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SHS Version 1.2.01 Directory

Verva - Swedish Administrative Development Agency

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1 Introduction

The SHS Directory is a common repository where the SHS Message Service find information about organisations, services (product types), public agreements and addresses. SHS enabled applications and actors may also use the directory information. It is assumed that the directory is implemented using LDAP (Lightweight Directory Access Protocol) and that specific tree structure and object classes (types of information) is handled by the directory as well as clients.

1.1 Audience

This document is primarily intended as an introduction guide for technical SHS administrators, directory service providers and product developers who will work on directory related matters.

1.2 References

1. [DTD] - SHS Version 1.2.01 DTD Description, 2004-06-03
2. [RFC2256] - A Summary of the X.500(96) User Schema for use with LDAPv3, December 1997

1.3 Document History

Version	Date	Change	By	Approved
1.0.1	2003-01-28	First draft The document is based on the Swedish SHS Directory 1.0 Documentation and changes included in SHS 1.1 Separated description of attributes and object classes. Added text about specific requirements on clients and directory services.	Anders Lindgren	
1.0.2	2003-01-31	Updates based on reviewers input	Anders Lindgren	
1.0.3	2003-02-04	Updates based in input from "ändringsråd"	Anders Lindgren	
1.1	2003-02-10	Approved for version 1.1	Anders Lindgren	Christer Marklund
1.1.1	2003-03-10	First draft of 1.2 documentation <ul style="list-style-type: none"> • New directory structure • New object class shsAgreement and new attributes 	Anders Lindgren	
1.1.2	2003-05-27	Updated draft after ÅR 2003-04-10	Anders Lindgren	
1.1.3	2003-09-16	Updated draft after ÅR 2003-09-02	Anders Lindgren	
1.2	2003-10-09	Final version 1.2	Anders Lindgren	Jan Lundh
1.2	2003-12-01	First draft of working document including more detailed definition (new chapter)	Anders Lindgren	

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1.2.01-A	2004-05-14	First draft (A) for updated 1.2 documentation based on ÅR 2004-03-25. <ul style="list-style-type: none"> • Corrections to class shsAgreement 	Anders Lindgren	
1.2.01	2004-06-03	Final version 1.2.01	Anders Lindgren	Christer Marklund
1.2.01	2007-04-05	Published as Verva document		Christer Marklund Jan Lundh

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2 Client Requirements

SHS messaging services and SHS enabled applications together with the SHS service administrators are the primary users (clients) of the directory service. In order to use the SHS Directory a client must support:

1. LDAP version 3, which is used by the servers
2. The structures, attributes and object classes that are unique for SHS. These are described in chapters 3 to 5.
3. Multiple Directory providers. See 2.1 for details.

2.1 Multiple Directory Providers

The SHS enabled systems must be able to recognize more than one directory service provider. This will allow organisations connected to SHS to publish directory information in one directory only.

Therefore the client application must be able to configure a list of directory providers. Alternatively a special application proxy for LDAP may provide this functionality. This functionality is commercially available as “LDAP Proxy” or “virtual LDAP server”.

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3 Directory Structure

The directory structure for SHS version 1.2 is designed to provide:

- Distributed management, i.e. each organisation may maintain its directory information.
- Backward compatibility with the structure used in earlier SHS versions.

