIFIER ::= {id-oc 0} Defined in X.501 | Part 2
-- id-oc-alias              OBJECT IDENTIFIER ::= {id-oc 1} Defined in X.501 | Part 2
id-oc-country              OBJECT IDENTIFIER ::= {id-oc 2}
id-oc-locality             OBJECT IDENTIFIER ::= {id-oc 3}
id-oc-organization         OBJECT IDENTIFIER ::= {id-oc 4}
id-oc-organizationalUnit   OBJECT IDENTIFIER ::= {id-oc 5}
id-oc-person               OBJECT IDENTIFIER ::= {id-oc 6}
id-oc-organizationalPerson OBJECT IDENTIFIER ::= {id-oc 7}
id-oc-organizationalRole   OBJECT IDENTIFIER ::= {id-oc 8}
id-oc-groupOfNames         OBJECT IDENTIFIER ::= {id-oc 9}
id-oc-residentialPerson    OBJECT IDENTIFIER ::= {id-oc 10}
id-oc-applicationProcess   OBJECT IDENTIFIER ::= {id-oc 11}
id-oc-applicationEntity    OBJECT IDENTIFIER ::= {id-oc 12}
id-oc-dSA                  OBJECT IDENTIFIER ::= {id-oc 13}
id-oc-device               OBJECT IDENTIFIER ::= {id-oc 14}
id-oc-strongAuthenticationUser OBJECT IDENTIFIER ::= {id-oc 15} -- Deprecated, see 6.15
id-oc-certificationAuthority OBJECT IDENTIFIER ::= {id-oc 16} -- Deprecated, see 6.17
id-oc-certificationAuthority-V2
                           OBJECT IDENTIFIER ::= {id-oc 16 2} -- Deprecated, see 6.18

```

```

id-oc-groupOfUniqueNames      OBJECT IDENTIFIER ::= {id-oc 17}
id-oc-userSecurityInformation  OBJECT IDENTIFIER ::= {id-oc 18}
-- id-oc-cRLDistributionPoint  OBJECT IDENTIFIER ::= {id-oc 19} Defined in X.509 | Part 8
id-oc-dmd                      OBJECT IDENTIFIER ::= {id-oc 20}
-- id-oc-pkiUser              OBJECT IDENTIFIER ::= {id-oc 21} Defined in X.509 | Part 8
-- id-oc-pkiCA                OBJECT IDENTIFIER ::= {id-oc 22} Defined in X.509 | Part 8
-- id-oc-deltaCRL             OBJECT IDENTIFIER ::= {id-oc 23} Defined in X.509 | Part 8
-- id-oc-pmiUser              OBJECT IDENTIFIER ::= {id-oc 24} Defined in X.509 | Part 8
-- id-oc-pmiAA                OBJECT IDENTIFIER ::= {id-oc 25} Defined in X.509 | Part 8
-- id-oc-pmiSOA               OBJECT IDENTIFIER ::= {id-oc 26} Defined in X.509 | Part 8
-- id-oc-attCertCRLDistributionPts
--                             OBJECT IDENTIFIER ::= {id-oc 27} Defined in X.509 | Part 8
-- id-oc-parent               OBJECT IDENTIFIER ::= {id-oc 28} Defined in X.501 | Part 2
-- id-oc-child                OBJECT IDENTIFIER ::= {id-oc 29} Defined in X.501 | Part 2
-- id-oc-cpCps                OBJECT IDENTIFIER ::= {id-oc 30} Defined in X.509 | Part 8
-- id-oc-pkiCertPath          OBJECT IDENTIFIER ::= {id-oc 31} Defined in X.509 | Part 8
-- id-oc-privilegePolicy      OBJECT IDENTIFIER ::= {id-oc 32} Defined in X.509 | Part 8
-- id-oc-pmiDelegationPath    OBJECT IDENTIFIER ::= {id-oc 33} Defined in X.509 | Part 8
-- id-oc-protectedPrivilegePolicy
--                             OBJECT IDENTIFIER ::= {id-oc 34} Defined in X.509 | Part 8
id-oc-oidC1obj                OBJECT IDENTIFIER ::= {id-oc 35}
id-oc-oidC2obj                OBJECT IDENTIFIER ::= {id-oc 36}
id-oc-oidCobj                 OBJECT IDENTIFIER ::= {id-oc 37}
id-oc-isoTagInfo              OBJECT IDENTIFIER ::= {id-oc 38}
id-oc-isoTagType              OBJECT IDENTIFIER ::= {id-oc 39}
-- id-oc-integrityInfo        OBJECT IDENTIFIER ::= {id-oc 40} Defined in X.501 | Part 2
id-oc-userPwdClass            OBJECT IDENTIFIER ::= {id-oc 41}
id-oc-urnCobj                 OBJECT IDENTIFIER ::= {id-oc 42}
id-oc-epcTagInfoObj           OBJECT IDENTIFIER ::= {id-oc 43}
id-oc-epcTagTypeObj          OBJECT IDENTIFIER ::= {id-oc 44}

id-oidRoot                    OBJECT IDENTIFIER ::= {id 3}
id-oidArc                      OBJECT IDENTIFIER ::= {id 5}

