# Information technology — Open Systems Interconnection — The Directory —

## Part 6:
## Selected attribute types

TECHNICAL CORRIGENDUM 1

*Technologies de l'information — Interconnexion de systèmes ouverts (OSI) — L'annuaire —*

*Partie 6: Types d'attributs sélectionnés*

*RECTIFICATIF TECHNIQUE 1*

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**ICS 35.100.70**                                         **Ref. No. ISO/IEC 9594-6:2014/Cor.1:2015(E)**

INTERNATIONAL STANDARD
ITU-T RECOMMENDATION

## Information technology – Open Systems Interconnection –
## The Directory: Selected attribute types

## Technical Corrigendum 1

# 1    1) Correction of the defects reported in defect report 392

## 1.1    1.1)    Clause 6.3.1

*Update clause 6.3.1 as shown:*

### 1.1.1    6.3.1    Country Name

A value of ~~T~~the ~~Country Name~~ `countryName` attribute type specifies a country. When used as a component of a directory name, it identifies the country in which the named object is physically located or with which it is associated in some other important way.

An attribute value for country name is a string chosen from ISO 3166-1 alpha-2 ~~or ISO 3166-3 alpha-2.~~

```
countryName ATTRIBUTE ::= {
  SUBTYPE OF            name
  WITH SYNTAX           CountryName
  SINGLE VALUE          TRUE
  LDAP-SYNTAX           countryString.&id
  LDAP-NAME             {"c"}
  ID                    id-at-countryName }
```

CountryName ::= PrintableString(SIZE (2)) (CONSTRAINED BY { -- ISO 3166 alpha-2 codes only -- })
~~CountryName ::= PrintableString(SIZE (2)) -- ISO 3166 codes only~~

## 1.2    1.2)    New attribute types for three-letter country code and for a numeric country code

### 1.2.1    1.2.1)    Clauses 6.3.1 and 6.3.2

*Add the following definitions after clause 6.3.1, starting with a new clause 6.3.2 and renumber subsequent clauses:*

### 1.2.2    6.3.2    Three-character country code

A value of `countryCode3a` attribute type specifies a country. When used as a component of a directory name, it identifies the country in which the named object is physically located or with which it is associated in some other important way.

An attribute value for `countryCode3a` is a string chosen from ISO 3166-1 alpha-3.

```
countryCode3c ATTRIBUTE ::= {
  SUBTYPE OF            name
  WITH SYNTAX           CountryCode3c
  SINGLE VALUE          TRUE
  LDAP-SYNTAX           countryString3c.&id
  LDAP-NAME             {"c3"}
  ID                    id-at-countryCode3c }
```

CountryCode3c ::= PrintableString(SIZE (3)) (CONSTRAINED BY { -- ISO 3166 alpha-3 codes only -- })

### 1.2.3   6.3.3   Numeric character country code

A value of `countryCode3n` attribute type specifies a country. When used as a component of a directory name, it identifies the country in which the named object is physically located or with which it is associated in some other important way.

An attribute value for `countryCode3n` is a string chosen from ISO 3166-1 numeric-3.

```
countryCode3n ATTRIBUTE ::= {
  SUBTYPE OF            name
  WITH SYNTAX           CountryCode3n
  SINGLE VALUE          TRUE
  LDAP-SYNTAX           countryString3n.&id
  LDAP-NAME             {"n3"}
  ID                    id-at-countryCode3n }

CountryCode3n ::= NumericString(SIZE (3)) (CONSTRAINED BY { -- ISO 3166 numeric-3 codes
only -- })
```

### 1.3   1.3)   Clauses 9.1.4 and 9.1.5

*Add new clauses 9.1.4 and 9.1.5 after clause 9.1.3:*

#### 1.3.1   9.1.4   Three character country string syntax

```
countryString3a SYNTAX-NAME ::= {
  LDAP-DESC         "Country String alphas-3"
  DIRECTORY SYNTAX  CountryCode3c
  ID                id-asx-countryString3c }
```

A value which has an LDAP country string syntax as a three-printable character string according to ISO 3166-1 alpha-3.

#### 1.3.2   9.1.5   Numeric country string syntax

```
countryString3n SYNTAX-NAME ::= {
  LDAP-DESC         "Country String numeric-3"
  DIRECTORY SYNTAX  CountryCode3n
  ID                id-asx-countryString3n }
```

A value which has an LDAP country string syntax as a three numeric string according to ISO 3166-1 numeric-3.

### 1.4   1.4)   Annex A definitions

*Add the definitions introduced/updated above to Annex A.*

### 1.5   1.5)   Additions to Annex A

*In Annex A, at the appropriate places, add:*

```
id-at-countryCode3c                      OBJECT IDENTIFIER ::= {id-at 98}
id-at-countryCode3n                      OBJECT IDENTIFIER ::= {id-at 99}

id-asx-countryString3c                   OBJECT IDENTIFIER ::= {id-asx 7}
id-asx-countryString3n                   OBJECT IDENTIFIER ::= {id-asx 8}
```

## 2   2) Correction of the defects reported in defect report 395

### 2.1   2.1)   References

*Add the following references to clause 2.2:*

– IETF RFC 3492 (2003), *Punycode: A Bootstring encoding of Unicode for Internationalized Domain Names in Applications (IDNA).*

– IETF RFC 5890 (2010), *Internationalized Domain Names for Applications (IDNA): Definitions and Document Framework.*

– IETF RFC 5892 (2010), *The Unicode Code Points and Internationalized Domain Names for Applications (IDNA).*