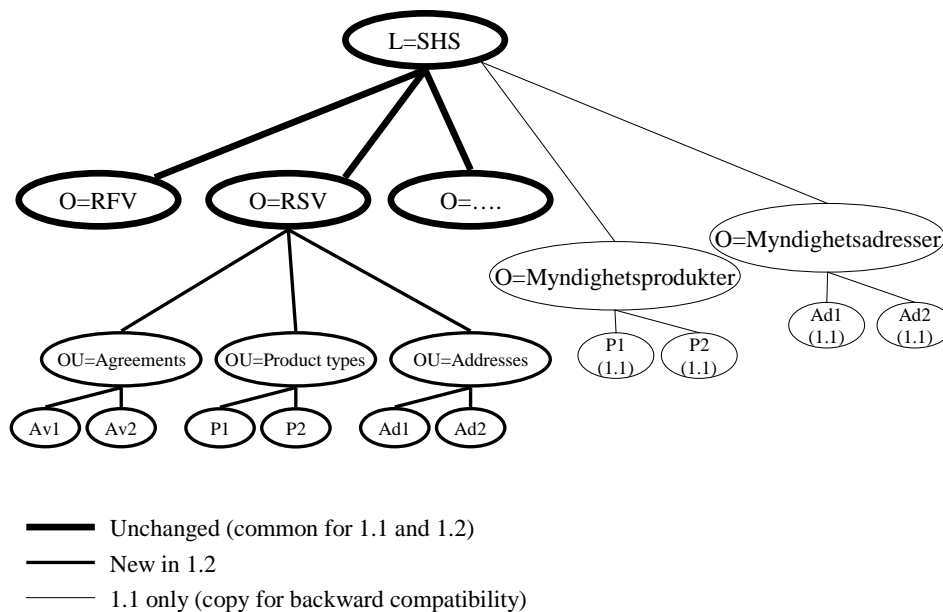


Figure 1 SHS Directory Structure

The primary copy of the information is maintained under each organisation (O=RSV above). For backward compatibility these SHS address and product type entries also must be maintained in the SHS 1.1 compatible structure (O=Myndighetsprodukter and O=Myndighetsadresser). Actors are responsible for maintaining information in both 1.2 and 1.1 structure and have therefore administrative rights to for both 1.2 and 1.1 structures. Only secured LDAP (LDAP over SSL/TLS) is allowed for administration.

The directory root is L=SHS for all entries. SHS implementations SHALL support configurable directory search base (server address and starting point e.g. "ldap://ds.katalog.posten.se:390/L=SHS")

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3.1 Structure rules for specific SHS entries

The SHS specific object classes `shsAddress`, `shsAgreement` and `shsProduct` are all structural classes and require a specific RDN¹ structure as follows:

- Entries of class `shsAddress` require an RDN that is a combination of `serialNumber` of the referred product type and `organizationNumber` for the organisation. The entries may be subordinates to `organizationUnit` and for 1.1 backward compatibility also `organization`. Example:
`dn: organizationNumber=2021000985+serialNumber=9248bae0-c037-f861-4053-aad727213949,ou=Addresses,o=RSV,L=SHS`
`1.1 dn2: organizationNumber=2021000985+serialNumber=9248bae0-c037-f861-4053-aad727213949,o=Myndighetsadresser,L=SHS`
- Entries of class `shsAgreement` require an RDN that is the `serialNumber` for the agreement. The entries may be subordinates to `organizationUnit`. Example:
`dn: serialNumber=1A0A344-B071-11D2-9569-02608C2C832B,ou=agreements,o=RSV,L=SHS`
- Entries of class `shsProduct` require an RDN that is the product type name and may be subordinates to `organizationUnit` and for 1.1 backward compatibility also `organization`. Example:
`dn: productName=rsv.taxering.inkomstdeklaration,ou=Product types,o=RSV,L=SHS`
`1.1 dn: productName=rsv.taxering.inkomstdeklaration,o=Myndighetsprodukter,L=SHS`

In the examples above the `serialNumbers` are text representations of Universally Unique Identifiers (UUID). A UUID is basically a 16 octet representation of time (timestamp from system clock) and space (the IEEE 802 address of the computer node where the identifier is generated). The text representation present each octet as an hexadecimal number (00-FF). The text representation is not case sensitive ie. "01a2" = "01A2"

¹ RDN, Relative Distinguished Name, the name of the last part of a directory branch to a specific entry e.g. if the full distinguished name is "ou=a, o=b, c=se" all the following are examples of RDN: "ou=a", "o=b" and "c=se"

² 1.1 dn – for backward compatibility with SHS 1.1 only.

