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Infrastructure of audiovisual services – Systems and terminal equipment for audiovisual services

Directory services architecture for H.323

ITU-T Recommendation H.350.1

ITU-T H-SERIES RECOMMENDATIONS

AUDIOVISUAL AND MULTIMEDIA SYSTEMS

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

ITU-T Recommendation H.350.1

Directory services architecture for H.323

Summary

This Recommendation describes an LDAP schema to represent H.323 endpoints. It is an auxiliary class related to ITU-T Rec. H.350 and derives much of its functionality from that architecture. Implementors should review ITU-T Rec. H.350 in detail before proceeding with this Recommendation. Its attributes include all H.323 Alias types. These aliases can be downloaded to an endpoint for automatic configuration, accessed by a gatekeeper for call signalling and authorization, and published to white pages to create user dialling directories.

The scope of this Recommendation does not include normative methods for the use of the LDAP directory itself or the data it contains. The purpose of the schema is not to represent all possible data elements in the H.323 protocol, but rather to represent the minimal set required to accomplish the design goals enumerated in ITU-T Rec. H.350.

FOREWORD

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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.

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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.

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CONTENTS

ITU-T Recommendation H.350.1

Directory services architecture for H.323

1 Scope

This Recommendation describes an LDAP schema to represent H.323 endpoints. It is an auxiliary class related to ITU-T Rec. H.350 and derives much of its functionality from that architecture. Implementers should review ITU-T Rec. H.350 in detail before proceeding with this Recommendation. Its attributes include all H.323 Alias types. These aliases can be downloaded to an endpoint for automatic configuration, accessed by a gatekeeper for call signalling and authorization, and published to white pages to create user dialling directories.

The scope of this Recommendation does not include normative methods for the use of the LDAP directory itself or the data it contains. The purpose of the schema is not to represent all possible data elements in the H.323 protocol, but rather to represent the minimal set required to accomplish the design goals enumerated in ITU-T Rec. H.350.

1.1 Extending the schema

The h323Identity classes may be extended as necessary for specific implementations. See the base H.350 document for a discussion on schema extension.

2 References

The following ITU-T Recommendations and other references contain provisions, which, through reference in this text, constitute provisions of this Recommendation. At the time of publication, the editions indicated were valid. All Recommendations and other references are subject to revision; users of this Recommendation are therefore encouraged to investigate the possibility of applying the most recent edition of the Recommendations and other references listed below. A list of the currently valid ITU-T Recommendations is regularly published. The reference to a document within this Recommendation does not give it, as a stand-alone document, the status of a Recommendation.

2.1 Normative references

– ITU-T Recommendation H.225.0 (2003), *Call signalling protocols and media stream packetization for packet-based multimedia communications systems*.

– ITU-T Recommendation H.323 (2003), *Packet-based multimedia communications systems*.

– ITU-T Recommendation H.350 (2003), *Directory Services Architecture for Multimedia Conferencing*.

– IETF RFC 3377 (2002), *Lightweight Directory Access Protocol (v3): Technical Specification*.

2.2 Informative references

– HOWES (Timothy A.), PhD, SMITH (Mark C.), GOOD (Gordon S.): *Understanding And Deploying LDAP Directory Services*, New Riders Publishing, 1999, ISBN: 1578700701.

– HOWES (Timothy A.), PhD, SMITH (Mark C.): *LDAP Programming Directory-Enabled Applications with Lightweight Directory Access Protocol*, New Riders Publishing, 1997, ISBN: 1578700000.

3 Definitions

This Recommendation defines the following terms:

3.1 **call server**: A protocol-specific signalling engine that routes video or voice calls on the network. In H.323 this entity is a gatekeeper. In SIP, this entity is a SIP Proxy Server. Note that not all signalling protocols use a call server.

3.2 **commObject**: An LDAP object class defined in ITU-T Rec. H.350 that represents generic multimedia conferencing endpoints.

3.3 **endpoint**: A logical device that provides video and/or voice media encoding/decoding, and signalling functions. Examples include:

1) a group teleconferencing appliance that is located in a conference room;

2) an IP telephone;

3) a software program that takes video and voice from a camera and microphone and encodes it and applies signalling using a host computer.

Note that from the perspective of most signalling protocols, gateways and MCUs are special cases of endpoints.

