

SCHAC

SCHEMA for ACademia

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About SCHAC

The SCHema for ACademia, SCHAC <<https://wiki.refeds.org/display/STAN/SCHAC>>, aims to define and promote common schemas in the field of higher education to facilitate inter-institutional data exchange. This schema is originally the result of the work in the area of attributes coordination carried out within the now-discontinued TERENA Task Force on Middleware, TF-EMC2, and is now being maintained under the auspices of REFEDS <<https://refeds.org>> and the Schema Editorial Board.

SCHAC work started in 2005; the first release of "SCHAC Individual Attributes Specification" was issued in May 2006.

Current as well as older SCHAC specifications can be found on SCHAC web page <<https://wiki.refeds.org/display/STAN/SCHAC>>, under the section called "SCHAC Releases" <<https://wiki.refeds.org/display/STAN/SCHAC+Releases>>.

For more information about SCHAC, please refer to the SCHAC web page <<https://wiki.refeds.org/display/STAN/SCHAC>>.

Related Work

In its current version, the SCHAC schemas are not oriented to any particular technology. They define a set of attributes to describe individuals in academic and research institutions. An appropriate LDAP profile is included as an appendix of this document. An XML profile will be defined in [Appendix B](#) at the end of this document.

These definitions assume that other attributes describing individuals are already available and properly encoded, according to the following standards:

The eduPerson schema v. 4.4.0, as defined at <https://wiki.refeds.org/display/STAN/eduPerson>
The person schema, as defined by X.521 (2001) - [RFC 4517, RFC 4519]
The organizationalPerson schema, as defined by X.521 (2001) - [RFC 4517, RFC 4519]
The inetOrgPerson schema, as defined by RFC 2798

Please note that where newer versions of the references exist, only the versions referred to in the current SCHAC specifications normatively apply.

Attribute Information

For all attributes, the following metadata is defined:

Name	A label used to identify and distinguish one attribute from another
Description	A short description of the attribute
OID	Registered OID of the attribute
Format	The syntax for the representation of the attribute's values
Number of values	Single Only one value is permitted for describing a given individual Multi An indefinite number of values can be used
References	Additional information used to clarify some properties of attributes like format, description or number of values
RFC 4517 definition	Lightweight Directory Access Protocol (LDAP): Syntaxes and Matching Rules
Examples	Example of values used within the attribute

Attribute Classification

The attributes considered in this document are designed to contain information specifically about people. It is helpful to consider this information within broad categories. The ten categories used in this document were collected from the NMI LocalDomainPerson survey <http://www.nmi-edit.org/CAMP/EDIT_IdM/docs/internet2-mace-dir-localdomainperson-200505.html> and discussions with the International Schema Archives (Feb, 2004; no longer available online). The categories are:

- Personal Characteristics
- Contact / Location Information
- Student Information
- Employee Information
- Linkage Identifiers / Foreign Keys
- Entry Metadata / Administration Information
- Confidentiality / Attribute Release (Visibility)
- Authorization, Entitlements
- Group-related Attributes

Attributes defined by SCHAC

Personal Characteristics

Personal characteristics describe the individual person represented by the entry.

schacMotherTongue

Name	schacMotherTongue
Description	Is the language a person learns first. Correspondingly, the person is called a native speaker of the language. Usually a child learns the basics of their first language from their family.
OID	1.3.6.1.4.1.25178.1.2.1
Format	See RFC 3066 Tags for the Identification of Languages
Number of values	Single
References	ISO 639 - Language Codes RFC 2798 - Definition of the inetOrgPerson LDAP Object Class RFC 3066 - Tags for the Identification of Languages
RFC 4517 definition	(schacAttributeType:1 NAME 'schacMotherTongue' DESC 'RFC 3066 code for preferred language of communication' EQUALITY caseExactMatch SINGLE-VALUE SYNTAX 1.3.6.1.4.1.1466.115.121.1.15)
Examples	schacMotherTongue = fr schacMotherTongue = es-ES

schacGender – moved to Deprecated Attributes

schacDateOfBirth

Name	schacDateOfBirth
Description	The date of birth for the subject it is associated with
OID	1.3.6.1.4.1.25178.1.2.3
Format	Numeric value YYYYMMDD, using 4 digits for year, 2 digits for month and 2 digits for day as described in RFC 3339 'Date and Time on the Internet: Timestamps' as reference using the 'full-date' format from paragraph 5.6 but without the dashes.
Number of values	Single
References	RFC 2985 - PKCS #9: Selected Object Classes and Attribute Types Version 2.0.Sections 5.2.4, B.3.8