-- Name forms

id-nf-countryNameForm         OBJECT IDENTIFIER ::= {id-nf 0}
id-nf-locNameForm             OBJECT IDENTIFIER ::= {id-nf 1}
id-nf-sOPNameForm             OBJECT IDENTIFIER ::= {id-nf 2}
id-nf-orgNameForm             OBJECT IDENTIFIER ::= {id-nf 3}
id-nf-orgUnitNameForm         OBJECT IDENTIFIER ::= {id-nf 4}
id-nf-personNameForm          OBJECT IDENTIFIER ::= {id-nf 5}
id-nf-orgPersonNameForm       OBJECT IDENTIFIER ::= {id-nf 6}
id-nf-orgRoleNameForm         OBJECT IDENTIFIER ::= {id-nf 7}
id-nf-gONNameForm             OBJECT IDENTIFIER ::= {id-nf 8}
id-nf-resPersonNameForm       OBJECT IDENTIFIER ::= {id-nf 9}
id-nf-applProcessNameForm     OBJECT IDENTIFIER ::= {id-nf 10}
id-nf-applEntityNameForm      OBJECT IDENTIFIER ::= {id-nf 11}
id-nf-dSANNameForm            OBJECT IDENTIFIER ::= {id-nf 12}
id-nf-deviceNameForm          OBJECT IDENTIFIER ::= {id-nf 13}
-- id-nf-cRLDistPtNameForm    OBJECT IDENTIFIER ::= {id-nf 14}
id-nf-dMDNameForm             OBJECT IDENTIFIER ::= {id-nf 15}
-- id-nf-subentryNameForm     OBJECT IDENTIFIER ::= {id-nf 16}
id-nf-oidC1NameForm           OBJECT IDENTIFIER ::= {id-nf 17}
id-nf-oidC2NameForm           OBJECT IDENTIFIER ::= {id-nf 18}
id-nf-oidCNameForm            OBJECT IDENTIFIER ::= {id-nf 19}
id-nf-urnCNameForm            OBJECT IDENTIFIER ::= {id-nf 20}

id-oidRootNf                  OBJECT IDENTIFIER ::= {id 4}
id-oidArcNf                   OBJECT IDENTIFIER ::= {id 6}