3.4 **enterprise directory**: A canonical collection of information about users in an organization. Typically this information is collected from a variety of organizational units to create a whole. For example, Human Resources may provide name and address, Telecommunications may provide the telephone number, Information Technology may provide the email address, etc. For the purposes of this architecture, it is assumed that an enterprise directory is accessible via LDAP.

3.5 **gateway**: A device that translates from one protocol to another. Often gateways translate between the IP network and the public switched voice network to allow integration of the two.

3.6 **MCU**: Multipoint Control Unit. A device capable of mixing audio/video from multiple endpoints to create a virtual meeting space.

3.7 **resource**: A non-human entity to which an endpoint is associated. For example, and endpoint may be associated with a conference room, classroom, office, or other physical or virtual location.

3.8 **white pages**: An application that allows end users to look up the address of another user.

4 Abbreviations

This Recommendation uses the following abbreviations:

LDAP Lightweight Directory Access Protocol (as defined in RFC 1777).

5 Conventions

In this Recommendation, the following conventions are used:

"Shall" indicates a mandatory requirement.

"Should" indicates a suggested but optional course of action.

"May" indicates an optional course of action rather than a recommendation that something take place.

References to clauses, subclauses, annexes and appendices refer to those items within this Recommendation unless another specification is explicitly listed.

6 Object Class definitions

The h323Identity object class represents H.323 endpoints. It is an auxiliary class and is derived from the commObject class defined in ITU-T Rec. H.350. Note that the following seven alias types are defined in ITU-T Rec. H.323 as dialling methods. Each of these alias types are represented below with corresponding h323Identity definitions. Keep in mind that these are separate fields from other endpoint information in the enterprise directory. For example, email-ID is a separate field than a user's email address as represented in the enterprise directory. For implementation purposes, an administrator may set these values equal by direct entry or by referral.

* h323-ID

* dialedDigits

* email-ID

* URL-ID

* transportID

* partyNumber

* mobileUIM

6.1 h323Identity

```
OID: 0.0.8.350.1.1.3.2.1
objectclasses: (0.0.8.350.1.1.3.2.1
NAME 'h323Identity'
DESC 'h323Identity object'
SUP top AUXILIARY
MAY ( h323IdentityGKDomain $ h323Identityh323-ID $
h323IdentitydialedDigits $ h323Identityemail-ID $
h323IdentityURL-ID $ h323IdentitytransportID $
h323IdentitypartyNumber $ h323IdentitymobileUIM $
h323IdentityEndpointType  $ h323IdentityServiceLevel )
)
```

6.2 h323IdentityGKDomain

```
OID: 0.0.8.350.1.1.3.1.1
attributetypes: (0.0.8.350.1.1.3.1.1
NAME 'h323IdentityGKDomain'
DESC 'FQDN of the Gatekeeper'
EQUALITY caseIgnoreIA5Match
SYNTAX 1.3.6.1.4.1.1466.115.121.1.26 )
```

Application utility class

standard

Number of values

multi

Definition

Specifies the FQDN name or IP address of the gatekeeper to which the endpoint should register.

Permissible values (if controlled)

Notes

In the case where endpoint gatekeeper location is configured via H323 URL, please note that this attribute will not hold an H.323 URL with a scheme name but will hold a valid

DNS domain name. If an endpoint is provisioned for its Gatekeeper location with just a valid DNS domain name it is assumed that this DNS domain name is the value of the *hostport* of the H.323 URL. O.8.2/H.323 describes this special case. In particular, the endpoint will attempt to retrieve from the specified domain name value an SRV record indicating the gatekeeper(s) address. If the SRV lookup fails, then the endpoint will attempt to retrieve an A record. Clause O.9/H.323 describes the flow of the lookup process.

Semantics

Example applications for which this attribute would be useful

A web page that displays a user's proper endpoint configuration information.

Example (LDIF fragment)
```
h323IdentityGKDomain: gk.radvision.com   // FQDN example
h323IdentityGKDomain: 1.1.1.1            // IP address example
```

6.3   h323Identityh323-ID

```
OID: 0.0.8.350.1.1.3.1.2
attributetypes: (0.0.8.350.1.1.3.1.2
NAME 'h323Identityh323-ID'
DESC 'specifies the endpoint address alias as specified in H.323'
EQUALITY caseIgnoreIA5Match
SUBSTR caseIgnoreIA5SubstringsMatch
SYNTAX 1.3.6.1.4.1.1466.115.121.1.26 )
```

Application utility class

Standard

Number of values

multi

Definition

The endpoint's h323-ID alias as defined in ITU-T Rec. H.225. This is one of the dialling attributes defined by ITU-T Rec. H.323.