	RFC 3339 - Date and Time on the Internet: Timestamps.'Date and Time on the Internet: Timestamps' as reference using the 'full-date' format from paragraph 5.6 but without the dashes ISO 8601 - Data elements and interchange formats - Information interchange - Representation of dates and times
RFC 4517 definition	(schacAttributeType:3 NAME 'schacDateOfBirth' DESC 'Date of birth (format YYYYMMDD, only numeric chars)' EQUALITY numericStringMatch ORDERING numericStringOrderingMatch SUBSTR numericStringSubstringsMatch SINGLE-VALUE SYNTAX 1.3.6.1.4.1.1466.115.121.1.36)
Examples	schacDateOfBirth = 19660412

schacYearOfBirth

Name	schacYearOfBirth
Description	The year of birth for the subject it is associated with
OID	1.3.6.1.4.1.25178.1.0.2.3
Format	Numeric value YYYY, using 4 digits for the year, as described in RFC 3339 'Date and Time on the Internet: Timestamps' as reference using the 'full-date' format from paragraph 5.6 but without the dashes.
Number of values	Single
References	RFC 2985 - PKCS #9: Selected Object Classes and Attribute Types Version 2.0.Sections 5.2.4, B.3.8 RFC 3339 - Date and Time on the Internet: Timestamps.'Date and Time on the Internet: Timestamps' as reference using the 'full-date' format from paragraph 5.6 but without the dashes ISO 8601 - Data elements and interchange formats - Information interchange - Representation of dates and times
RFC 4517 definition	(schacExpAttr:3 NAME 'schacYearOfBirth' DESC 'Date of birth (format YYYY, only numeric chars)' EQUALITY numericStringMatch ORDERING numericStringOrderingMatch SUBSTR numericStringSubstringsMatch SINGLE-VALUE SYNTAX 1.3.6.1.4.1.1466.115.121.1.36)
Examples	schacYearOfBirth = 1966

schacPlaceOfBirth

Name	schacPlaceOfBirth
Description	The schacPlaceOfBirth attribute specifies the place of birth for the subject it is associated with.
OID	1.3.6.1.4.1.25178.1.2.4
Format	Free format string
Number of values	Single
References	RFC 2985 - PKCS #9: Selected Object Classes and Attribute Types Version 2.0.Sections 5.2.5, B.3.9
RFC 4517 definition	(schacAttributeType:4 NAME 'schacPlaceOfBirth' DESC 'Birthplace of a person' EQUALITY caseIgnoreMatch ORDERING caseIgnoreOrderingMatch SUBSTR caseIgnoreSubstringsMatch SINGLE-VALUE SYNTAX 1.3.6.1.4.1.1466.115.121.1.15)
Examples	schacPlaceOfBirth = Algeciras, Spain

schacCountryOfCitizenship

Name	schacCountryOfCitizenship
Description	The schacCountryOfCitizenship attribute specifies the (claimed) countries of citizenship for the subject it is associated with.
OID	1.3.6.1.4.1.25178.1.2.5
Format	Two-letter country acronym in accordance with ISO 3166-1 alpha 2.
Number of values	Multi
References	RFC 2985 - PKCS #9: Selected Object Classes and Attribute Types Version 2.0.Sections 5.2.7, B.3.11 ISO 3166-1 alpha 2 - Two-letter codes for the representation of names of countries
RFC 4517 definition	(schacAttributeType:5 NAME 'schacCountryOfCitizenship' DESC 'Country of citizenship of a person. Format two-letter acronym according to ISO 3166-1 alpha 2' EQUALITY caseIgnoreMatch SYNTAX 1.3.6.1.4.1.1466.115.121.1.15)
Examples	schacCountryOfCitizenship = es

schacSn1

Name	schacSn1
Description	First surname of a person ("the surname" in international terms). schacSn1 would contain whatever values the described person thinks they should contain. Splitting shall be done by humans. That means that, when filling a SCHAC-based description that allows the use of schacSn1 and schacSn2, the administrators must ask for 1st surname and 2nd surname (if applicable) as well as they do for givenName, surname, etc.
OID	1.3.6.1.4.1.25178.1.2.6
Format	Free format string
Number of values	Multi
RFC 4517 definition	<pre>(schacAttributeType:6 NAME 'schacSn1' DESC 'First surname of a person' EQUALITY caseIgnoreMatch ORDERING caseIgnoreOrderingMatch SUBSTR caseIgnoreSubstringsMatch SYNTAX 1.3.6.1.4.1.1466.115.121.1.15)</pre>
Examples	In Spain, if sn = Lopez de la Moraleda y de Las Altas Alcornias and that person uses Lopez de la Moraleda as the first component of the surname we can write: schacSn1 = Lopez de la Moraleda In Poland, if sn = Gorecka-Wolniewicz and we decide to use the national convention for the sn attribute, we can write: schacSn1 = Wolniewicz