END -- SelectedObjectClasses

```

Annex B

Suggested name forms and Directory information tree (DIT) structures

(This annex does not form an integral part of this Recommendation | International Standard.)

This annex suggests a Directory information tree (DIT) structure shown in Figure B.1 and related DIT structure rules using the name forms defined in clause 3. The rules cover an unconstrained DIT structure. This example is for illustrative purposes only, and is not intended to limit the types of names that can be validly constructed in the Directory.

The integer identifiers assigned in this annex and used in Figure B.1 are arbitrary and have no global (or standardized) significance. A particular structure rule identifier only has significance within the scope of the subschema in which it applied. Each Directory management domain (DMD) is responsible for creating its own DIT structure and structure rules that may differ from this example.

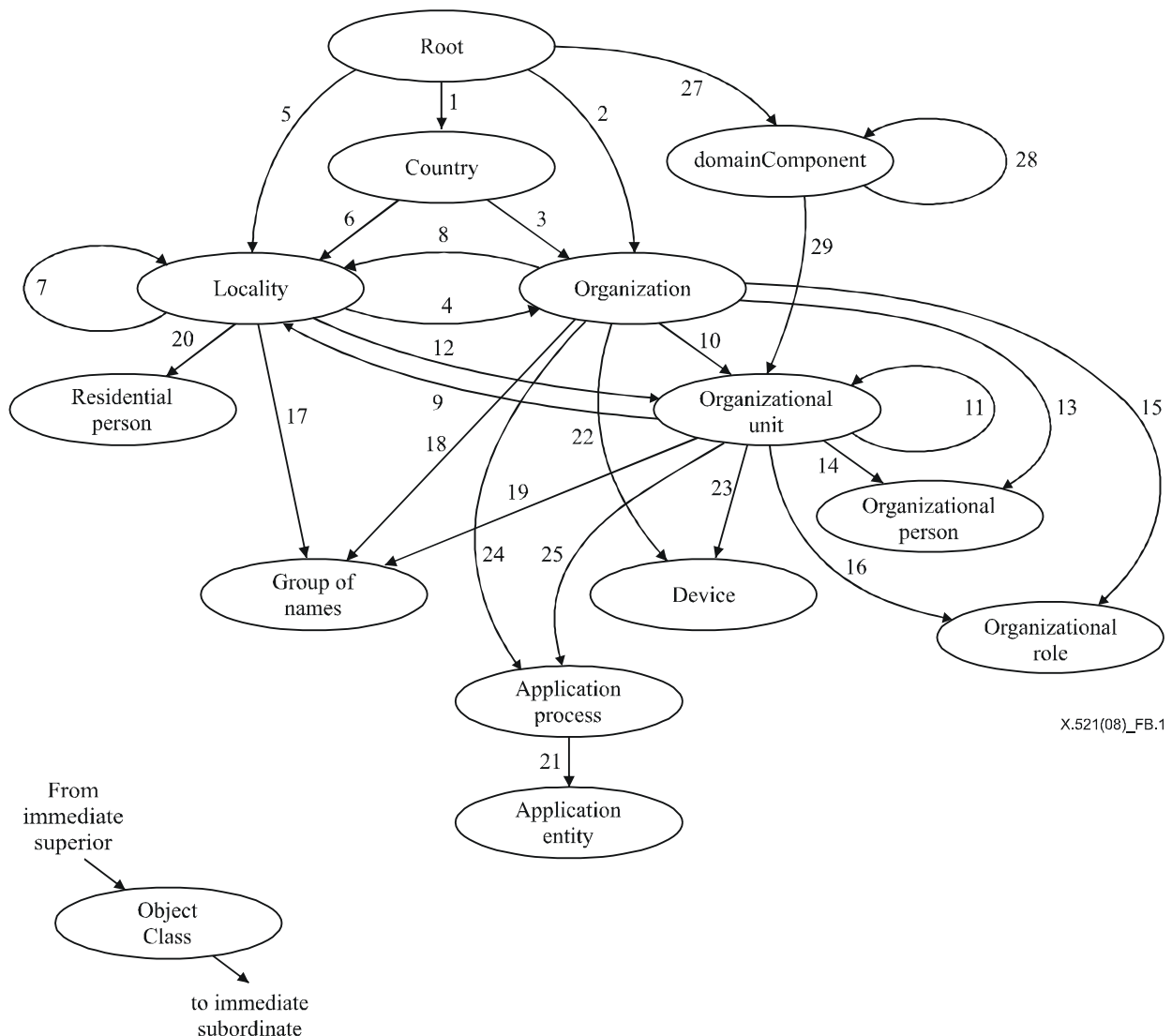


Figure B.1 – Example DIT structure

B.1 Country

Attribute type **countryName** is used for naming.

The root is the immediate superior to entries of object class **country**.

```
sr1 STRUCTURE-RULE ::= {
  NAME FORM    countryNameForm
  ID           1 }
```



## B.2 Organization

Attribute type **organizationName** is used for naming.

The root or an entry of object class **country** or **locality** can be the immediate superior of entries of object class **organization**.

NOTE – When the organization is directly under the root, this denotes an international organization. The naming values of the **organizationName** attribute for international organizations must all be distinct.

```

sr2  STRUCTURE-RULE ::= {
      NAME FORM      orgNameForm
      ID              2 }

sr3  STRUCTURE-RULE ::= {
      NAME FORM      orgNameForm
      SUPERIOR RULES { sr1.&id }
      ID              3 }

sr4  STRUCTURE-RULE ::= {
      NAME FORM      orgNameForm
      SUPERIOR RULES { sr5.&id | sr6.&id | sr7.&id | sr8.&id | sr9.&id }
      ID              4 }

```

## B.3 Locality

Attribute type **localityName** or **stateOrProvinceName** is used for naming.

NOTE – For naming locality using **stateOrProvinceName**, see B.12.

The root or an entry of object class **country**, **locality**, **organization** or **organizationalUnit** can be the immediate superior of entries of object class **locality**.