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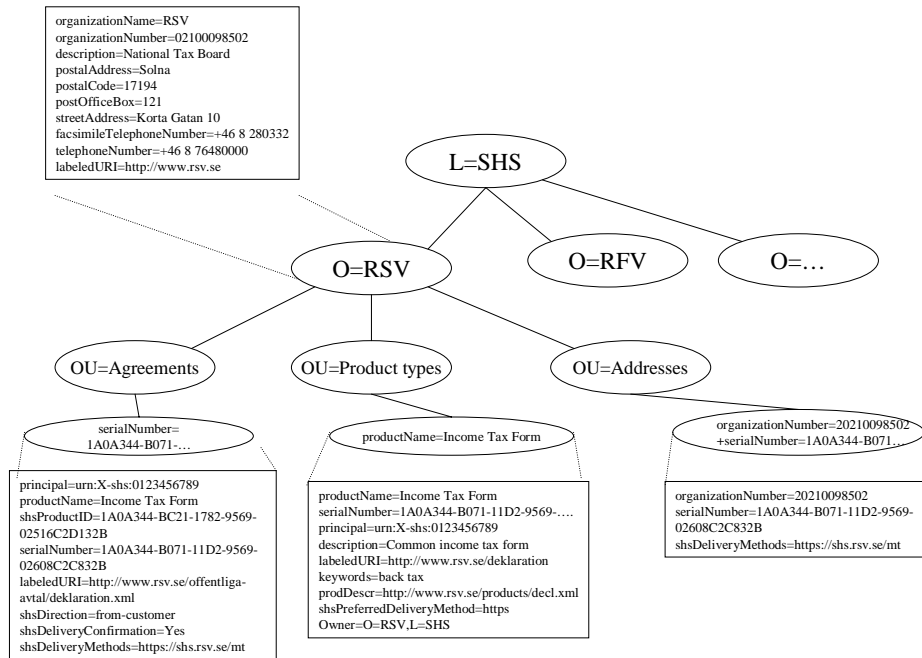


Figure 2 SHS Example of information stored in the directory

4 Attributes

The attributes used in SHS objects are if possible based on RFC2256. However this recommendation does not cover all SHS needs. Therefore some specific SHS attributes are established.

Attribute	Defined in
organizationNumber	SHS Specific
principal	SHS Specific
prodDescr	SHS Specific
productName	SHS Specific
shsDeliveryConfirmation	SHS Specific
shsDeliveryMethods	SHS Specific
shsError	SHS Specific
shsPreferredDeliveryMethod	SHS Specific
shsProductID	SHS Specific
shsTransferType	SHS Specific
keywords	Internet White Pages Pilot
labeledURI	RFC2079
serialNumber	RFC2256
description	X.520/RFC2256
facsimileTelephone Number	X.520/RFC2256
organizationName	X.520/RFC2256
Owner	X.520/RFC2256
postalAddress	X.520/RFC2256

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Attribute	Defined in
postalCode	X.520/RFC2256
postOfficeBox	X.520/RFC2256
streetAddress	X.520/RFC2256
telephoneNumber	X.520/RFC2256
userPassword	X.509/RFC2256

4.1 Attributes Defined by SHS

The following attributes are created specifically for the SHS project. The object identifiers (OID) for SHS (1.2.752.46.1.xxxx) are owned by Swedish Agency for Public Management (Statskontoret).

4.1.1 organizationNumber

The organisational number uniquely and lastly identifies an organisation³.

Name	organizationNumber
Short Name/Alias	-
Description	Actors unique and lasting organisational number
OID:	1.2.752.46.1.4.6
Syntax	case ignore string
Size Restriction	64
Single Valued	Yes
Example	2021000985

4.1.2 principal

The owner of product types and public agreements. An example is the National Tax Board who owns the “Income tax declaration”/”rsv.taxering.inkomstdeklaration” product type (service). Organisational number or equivalent is used to identify the organisation.

Name	principal
Short Name/Alias	-
Description	Owner of service (organisational number)
OID:	1.2.752.46.1.4.2
Syntax	case ignore string / URN based as defined in [DTD]
Size Restriction	64
Single Valued	Yes
Example	urn:X-shs:0123456789

4.1.3 prodDescr

An URL that links to a description of the product type (XML-document). Content description and syntax is described in [DTD].

³ Organisational number, VAT number, DUNS number or equivalent.