schacSn2

Name	schacSn2
Description	Second surname of a person (how this is assigned is a local matter). schacSn2 would contain whatever values the described person thinks they should contain. Splitting shall be done by humans. That means that, when filling a SCHAC-based description that allows the use of schacSn1 and schacSn2, the administrators must ask for 1st surname and 2nd surname (if applicable) as well as they do for givenName, surname, etc.
OID	1.3.6.1.4.1.25178.1.2.7
Format	Free format string
Number of values	Multi
RFC 4517 definition	<pre>(schacAttributeType:7 NAME 'schacSn2' DESC 'Second surname of a person' EQUALITY caseIgnoreMatch ORDERING caseIgnoreOrderingMatch SUBSTR caseIgnoreSubstringsMatch SYNTAX 1.3.6.1.4.1.1466.115.121.1.15)</pre>

Examples	<p>In Spain, if sn = Lopez de la Moraleda y de Las Altas Alcornias and that person uses de Las Altas Alcornias as the second component of the surname we can write: schacSn2 = de Las Altas Alcornias</p> <p>In Poland, if sn = Gorecka-Wolniewicz and we decide to use the national convention for the sn attribute, we can write: schacSn2 = Gorecka</p>
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schacPersonalTitle

Name	schacPersonalTitle
Description	The Personal Title attribute type specifies a personal title or salutation for a person. Examples of personal titles are "Ms", "Dr", "Prof", "Rev", "Sr".
OID	1.3.6.1.4.1.25178.1.2.8
Format	Free format string
Number of values	Single
References	RFC 1274 - The COSINE and Internet X.500 Schema, Sections 9.3.30
RFC 4517 definition	<pre>(schacAttributeType:8 NAME 'schacPersonalTitle' DESC 'RFC1274: personal title' EQUALITY caseIgnoreMatch SUBSTR caseIgnoreSubstringsMatch SYNTAX 1.3.6.1.4.1.1466.115.121.1.15)</pre>
Examples	schacPersonalTitle = Prof

Contact / Location Information

Higher education's established history of openness and collaboration gives rise to the use of institutional directories as a primary means of locating and contacting potential collaborators and other persons-of-interest at peer institutions.

schacHomeOrganization

Name	schacHomeOrganization
Description	<p>Specifies a person's home organization using the domain name of the organization.</p> <p>Issuers of schacHomeOrganization attribute values via SAML are strongly encouraged to publish matching shibmd:Scope elements as part of their IDP's SAML metadata.</p> <p>Relaying Parties receiving schacHomeOrganization values via SAML are strongly encouraged to check attribute values against the Issuer's published shibmd:Scope elements in SAML metadata, and may discard any non-matching values.</p>
OID	1.3.6.1.4.1.25178.1.2.9

Format	Domain name according to RFC 1035
Number of values	Single
References	RFC 1035 - Domain names - implementation and specification ShibMetaExt 1.0: https://wiki.shibboleth.net/confluence/display/SC/ShibMetaExt+V1.0
RFC 4517 definition	(schacAttributeType:9 NAME 'schacHomeOrganization' DESC 'Domain name of the home organization' EQUALITY caseIgnoreMatch SUBSTR caseIgnoreSubstringsMatch SINGLE-VALUE SYNTAX 1.3.6.1.4.1.1466.115.121.1.15)
Examples	schacHomeOrganization = tut.fi

schacHomeOrganizationType

Name	schacHomeOrganizationType
Description	Type of a Home Organization
OID	1.3.6.1.4.1.25178.1.2.10
Format	urn:schac:homeOrganizationType:<country-code>:<string> The <country-code> must be a valid two-letter ISO 3166-1 alpha 2 country code identifier or the string "int", and assigned by the SCHAC URN Registry for this attribute at https://wiki.refeds.org/display/STAN/SCHAC+URN+Registry <string> from a nationally controlled vocabulary, published through the URI identified at the above mentioned SCHAC URN registry.
Number of values	Multi
References	RFC 2141 - URN Syntax ISO 3166-1 alpha 2 - Two-letter codes for the representation of names of countries SCHAC URN Registry: https://wiki.refeds.org/display/STAN/SCHAC+URN+Registry
RFC 4517 definition	(schacAttributeType:10 NAME 'schacHomeOrganizationType' DESC 'Type of the home organization' EQUALITY caseIgnoreMatch SYNTAX 1.3.6.1.4.1.1466.115.121.1.15)
Examples	Common values: urn:schac:homeOrganizationType:eu:higherEducationallInstitution urn:schac:homeOrganizationType:eu:educationallInstitution urn:schac:homeOrganizationType:int:NREN urn:schac:homeOrganizationType:int:universityHospital urn:schac:homeOrganizationType:int:NRENAffiliate urn:schac:homeOrganizationType:int:other National extensions: urn:schac:homeOrganizationType:ch:vho