Permissible values (if controlled)

Notes

This field is often incorrectly referred to as 'alias' or 'user name' in many endpoints on the market.

Semantics

Example applications for which this attribute would be useful

white pages, directory of directories, a web page that displays a user's correct configuration information.

Example (LDIF fragment)
```
h323Identityh323-ID: johnsmith
h323Identityh323-ID: conferenceroom201
```

6.4   h323IdentitydialedDigits

```
OID: 0.0.8.350.1.1.3.1.3
attributetypes: (0.0.8.350.1.1.3.1.3
NAME 'h323IdentitydialedDigits'
DESC 'Specifies the endpoint dialled digits as specified in H.323'
EQUALITY caseIgnoreIA5Match
SUBSTR caseIgnoreIA5SubstringsMatch
SYNTAX 1.3.6.1.4.1.1466.115.121.1.26 )
```

Application utility class

Standard

Number of values

multi

Definition

The endpoint's H.323 dialedDigits alias as defined in ITU-T Rec. H.225. This is one of the dialling attributes defined by ITU-T Rec. H.323.

Permissible values (if controlled)

Notes

This field is often incorrectly referred to as 'extension', 'E164' or 'user number' in many endpoints on the market.

Semantics

Example applications for which this attribute would be useful

white pages, directory of directories, a web page that displays a user's correct configuration information.

Example (LDIF fragment)

```
h323IdentitydialedDigits: 2266126
```

6.5   h323Identityemail-ID

```
OID: 0.0.8.350.1.1.3.1.4
attributetypes: (0.0.8.350.1.1.3.1.4
NAME 'h323Identityemail-ID'
DESC 'Specifies an H.323 entity that can be reached using H.323'
EQUALITY caseIgnoreIA5Match
SUBSTR caseIgnoreIA5SubstringsMatch
SYNTAX 1.3.6.1.4.1.1466.115.121.1.26 )
```

Application utility class

Standard

Number of values

multi

Definition

The endpoint's H.323 email-ID alias as defined in ITU-T Rec. H.225. This is one of the dialling attributes defined by ITU-T Rec. H.323.

Permissible values (if controlled)

Notes

In some implementations, it may be possible to have this field refer to the commOwner's email address in the enterprise directory.

Semantics

Example applications for which this attribute would be useful

white pages, directory of directories, a web page that displays a user's correct configuration information.

Example (LDIF fragment)

```
h323Identityemail-ID: user@host
```

6.6 h323IdentityURL-ID

```
OID: 0.0.8.350.1.1.3.1.5
attributetypes: (0.0.8.350.1.1.3.1.5
NAME 'h323IdentityURL-ID'
DESC 'H.323 specs'
EQUALITY caseExactMatch
SUBSTR caseExactSubstringsMatch
SYNTAX 1.3.6.1.4.1.1466.115.121.1.15 )
```

Application utility class

> Standard

Number of values

> multi

Definition

> The endpoint's H.323 URL-ID alias as defined in ITU-T Rec. H.323 version 4. This is one of the dialling attributes defined by ITU-T Rec. H.323.

Permissible values (if controlled)

Notes

> The H.323 URL has the general form of user@hostport where either both of the parts (i.e. user and host) or only one of the parts (i.e. user alone or @host alone) is present. The user part corresponds to an H.323 user or service name. The host part is a legal numeric IP address or a fully qualified domain name, thus providing means for address resolution using the DNS infrastructure. Examples include h323:9198437008, h323:dumbledore@gatekeeper.hsww.edu, h323:dumbledore@152.2.2.203, etc. Note that this dialling mechanism is expected to become the preferred addressing scheme for ITU-T Rec. H.323.

Semantics

Example applications for which this attribute would be useful

> white pages, directory of directories, a web page that displays a user's correct configuration information.