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Name	prodDescr
Short Name/Alias	-
Description	URL to product type description in XML format
OID:	1.2.752.46.1.4.4
Syntax	case ignore string
Size Restriction	128
Single Valued	Yes
Example	http://shs.rsv.se/ptypdef/inkomstdeklaration.xml

4.1.4 productName

A describing name of the product type e.g. "Income tax declaration"

Name	productName
Short Name/Alias	Produktnamn (Swedish alias)
Description	Name of the product type
OID:	1.2.752.46.1.4.1
Syntax	case ignore string
Size Restriction	64
Single Valued	No
Example	rsv.taxering.inkomstdeklaration

4.1.5 shsDeliveryMethods

Web address to a service point for a specific actor.

Name	
Short Name/Alias	Produktidentitet
Description	URL to service implementation
OID:	1.2.752.46.1.4.7
Syntax	case ignore string (syntax based on RFC 2079 labeledURI)
Size Restriction	128
Single Valued	Yes
Example	https://shs.rsv.se/mt

4.1.6 shsPreferredDeliveryMethod

Preferred mechanism (protocol) to be used as message transport.

Name	shsPreferredDeliveryMethod
Short Name/Alias	-
Description	Transport mechanism that may be used
OID:	1.2.752.46.1.4.5
Syntax	case ignore string
Size Restriction	64
Single Valued	No
Example	https

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4.1.7 shsProductID

Attribute used in agreements to identify the product type referred to by an agreement by the products UUID⁴

Name	shsProductID
Short Name/Alias	-
Description	Used in agreement to identify product type by UUID
OID:	1.2.752.46.1.4.11
Syntax	case ignore string
Size Restriction	64
Single Valued	No
Example	1A0A344-BC21-1782-9569-02516C2D132B

4.1.8 shsDeliveryConfirmation

A flag that indicates if exchange based on this agreement requires confirmation.

Name	shsDeliveryConfirmation
Short Name/Alias	
Description	Indicator if confirmation is required or not. Default value is "no".
OID:	1.2.752.46.1.4.12
Syntax	case ignore string
Size Restriction	8
Single Valued	Yes
Example	Yes

4.1.9 shsError

May be used for informational text about how errors related to this agreement may be handled. The information in this element is mainly intended for human interpretation and is written for SHS administrators

Name	shsError
Short Name/Alias	
Description	Error handling information for administrators
OID:	1.2.752.46.1.4.13
Syntax	case ignore string
Size Restriction	256
Single Valued	Yes
Example	Contact XX if error occurs

⁴ UUID, Universal Unique IDentifier. These are machine generated unique 128 bit numbers, based on space and time (the generating system's network identity and system clock)

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4.1.10 shsTransferType

Used in shsAgreement to specify if synch, asynch or any transfer type is allowed for a specific agreement.

Name	shsTransferType
Short Name/Alias	
Description	Specification which transfer type (aynsynchronous/synchronous) that is allowed
OID:	1.2.752.46.1.4.14
Syntax	case ignore string
Size Restriction	64
Single Valued	Yes
Example	asynch

4.2 Attributes defined in other projects

These attributes have been defined in other public LDAP project and are likely to be found in the standard attribute repertoire of various LDAP servers.

4.2.1 keyWords

This attribute was defined in the Internet White Pages Pilot and shall contain one or more keywords that characterize the product type.

Name	keywords
Short Name/Alias	-
Description	One or more keyword
OID:	0.9.2342.19200300.102.1.7
Syntax	case ignore string
Size Restriction	No
Single Valued	No
Example	Tax VAT

4.3 Public well-known attributes

These attributes is expected to be supported by any LDAP directory server. The following table is a list of the attributes used by SHS and where they are defined. The Object ID is presented here as an unambiguous reference.

Attribute	Specific SHS usage	Object ID	Origin/Link to definition
labeledURI	Web address for an SHS actor, product type or agreement	1.3.6.1.4.1.250.3.1	RFC2079

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serialNumber	UUID to uniquely identify public agreements and product types. SHS special product types ⁵ are identified by name.	2.5.4.5	X.520 / RFC2256
userPassword	password for write access to directory service	2.5.4.35	X.509 / RFC2256
description	Describing an SHS actor or product type	2.5.4.13	X.520 / RFC2256
facsimileTelephone Number	Fax number	2.5.4.23	X.520 / RFC2256
organizationName	Actors name	2.5.4.10	X.520 / RFC2256
Owner	Product owner (actor)	2.5.4.32	X.520 / RFC2256
postalAddress	Actors postal address	2.5.4.16	X.520 / RFC2256
postalCode	Actors postal code	2.5.4.17	X.520 / RFC2256

⁵ The SHS special product types are: confirm, error and agreement

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5 Object classes

SHS objects adhere to the standard object class organization and the SHS defined object classes shsProduct, shsOrgExtension and shsAddresses.