## 2.2   2.2)   Abbreviations

*Add the following abbreviations to clause 4:*

IDN      Internationalized Domain Name

LDH      Letters, Digits, Hyphen

## 2.3   2.3)   Clause 6.2.15

*Add the following new attribute type to clause 6.2 (as clause 6.2.15):*

### 2.3.1   6.2.15   Domain name

A value of attribute type **dnsName** is used for holding a DNS domain name, which may be an internationalized domain names (IDN).

```
dnsName ATTRIBUTE ::= {
  WITH SYNTAX              DomainName
  EQUALITY MATCHING RULE   dnsNameMatch
  LDAP-SYNTAX             dnsString.&id
  LDAP-NAME              {"DNS name"}
  ID                      id-at-dnsName }

DomainName ::= UTF8String (CONSTRAINED BY { -- Conforms to the format of a
(internationalized) domain name. -- })
```

A value of the **DomainName** data type shall be in the syntax, as specified by section 2.3.1 of IETF RFC 5890 meaning that a domain name is a sequence of labels in the letters, digits, hyphen (LDH) format separated by dots.

A label may be in three formats:

a)   All characters in the label are from the Basic Latin collection as defined by ISO/IEC 10646 (i.e., having code points in the ranges 002D, 0030-0039, 0041-005A and 0061-007A) and it does not start with "xn--". The maximum length is 63 octets.

b)   It is an A-label as defined in IETF RFC 5890, i.e., it starts with the "xn--" and is a U-label converted to valid ASCII characters as in item a) using the Punycode algorithm defined by IETF RFC 3492. The converted string shall be maximum 59 octets. To be valid, it shall be possible for an A-label to be converted to a valid U-label.

  NOTE 1 – An A-label is normally not human readable.

c)   It is a U-label as defined in IETF RFC 5890, i.e., it contains characters outside the Basic Latin collection. A valid U-label shall not include any characters that are not included in the restricted Unicode repertoire as defined by IETF RFC 5892 and it shall be convertible to a valid A-label as defined in item b). A valid U-label may be more than 63 octets.

  NOTE 2 – In a constraint environment, it is recommended to use a domain name whenever possible, according to item a).

  NOTE 3 – When used as a naming attribute, a unique distinguished name may be constructed using only this attribute type.

An attribute of type **dnsName** to be used as a distinguished name in a public-key certificate or in an attribute certificate shall be a fully-qualified domain name (FQDN), i.e., it shall identify a particular entity. An FQDN may have an asterisk ('*') as an additional leftmost label, which is a substitute (wildcard) for all labels at the next levels of subdomains of the domain identified by the FQDN without the asterisk. An attribute of type **dnsName** holding an FQDN with a wildcard label may in some cases be used in the **subject** component of an end-entity public-key certificate.

## 2.4   2.4)   New level 2 header for clause 8.9

*Add the following new level 2 header:*

**2.5   8.9        Identity matching rules**

**2.6   2.5)      Change to current clause 8.9 header**

*Change the current 8.9 header to:*

**2.6.1   8.9.1    URI match**

**2.7   2.6)      New matching rule**

*Add a new matching rule:*

**2.7.1   8.9.2    DNS name match**

The **dnsNameMatch** compares two values of type **dnsName** for equality and is defined as:

```
dnsNameMatch MATCHING-RULE ::= {
  SYNTAX       DomainName
  LDAP-SYNTAX  dnsString.&id
  LDAP-NAME    {"dnsNameMatch"}
  ID           id-mr-dnsNameMatch }
```

The equality matching is performed label for label. If the number of the labels in the two attribute values are different, the rule shall return FALSE. The rule shall return TRUE for each pair of labels matched for the rule to return TRUE for the two values. Otherwise, it shall return FALSE. The matching of the individual labels shall be performed as follows:

   a)   If one of the labels to be compared is of the type defined in item a) of clause 6.2.15 and the other label is either an A-label or a U-label as defined in IETF RFC 5890, the rule shall return FALSE.

   b)   If the two labels are of the same type, they shall be compared following the rules for **caseIgnoreMatch**.

   c)   If one the labels is of type A-label and the other one is of type U-label, the latter shall be converted to an A-label before comparison following the rules for **caseIgnoreMatch**.

In addition, the following applies if one or both of the values have wildcard ('*') labels:

   d)   If at least one of the values contains more than one wildcard label or if a wildcard label is not the leftmost label, the rule shall return FALSE.

   e)   If one or both the values has a wildcard as the leftmost label, the remaining labels shall be matched as stated in a) to c) above and shall return TRUE or FALSE accordingly.

   NOTE – The effect of the wildcard match is that *.example.com will match a.example.com and b.example.com but not a.b.example.com nor example.com.

**2.8   2.7)      New syntax definition**

*Add a new syntax definition:*

**2.8.1   9.1.6    DNS name string syntax**

```
dnsString SYNTAX-NAME ::= {
  LDAP-DESC         "DNS Name String"
  DIRECTORY SYNTAX  DomainName
  ID                id-asx-dnsString }
```

A value, which is an internationalized domain name (IDN), has a syntax as specified in clause 6.2.15.

**2.9   2.8)      Annex A update**

*Add the above-mentioned attribute type definition to Annex A.*

**2.10 2.9)      Annex A addition**

*Add the following to Annex A:*

```
id-at-dnsName                           OBJECT IDENTIFIER ::= {id-at 100}
id-mr-dnsNameMatch                      OBJECT IDENTIFIER ::= {id-mr 74}
id-asx-dnsString                        OBJECT IDENTIFIER ::= {id-asx 9}
```