Example (LDIF fragment)
```
h323IdentityURL-ID: h323:dumbledore@gatekeeper.hsww.edu
```

6.7 h323IdentitytransportID

```
OID: 0.0.8.350.1.1.3.1.6
attributetypes: (0.0.8.350.1.1.3.1.6
NAME 'h323IdentitytransportID'
DESC 'specifies endpoint transport Id as defined in H.323'
EQUALITY caseIgnoreIA5Match
SUBSTR caseIgnoreIA5SubstringsMatch
SYNTAX 1.3.6.1.4.1.1466.115.121.1.26 )
```

Application utility class

> Standard

Number of values

> multi

Definition

The endpoint's H.323 transport ID as defined in ITU-T Rec. H.225. This is one of the dialling attributes defined by ITU-T Rec. H.323.

Permissible values (if controlled)

Notes

Semantics

Example applications for which this attribute would be useful

Example (LDIF fragment)
```
h323IdentitytransportID: 161.58.151.216
```

6.8   h323IdentitypartyNumber

```
OID: 0.0.8.350.1.1.3.1.7
attributetypes: (0.0.8.350.1.1.3.1.7
NAME 'h323IdentitypartyNumber'
DESC 'endpoint party Number as defined in H.323'
EQUALITY caseIgnoreIA5Match
SUBSTR caseIgnoreIA5SubstringsMatch
SYNTAX 1.3.6.1.4.1.1466.115.121.1.26 )
```

Application utility class

Standard

Number of values

multi

Definition

The endpoint's H.323 partyNumber alias as defined in ITU-T Rec. H.225. This is one of the dialling attributes defined by ITU-T Rec. H.323.

Permissible values (if controlled)

Notes

Semantics

Example applications for which this attribute would be useful

Example (LDIF fragment)
```
h323IdentitypartyNumber: 2266126
```

6.9   h323IdentitymobileUIM

```
OID: 0.0.8.350.1.1.3.1.8
attributetypes: (0.0.8.350.1.1.3.1.8
NAME 'h323IdentitymobileUIM'
DESC 'endpoint mobile UIM as defined in H.323 document'
EQUALITY caseIgnoreIA5Match
SUBSTR caseIgnoreIA5SubstringsMatch
SYNTAX 1.3.6.1.4.1.1466.115.121.1.26 )
```

Application utility class

Standard

Number of values

multi

Definition

The endpoint's H.323 mobileUIM alias as defined in ITU-T Rec. H.225. This is one of the dialling attributes defined by ITU-T Rec. H.323.

Permissible values (if controlled)

Notes

Semantics

Example applications for which this attribute would be useful

Example (LDIF fragment)
```
h323IdentitymobileUIM: EXAMPLE
```

6.10   h323IdentityEndpointType

```
OID: 0.0.8.350.1.1.3.1.9
attributetypes: (0.0.8.350.1.1.3.1.9
NAME 'h323IdentityEndpointType'
DESC 'The endpoint H.323 type as defined in ITU-T H.323v4.'
EQUALITY caseIgnoreMatch
SUBSTR caseIgnoreSubstringsMatch
SYNTAX 1.3.6.1.4.1.1466.115.121.1.15 )
```

Application utility class

> Standard

Number of values

> multi

Definition

> This describes the type of endpoint as defined in ITU-T Rec. H.323. Values must be one of the following:
>
> 1)   terminal;
>
> 2)   mcu;
>
> 3)   gateway.

Permissible values (if controlled)

Notes

> This attribute can be used to search the directory for the presence of MCUs, gateways or terminals, by searching for the presence of attributes of this type.

Semantics

Example applications for which this attribute would be useful

Example (LDIF fragment)
```
h323IdentityEndpointType:gateway
```

6.11   h323IdentityServiceLevel

```
OID: 0.0.8.350.1.1.3.1.10
attributetypes: (0.0.8.350.1.1.3.1.10
NAME 'h323IdentityServiceLevel'
DESC 'To define services that a user can belong to.'
EQUALITY caseIgnoreMatch
SUBSTR caseIgnoreSubstringsMatch
SYNTAX 1.3.6.1.4.1.1466.115.121.1.15 )
```

Application utility class

　　　　Standard

Number of values

　　　　multi

Definition

　　　　This describes the type of services a user can belong to.