5.1 Object class organization

The X.521 standard⁶ defined object class organization is used to describe actors connected to SHS. The following attributes from the organization class are expected in a description of an SHS actor.

Object Identifier: 2.5.6.4

Attribute	Comment	Sample
organizationName	Actors identity	RSV
description	A description of the SHS actor	National Tax Board
postalAddress	Actors postal address	Solna
postalCode	Actors postal number/ZIP code	17194
postOfficeBox	Actors postal box	Box 121
streetAddress	Street address	Korta gatan 10
facsimileTelephoneNumber	Fax	+4682803322
telephoneNumber	Phone	+4687648000
userPassword	Optional password for administration rights ⁷ .	*****

5.2 SHS class shsOrgExtension

In order to uniquely identify an organisation the information in the class organization should be complemented with an organisational number. This is done by adding an auxiliary class (subclass) to organisation named shsOrgExtension. An entry describing an SHS organisation should therefore have the following class hierarchy: top, organization, shsOrgExtension

Object Identifier: 1.2.752.46.1.6.2

Attribute	Comment	Sample
organizationNumber	Organisational number for actor (VAT or equivalent unique and lasting identity)	2021000985
labeledURI	URL to organisations web site	www.riksskatteverket.se

⁶ ITU standard X.521 (www.itu.org) and ISO/IEC 9594-7 (www.iso.org) – se also RFC2256 for summary

⁷ Directory operators may use methods to provide user id/password for administration

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5.3 SHS class shsProduct

Products are the actual business documents that are distributed between SHS actors. The characteristics of these products are described by the product type. This is defined in the directory using the SHS specific object class shsProduct.

Object Identifier: 1.2.752.46.1.6.1

Structural class, RDN: productName

Attribute	Comment	Sample
productName	Product name	rsv.taxering.inkomstdeklaration
serialNumber	A UUID for the product type	1A0A344-B071-11D2-9569-02608C2C832B
principal	Receiver of a service	urn:X-shs:1234567890
description	Text that describe the product type	Common income tax form
labeledURI	Web address to a general description of this product type	http://www.rsv.se/deklaration
keywords	Searchable keywords for the product type	back tax
prodDescr	URL to product XML product type description	http://www.rsv.se/products/decl.xml
shsPreferredDeliveryMethod	Transport protocol	https
Owner	Link to organisation entry for actor owning this product type	O=RSV,L=SHS

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5.4 SHS class shsAddresses

This object provides a reference (or relation) between actors and product types. This object type enables the SHS servers to

- Use multiple addresses for an actor for load sharing between product types
- Enable a scenario where a specific product type may be received by several authorities (“authority load sharing”).

Object Identifier: 1.2.752.46.1.6.3

Structural class, RDN: organizationNumber+ serialNumber

Attribute	Comment	Sample
organizationNumber	Organisational number for actor (VAT or equivalent unique and lasting identity)	2021000985
serialNumber	A UUID for the product type	1A0A344-B071-11D2-9569-02608C2C832B
shsDeliveryMethods	Address to SHS service for this product type	https://shs.rsv.se/mt

5.5 SHS class shsAgreement

Public agreements may be used when a principal will announce public availability of a service (product type). One example product type is income tax declaration that many actors send to one receiver

Object identifier: 1.2.752.46.1.6.4

Structural class, RDN: serialNumber

Attribute	Comment	Sample
principal	Owner of the public agreement	urn:X-shs:0123456789
productName	The product type referred by this agreement – optional	rsv.taxering.inkomstdeklaration
shsProductID	The UUID of the product type referred by this agreement	1A0A344-BC21-1782-9569-02516C2D132B The product type must be defined before an agreement may be created.
serialNumber	A UUID for the agreement	1A0A344-B071-11D2-9569-02608C2C832B
labeledURI	A pointer an agreement description	http://www.rsv.se/offentliga-avtal/deklaration
shsDeliveryConfirmation	Delivery confirmation (yes/no)	Yes
shsError	Optional instruction how errors should be handled	If error please contact XXX.
shsTransferType	Specification which transfer type (asynchronous/synchronous) that is allowed	asynch synch any
description	Description of agreement	

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6 Detailed directory specification

This section is intended for directory operators and others that are familiar to technical descriptions of directory services.