```

sr5  STRUCTURE-RULE ::= {
      NAME FORM      locNameForm
      ID              5 }

sr6  STRUCTURE-RULE ::= {
      NAME FORM      locNameForm
      SUPERIOR RULES { sr1.&id }
      ID              6 }

sr7  STRUCTURE-RULE ::= {
      NAME FORM      locNameForm
      SUPERIOR RULES { sr5.&id | sr6.&id | sr7.&id | sr8.&id | sr9.&id }
      ID              7 }

sr8  STRUCTURE-RULE ::= {
      NAME FORM      locNameForm
      SUPERIOR RULES { sr2.&id | sr3.&id | sr4.&id }
      ID              8 }

sr9  STRUCTURE-RULE ::= {
      NAME FORM      locNameForm
      SUPERIOR RULES { sr10.&id | sr11.&id | sr12.&id }
      ID              9 }

```

## B.4 Organizational Unit

Attribute type **organizationalUnitName** is used for naming.

An entry of object class **organization**, **organizationalUnit**, **locality** or **domainComponent** can be the immediate superior of entries of object class **organizationalUnit**.

```

sr10 STRUCTURE-RULE ::= {
      NAME FORM      orgUnitNameForm
      SUPERIOR RULES { sr2.&id | sr3.&id | sr4.&id }
      ID              10 }

```

```

sr11 STRUCTURE-RULE ::= {
  NAME FORM          orgUnitNameForm
  SUPERIOR RULES    { sr10.&id | sr11.&id | sr12.&id }
  ID                 11 }

```

```

sr12 STRUCTURE-RULE ::= {
  NAME FORM          orgUnitNameForm
  SUPERIOR RULES    { sr5.&id | sr6.&id | sr7.&id | sr8.&id | sr9.&id }
  ID                 12 }

```

## B.5 Organizational Person

Attribute type `commonName` and optionally `organizationalUnitName` is used for naming.

An entry of object class `organization` or `organizationalUnit` can be the immediate superior of entries of object class `organizationalPerson`.

```

sr13 STRUCTURE-RULE ::= {
  NAME FORM          orgPersonNameForm
  SUPERIOR RULES    { sr2.&id | sr3.&id | sr4.&id }
  ID                 13 }

```

```

sr14 STRUCTURE-RULE ::= {
  NAME FORM          orgPersonNameForm
  SUPERIOR RULES    { sr10.&id | sr11.&id | sr12.&id }
  ID                 14 }

```

## B.6 Organizational Role

Attribute type `commonName` is used for naming.

An entry of object class `organization` or `organizationalUnit` can be the immediate superior of entries of object class `organizationalRole`.

```

sr15 STRUCTURE-RULE ::= {
  NAME FORM          orgRoleNameForm
  SUPERIOR RULES    { sr2.&id | sr3.&id | sr4.&id }
  ID                 15 }

```

```

sr16 STRUCTURE-RULE ::= {
  NAME FORM          orgRoleNameForm
  SUPERIOR RULES    { sr10.&id | sr11.&id | sr12.&id }
  ID                 16 }

```

## B.7 Group of Names

Attribute type `commonName` is used for naming.

An entry of object class `locality`, `organization` or `organizationalUnit` can be the immediate superior of entries of object class `groupOfNames`.

```

sr17 STRUCTURE-RULE ::= {
  NAME FORM          gonNameForm
  SUPERIOR RULES    { sr5.&id | sr6.&id | sr7.&id | sr8.&id | sr9.&id }
  ID                 17 }

```

```

sr18 STRUCTURE-RULE ::= {
  NAME FORM          gonNameForm
  SUPERIOR RULES    { sr2.&id | sr3.&id | sr4.&id }
  ID                 18 }

```

```

sr19 STRUCTURE-RULE ::= {
  NAME FORM          gonNameForm
  SUPERIOR RULES    { sr10.&id | sr11.&id | sr12.&id }
  ID                 19 }

```

## B.8 Residential Person

Attribute type **commonName** and optionally attribute type **streetAddress** is used for naming.

An entry of object class **locality** is the immediate superior of entries of object class **residentialPerson**.

```
sr20 STRUCTURE-RULE ::= {
  NAME FORM      resPersonNameForm
  SUPERIOR RULES { sr5.&id | sr6.&id | sr7.&id | sr8.&id | sr9.&id }
  ID             20 }
```

## B.9 Application Entity

Attribute type **commonName** is used for naming.

An entry of object class **applicationProcess** is the immediate superior of entries of object class **applicationEntity**.

```
sr21 STRUCTURE-RULE ::= {
  NAME FORM      applEntityNameForm
  SUPERIOR RULES { sr24.&id | sr25.&id }
  ID             21 }
```

## B.10 Device

Attribute type **commonName** is used for naming.

An entry of object class **organization** or **organizationalUnit** can be the immediate superior of entries of object class **device**.