Permissible values (if controlled)

Notes

Semantics

Example applications for which this attribute would be useful

Example (LDIF fragment)

```
    h323IdentityServiceLevel:deluxe
```

7　　　h323Identity LDIF Files

This clause contains a schema configuration file for h323Identity that can be used to configure an LDAP server to support this class.

```
# h323Identity Object Schema
#
# Schema for representing h323Identity Object in an LDAP Directory
#
# Abstract
#
# This Recommendation defines the schema for representing h323Identity
# object in an LDAP directory [LDAPv3].  It defines schema elements
# to represent an h323Identity object [h323Identity].
#
#                     .1 = Communication related work
#                     .1.3 = h323Identity
#                     .1.3.1 = attributes
#                     .1.3.2 = objectclass
#                     .1.3.3 = syntax
#
#
#
# Attribute Type Definitions
#
#    The following attribute types are defined in this Recommendation:
#
#        h323IdentityGKDomain
#        h323Identityh323-ID
#        h323IdentitydialedDigits
#        h323Identityemail-ID
#        h323IdentityURL-ID
#        h323IdentitytransportID
#        h323IdentitypartyNumber
#        h323IdentitymobileUIM
#        h323IdentityEndpointType
#        h323IdentityServiceLevel
dn: cn=schema
changetype: modify
#
# if you need to change the definition of an attribute,
#           then first delete and re-add in one step
```

```
#
# if this is the first time you are adding the h323Identity
# objectclass using this LDIF file, then you should comment
# out the delete attributetypes modification since this will
# fail. Alternatively, if your ldapmodify has a switch to continue
# on errors, then just use that switch -- if you are careful
#
delete: attributetypes
attributetypes: (0.0.8.350.1.1.3.1.1 NAME 'h323IdentityGKDomain' )
attributetypes: (0.0.8.350.1.1.3.1.2 NAME 'h323Identityh323-ID' )
attributetypes: (0.0.8.350.1.1.3.1.3 NAME 'h323IdentitydialedDigits' )
attributetypes: (0.0.8.350.1.1.3.1.4 NAME 'h323Identityemail-ID' )
attributetypes: (0.0.8.350.1.1.3.1.5 NAME 'h323IdentityURL-ID' )
attributetypes: (0.0.8.350.1.1.3.1.6 NAME 'h323IdentitytransportID' )
attributetypes: (0.0.8.350.1.1.3.1.7 NAME 'h323IdentitypartyNumber' )
attributetypes: (0.0.8.350.1.1.3.1.8 NAME 'h323IdentitymobileUIM' )
attributetypes: (0.0.8.350.1.1.3.1.9 NAME 'h323IdentityEndpointType' )
attributetypes: (0.0.8.350.1.1.3.1.10 NAME 'h323IdentityServiceLevel' )
-
#
# re-add the attributes -- in case there is a change of definition
#
#
add: attributetypes
attributetypes: (0.0.8.350.1.1.3.1.1
     NAME 'h323IdentityGKDomain'
     DESC 'FQDN of the Gatekeeper'
     EQUALITY caseIgnoreIA5Match
     SYNTAX 1.3.6.1.4.1.1466.115.121.1.26 )
attributetypes: (0.0.8.350.1.1.3.1.2
     NAME 'h323Identityh323-ID'
     DESC 'specifies the endpoint address alias as specified in H.323'
     EQUALITY caseIgnoreIA5Match
     SUBSTR caseIgnoreIA5SubstringsMatch
     SYNTAX 1.3.6.1.4.1.1466.115.121.1.26 )
attributetypes: (0.0.8.350.1.1.3.1.3
     NAME 'h323IdentitydialedDigits'
     DESC 'Specifies the endpoint dialled digits as specified in H.323'
     EQUALITY caseIgnoreIA5Match
     SUBSTR caseIgnoreIA5SubstringsMatch
     SYNTAX 1.3.6.1.4.1.1466.115.121.1.26 )
attributetypes: (0.0.8.350.1.1.3.1.4
     NAME 'h323Identityemail-ID'
     DESC 'Specifies an H.323 entity that can be reached using H.323'
     EQUALITY caseIgnoreIA5Match
     SUBSTR caseIgnoreIA5SubstringsMatch
     SYNTAX 1.3.6.1.4.1.1466.115.121.1.26 )
attributetypes: (0.0.8.350.1.1.3.1.5
     NAME 'h323IdentityURL-ID'
     DESC 'H.323 specs'
     EQUALITY caseExactMatch
     SUBSTR caseExactSubstringsMatch
     SYNTAX 1.3.6.1.4.1.1466.115.121.1.15 )
attributetypes: (0.0.8.350.1.1.3.1.6
     NAME 'h323IdentitytransportID'
     DESC 'specifies endpoint transport Id as defined in H.323'
     EQUALITY caseIgnoreIA5Match
     SUBSTR caseIgnoreIA5SubstringsMatch
     SYNTAX 1.3.6.1.4.1.1466.115.121.1.26 )
attributetypes: (0.0.8.350.1.1.3.1.7
     NAME 'h323IdentitypartyNumber'
     DESC 'endpoint party Number as defined in H.323'
     EQUALITY caseIgnoreIA5Match
     SUBSTR caseIgnoreIA5SubstringsMatch
```

```
        SYNTAX 1.3.6.1.4.1.1466.115.121.1.26 )
attributetypes: (0.0.8.350.1.1.3.1.8
      NAME 'h323IdentitymobileUIM'
      DESC 'endpoint mobile UIM as defined in H.323 document'
      EQUALITY caseIgnoreIA5Match
      SUBSTR caseIgnoreIA5SubstringsMatch
      SYNTAX 1.3.6.1.4.1.1466.115.121.1.26 )
attributetypes: (0.0.8.350.1.1.3.1.9
  NAME 'h323IdentityEndpointType'
  DESC 'The endpoint H.323 type as defined in ITU-T H.323v4.'
  EQUALITY caseIgnoreMatch
  SUBSTR caseIgnoreSubstringsMatch
  SYNTAX 1.3.6.1.4.1.1466.115.121.1.15 )
attributetypes: (0.0.8.350.1.1.3.1.10
  NAME 'h323IdentityServiceLevel'
  DESC 'To define services a user can belong to.'
  EQUALITY caseIgnoreMatch
  SUBSTR caseIgnoreSubstringsMatch
  SYNTAX 1.3.6.1.4.1.1466.115.121.1.15 )
-
# Object Class Definitions
#
#    The following object class is defined in this Recommendation:
#
#        h323Identity
#
# h323Identity
#
#
delete: objectclasses
objectclasses: (0.0.8.350.1.1.3.2.1 NAME 'h323Identity' )
-
add: objectclasses
objectclasses: (0.0.8.350.1.1.3.2.1
      NAME 'h323Identity'
      DESC 'h323Identity object'
      SUP top AUXILIARY
      MAY ( h323IdentityGKDomain $ h323Identityh323-ID $
          h323IdentitydialedDigits $ h323Identityemail-ID $
          h323IdentityURL-ID $ h323IdentitytransportID $
          h323IdentitypartyNumber $ h323IdentitymobileUIM $
          h323IdentityEndpointType $ h323IdentityServiceLevel )
      )
-
#
# end of LDIF
#
```