6.1 Object identifiers

The object identifiers (OID) for SHS are owned by Swedish Agency for Public Management (Statskontoret)

statskontoret **OBJECT IDENTIFIER ::= { iso(1) member-body(2) sweden(752) 46 }**

The directory information model objects defined in this document are located in the following branches of Statskontoret's object identifier tree:

statskontoretSHS OBJECT IDENTIFIER ::= { statskontoret 1 }

statskontoretSHSAttributeType OBJECT IDENTIFIER ::= { statskontoretSHS 4 }

statskontoretSHSObjectClass OBJECT IDENTIFIER ::= { statskontoretSHS 6 }

statskontoretSHSNameForm OBJECT IDENTIFIER ::= { statskontoretSHS 15 }

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6.1.1 Auxiliary Object classes

Auxiliary Object classes	Object ID	Source
shsOrgExtension	{ statskontoretSHSObjectClass 2 }	This document

```
shsOrgExtension OBJECT-CLASS ::= {
    SUBCLASS OF {top}
    KIND auxiliary
    MUST CONTAIN {organizationNumber}
    MAY CONTAIN {labeledURI}
    ID id-oc-shsOrgExtension }
```

```
id-oc-shsOrgExtension OBJECT IDENTIFIER ::= { statskontoretSHSObjectClass 2 }
```

6.1.2 Structural Object Classes

Structural Object classes	Object ID	Source
shsProduct	{ statskontoretSHSObjectClass 1 }	This document
shsAddresses	{ statskontoretSHSObjectClass 3 }	This document
ShsAgreement	{ statskontoretSHSObjectClass 4 }	This document

```
shsProduct OBJECT-CLASS ::= {
    SUBCLASS OF { top }
    KIND structural
    MUST CONTAIN { productName | serialNumber | principal |
        shsPreferredDeliveryMethod }
    MAY CONTAIN { description | labeledURI | keywords | prodDescr | owner }
    ID id-oc-shsProduct }
```

```
id-oc-shsProduct OBJECT IDENTIFIER ::= { statskontoretSHSObjectClass 1 }
```

```
shsAddresses OBJECT-CLASS ::= {
    SUBCLASS OF {top}
    KIND structural
    MUST CONTAIN{ organizationNumber | serialNumber |
        shsDeliveryMethods }
    ID id-oc-shsAddresses }
```

```
id-oc-shsAddresses OBJECT IDENTIFIER ::= { statskontoretSHSObjectClass 3 }
```

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shsAgreement OBJECT-CLASS ::= {
 SUBCLASS OF {top}
 KIND structural
 MUST CONTAIN {productName | principal | serialNumber | shsProductID |
 shsTransferType }
 MAY CONTAIN {labeledURI | shsDeliveryconfirmation | shsError |
 shsDeliverymethods | Description }

id-oc-shsAgreement OBJECT IDENTIFIER ::= { statskontoretSHSObjectClass 4}

6.1.3 Standardized Attribute Types

Attribute type	Source
Keywords	Internet White Pages Pilot
labeledURI	RFC2079
serialNumber	RFC2256
Description	ITU-T X.520/97
facsimileTelephoneNumber	ITU-T X.520/97
organizationName	ITU-T X.520/97
Owner	ITU-T X.520/97
postalAddress	ITU-T X.520/97
postalCode	ITU-T X.520/97
postOfficeBox	ITU-T X.520/97
streetAddress	ITU-T X.520/97
telephoneNumber	ITU-T X.520/97
userPassword	ITU-T X.520/97
description	ITU-T X.520/97

6.1.4 Locally Defined Attribute Types

Attribute type	Object ID	Source
productName	{ statskontoretSHSAttributeType 1 }	This document
principal	{ statskontoretSHSAttributeType 2 }	This document
prodDescr	{ statskontoretSHSAttributeType 4 }	This document