```
sr22 STRUCTURE-RULE ::= {
  NAME FORM      deviceNameForm
  SUPERIOR RULES { sr2.&id | sr3.&id | sr4.&id }
  ID             22 }

sr23 STRUCTURE-RULE ::= {
  NAME FORM      deviceNameForm
  SUPERIOR RULES { sr10.&id | sr11.&id | sr12.&id }
  ID             23 }
```

## B.11 Application Process

Attribute type **commonName** is used for naming.

An entry of object class **organization** or **organizationalUnit** can be the immediate superior of entries of object class **applicationProcess**.

```
sr24 STRUCTURE-RULE ::= {
  NAME FORM      applProcessNameForm
  SUPERIOR RULES { sr2.&id | sr3.&id | sr4.&id }
  ID             24 }

sr25 STRUCTURE-RULE ::= {
  NAME FORM      applProcessNameForm
  SUPERIOR RULES { sr10.&id | sr11.&id | sr12.&id }
  ID             25 }
```

## B.12 Alternative Structure Rule for Locality

If the **stateOrProvinceName** attribute type is used for naming locality and locality constrained to existing only as an immediate subordinate of country, then one additional structure rule is required to define this.

```
sr26 STRUCTURE-RULE ::= {
  NAME FORM      sOPNameForm
  SUPERIOR RULES { sr1.&id }
  ID             26 }
```

## ISO/IEC 9594-7:2020 (E)

In addition the structure rules **sr4**, **sr7**, **sr12**, **sr17**, and **sr20** must be modified to include **sr26** within their respective list of superior structure rule as follows.

```
sr4 STRUCTURE-RULE ::= {  
  NAME FORM      orgNameForm  
  SUPERIOR RULES { sr5.&id | sr6.&id | sr7.&id | sr8.&id | sr9.&id | sr26.&id }  
  ID             4 }
```

```
sr7 STRUCTURE-RULE ::= {  
  NAME FORM      locNameForm  
  SUPERIOR RULES { sr5.&id | sr6.&id | sr7.&id | sr8.&id | sr9.&id | sr26.&id }  
  ID             7 }
```

```
sr12 STRUCTURE-RULE ::= {  
  NAME FORM      orgUnitNameForm  
  SUPERIOR RULES { sr5.&id | sr6.&id | sr7.&id | sr8.&id | sr9.&id | sr26.&id }  
  ID             12 }
```

```
sr17 STRUCTURE-RULE ::= {  
  NAME FORM      gonNameForm  
  SUPERIOR RULES { sr5.&id | sr6.&id | sr7.&id | sr8.&id | sr9.&id | sr26.&id }  
  ID             17 }
```

```
sr20 STRUCTURE-RULE ::= {  
  NAME FORM      resPersonNameForm  
  SUPERIOR RULES { sr5.&id | sr6.&id | sr7.&id | sr8.&id | sr9.&id | sr26.&id }  
  ID             20 }
```

## Annex C

### Amendments and corrigenda

(This annex does not form an integral part of this Recommendation | International Standard.)

This edition of this Directory Specification includes the following amendment to the previous edition that were balloted and approved by ISO/IEC:

- Amendment 1 for General updates.

This edition of this Directory Specification does not include any technical corrigenda, as there were no accepted defect reports against the previous edition of this Directory Specification.

## Bibliography

- IETF RFC 4519, *Lightweight Directory Access Protocol (LDAP): Schema for User Applications*.
- IETF RFC 4523, *Lightweight Directory Access Protocol (LDAP): Schema Definitions for X.509 Certificates*.



## SERIES OF ITU-T RECOMMENDATIONS

Series A	Organization of the work of ITU-T
Series D	Tariff and accounting principles and international telecommunication/ICT economic and policy issues
Series E	Overall network operation, telephone service, service operation and human factors
Series F	Non-telephone telecommunication services
Series G	Transmission systems and media, digital systems and networks
Series H	Audiovisual and multimedia systems
Series I	Integrated services digital network
Series J	Cable networks and transmission of television, sound programme and other multimedia signals
Series K	Protection against interference
Series L	Environment and ICTs, climate change, e-waste, energy efficiency; construction, installation and protection of cables and other elements of outside plant
Series M	Telecommunication management, including TMN and network maintenance
Series N	Maintenance: international sound programme and television transmission circuits
Series O	Specifications of measuring equipment
Series P	Telephone transmission quality, telephone installations, local line networks
Series Q	Switching and signalling, and associated measurements and tests
Series R	Telegraph transmission
Series S	Telegraph services terminal equipment
Series T	Terminals for telematic services
Series U	Telegraph switching
Series V	Data communication over the telephone network
<b>Series X</b>	<b>Data networks, open system communications and security</b>
Series Y	Global information infrastructure, Internet protocol aspects, next-generation networks, Internet of Things and smart cities
Series Z	Languages and general software aspects for telecommunication systems