Annex A

Indexing profile

Indexing of attributes is an implementation-specific activity and depends upon the desired application. Non-indexed attributes can result in search times sufficiently long to render some applications unusable. Notably, user and alias lookup should be fast. The Annex A Indexing Profile describes an indexing configuration for h323Identity directories that will be optimized for use in directory of directories applications. Use of this profile is optional.

h323IdentityGKDomain: no recommendation

h323Identityh323-ID: equality

h323IdentitydialedDigits: equality

h323Identityemail-ID: equality

h323IdentityURL-ID: equality

h323IdentitytransportID: equality

h323IdentitypartyNumber: equality

h323IdentitymobileUIM: equality

h323IdentityEndpointType: equality

h323IdentityServiceLevel: equality

Appendix I

Electronic attachment[1]

The attached file `h323Identity.ldif.txt` contains a text only version of the LDIF file described in clause 7.

h323Identity.ldif.t
xt

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[1] In order to help paper copy users, the content of this appendix is available for free download from the ITU publication website at:

http://www.itu.int/rec/recommendation.asp?type=folders&lang=e&parent=T-REC-H.350.1

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Series O	Specifications of measuring equipment
Series P	Telephone transmission quality, telephone installations, local line networks
Series Q	Switching and signalling
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
Series X	Data networks and open system communications
Series Y	Global information infrastructure and Internet protocol aspects
Series Z	Languages and general software aspects for telecommunication systems