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Attribute type	Object ID	Source
shsPreferredDeliveryMethod	{statskontoretSHSAttributeType 5 }	This document
organizationNumber	{statskontoretSHSAttributeType 6 }	This document
shsDeliveryMethods	{statskontoretSHSAttributeType 7 }	This document
shsDirection	{statskontoretSHSAttributeType 10 }	This document
shsProductID	{statskontoretSHSAttributeType 11 }	This document
shsDeliveryConfirmation	{statskontoretSHSAttributeType 12 }	This document
shsError	{statskontoretSHSAttributeType 13 }	This document
shsTransferType	{statskontoretSHSAttributeType 14 }	This document

productName ATTRIBUTE ::= {
WITH SYNTAX DirectoryString (SIZE (64))
EQUALITY MATCHING RULE caseIgnoreMatch
SUBSTRING MATCHING RULE caseIgnoreSubstringsMatch
ID id-at-statskontoretSHSproductName }
id-at-statskontoretSHSproductName OBJECT IDENTIFIER ::= {
statskontoretSHSAttributeType 1 }

principal ATTRIBUTE ::= {
WITH SYNTAX DirectoryString (SIZE (64))
EQUALITY MATCHING RULE caseIgnoreMatch
SUBSTRING MATCHING RULE caseIgnoreSubstringsMatch
SINGLE VALUE TRUE
ID id-at-statskontoretSHSprincipal }
id-at-statskontoretSHSprincipal OBJECT IDENTIFIER ::= { statskontoretSHSAttributeType 2 }

prodDescr ATTRIBUTE ::= {
WITH SYNTAX DirectoryString (SIZE (128))
EQUALITY MATCHING RULE caseIgnoreMatch
SUBSTRING MATCHING RULE caseIgnoreSubstringsMatch
SINGLE VALUE TRUE
ID id-at-statskontoretSHSprodDescr }
id-at-statskontoretSHSprodDescr OBJECT IDENTIFIER ::= {
statskontoretSHSAttributeType 4 }

shsPreferredDeliveryMethod ATTRIBUTE ::= {
WITH SYNTAX DirectoryString (SIZE (64))
EQUALITY MATCHING RULE caseIgnoreMatch
ID id-at-statskontoretSHSshsPreferredDeliveryMethod }
id-at-statskontoretSHSshsPreferredDeliveryMethod OBJECT IDENTIFIER ::= {
statskontoretSHSAttributeType 5 }

organizationNumber ATTRIBUTE ::= {

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```

WITH SYNTAX DirectoryString (SIZE (64))
EQUALITY MATCHING RULE caseIgnoreMatch
SUBSTRING MATCHING RULE caseIgnoreSubstringsMatch
SINGLE VALUE TRUE
ID id-at-statskontoretSHSorganizationNumber}
id-at-statskontoretSHSorganizationNumber OBJECT IDENTIFIER::={
  statskontoretSHSAttributeType 6}

```

```

shsDeliveryMethods ATTRIBUTE ::= {
  WITH SYNTAX DirectoryString (SIZE (128))
  EQUALITY MATCHING RULE caseIgnoreMatch
  SUBSTRING MATCHING RULE caseIgnoreSubstringsMatch
  SINGLE VALUE TRUE
  ID id-at-statskontoretSHS shsDeliveryMethods}
id-at-statskontoretSHSshsDeliveryMethods OBJECT IDENTIFIER::={
  statskontoretSHSAttributeType 7}

```

```

shsProductID ATTRIBUTE ::= {
  WITH SYNTAX DirectoryString (SIZE (64))
  EQUALITY MATCHING RULE caseIgnoreMatch
  SUBSTRING MATCHING RULE caseIgnoreSubstringsMatch
  ID id-at-statskontoretSHSshsProductID}
id-at-statskontoretSHSshsProductID OBJECT IDENTIFIER::={
  statskontoretSHSAttributeType 11}

```

```

shsDeliveryConfirmation ATTRIBUTE ::= {
  WITH SYNTAX DirectoryString (SIZE (8))
  EQUALITY MATCHING RULE caseIgnoreMatch
  SUBSTRING MATCHING RULE caseIgnoreSubstringsMatch
  SINGLE VALUE TRUE
  ID id-at-statskontoretSHSshsDeliveryConfirmation}
id-at-statskontoretSHSshsDeliveryConfirmation OBJECT IDENTIFIER::={
  statskontoretSHSshsDeliveryConfirmation 12}

```

```

shsError ATTRIBUTE ::= {
  WITH SYNTAX DirectoryString (SIZE (256))
  EQUALITY MATCHING RULE caseIgnoreMatch
  SUBSTRING MATCHING RULE caseIgnoreSubstringsMatch
  SINGLE VALUE TRUE
  ID id-at-statskontoretSHSshsError }
  id-at-statskontoretSHSAttributeType OBJECT IDENTIFIER::={
  statskontoretSHSAttributeType 13}

```

```

shsTransferType ATTRIBUTE ::= {
  WITH SYNTAX DirectoryString (SIZE (64))
  EQUALITY MATCHING RULE caseIgnoreMatch
  SUBSTRING MATCHING RULE caseIgnoreSubstringsMatch
  SINGLE VALUE TRUE
  ID id-at-statskontoretSHSSTransferType }
id-at-statskontoretSHSAttributeType OBJECT IDENTIFIER::={
  statskontoretSHSAttributeType 14}

```

2007-04-05

6.1.5 Name forms

This section defines the name forms for the structural object classes defined in this document.

Name form	Object ID	Source
shsProductNameForm	{statskontoretSHSNameForm 1}	This document
shsAddressNameForm	{statskontoretSHSNameForm 3}	This document
shsAgreementNameForm	{statskontoretSHSNameForm 4}	This document

shsProductNameForm NAME-FORM ::= {
 NAMES shsProduct
 WITH ATTRIBUTES {productName}
 ID id-nf-shsProductNameForm }

id-nf-shsProductNameForm OBJECT IDENTIFIER ::= { statskontoretSHSNameForm 1 }

shsAddressesNameForm NAME-FORM ::= {
 NAMES shsAddresses
 WITH ATTRIBUTES {organizationalnumber+serialNumber}
 ID id-nf-shsAddressesNameForm }

id-nf-shsaddressesNameForm OBJECT IDENTIFIER ::= { statskontoretSHSNameForm 3 }

shsAgreementNameForm NAME-FORM ::= {
 NAMES shsAgreement
 WITH ATTRIBUTES {serialNumber}
 ID id-nf-shsAgreementNameForm }

id-nf-shsAgreementNameForm OBJECT IDENTIFIER ::= { statskontoretSHSNameForm 4 }

2007-04-05

6.2 Matching rules

The basic X.500-88 filter structure is used by SHS applications, and therefore only the built-in matching rules are required. No external matching rules are required.

2007-04-05

6.3 Structure rules

6.3.1 Organisation

Attribute **organisationName** is used for naming. The superior object is determined by standard rules.

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

6.3.2 OrganisationalUnit

Attribute **organisationalUnitName** is used for naming. The superior object is determined by standard rules.

```
Sr2 STRUCTURE-RULE ::= {
  NAME FORM orgUnitNameForm
  ID 2 }
```

6.3.3 shsProduct

Attribute **productName** is used for naming. The **organisationalUnit** or **organisation** is the immediate superior to entries of object class **shsProduct**.

```
Sr3 STRUCTURE-RULE ::= {
  NAME FORM shsProductNameForm
  SUPERIOR RULES {sr1 | sr2}
  ID 3 }
```

6.3.4 shsAddresses

Attribute **organizationalnumber+serialNumber** is used for naming. The **organisationalUnit** or **organisation** is the immediate superior to entries of object class **shsAddresses**.

```
Sr4 STRUCTURE-RULE ::= {
  NAME FORM shsAddressesNameForm
  SUPERIOR RULES {sr1 | sr2}
  ID 4 }
```

6.3.5 shsAgreement

Attribute **serialnumber** is used for naming. The **organisationalUnit** is the immediate superior to entries of object class **shsAgreement**.

```
Sr5 STRUCTURE-RULE ::= {
  NAME FORM shsAgreementNameForm
  SUPERIOR RULES {sr2}
  ID 5 }
```