	urn:schac:homeOrganizationType:es:opi
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schacCountryOfResidence

Name	schacCountryOfResidence
Description	The schacCountryOfResidence attribute specifies the (claimed) country of residence for the subject is associated with.
OID	1.3.6.1.4.1.25178.1.2.11
Format	Two-letter country acronym in accordance with ISO 3166-1 alpha 2 country code identifier.
Number of values	Multi
References	RFC 2985 - PKCS #9: Selected Object Classes and Attribute Types Version 2.0.Sections 5.2.8, B.3.12 ISO 3166-1 alpha 2 - Two-letter codes for the representation of names of countries
RFC 4517 definition	(schacAttributeType:11 NAME 'schacCountryOfResidence' DESC 'Country of residence of a person. Format two-letter acronym according to ISO 3166-1 alpha 2' EQUALITY caseIgnoreMatch SYNTAX 1.3.6.1.4.1.1466.115.121.1.15)
Examples	schacCountryOfResidence = es

schacUserPresenceID

Name	schacUserPresenceID
Description	To store a set of values related to network presence protocols
OID	1.3.6.1.4.1.25178.1.2.12
Format	URI
Number of values	Multi
References	RFC 2396 - Uniform Resource Identifiers (URI): Generic Syntax RFC 3508 - H.323 URL Schema RFC 3261 - SIP: Session Initiation Protocol RFC 5122 - IRIs and URIs for XMPP
RFC 4517 definition	(schacAttributeType:12 NAME 'schacUserPresenceID' DESC 'Used to store a set of values related to the network presence' EQUALITY caseExactMatch SUBSTR caseExactSubstringsMatch SYNTAX 1.3.6.1.4.1.1466.115.121.1.15)
Examples	schacUserPresenceID = xmpp:pepe@im.univx.es schacUserPresenceID = sip:pepe@myweb.com schacUserPresenceID = sip:+34-95-505-6600@univx.es;transport=TCP;user=phone

	schacUserPresenceID = sips:alice@atlanta.com?subject=project%20x&priority=urgent schacUserPresenceID = h323:pepe@myweb.fi:808;params
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Student Information

Student information includes attributes that have relevance to the student role, such as curriculum, major, and degree.

No attributes defined

Employee Information

Employee information includes attributes that have relevance to the employee role, such as position, office hours, and job title

schacPersonalPosition

Name	schacPersonalPosition
Description	The Personal Position attribute type specifies a personal position inside an institution.
OID	1.3.6.1.4.1.25178.1.2.13
Format	urn:schac:personalPosition:<country-code>:<domain>:<iNSS> The <country-code> must be a valid two-letter ISO 3166-1 alpha 2 country code identifier or the string "int", and assigned by the SCHAC URN Registry for this attribute at https://wiki.refeds.org/display/STAN/SCHAC+Registry <domain> is the institution domain name according to RFC 1035 <iNSS> is a Namespace Specific String as defined in RFC 2141 but case insensitive. Valid components for it are those specified (or explicitly delegated) by the SCHAC URN Registry for this attribute at https://wiki.refeds.org/display/STAN/SCHAC+Registry
Number of values	Multi
RFC 4517 definition	<pre>(schacAttributeType:13 NAME 'schacPersonalPosition' DESC 'Position inside an institution' EQUALITY caseIgnoreMatch SUBSTR caseIgnoreSubstringsMatch SYNTAX 1.3.6.1.4.1.1466.115.121.1.15)</pre>
References	RFC 1035 - Domain names - implementation and specification RFC 2141 - URN Syntax SCHAC URN Registry: https://wiki.refeds.org/display/STAN/SCHAC+Registry RFC 2256 - A Summary of the X.500(96) User Schema for use with LDAPv3.

	<p>Section: 5.13 title</p> <p>This attribute contains the title, such as "Vice President", of a person in their organizational context. The "personalTitle" attribute would be used for a person's title independent of their job function.</p> <p>ISO 3166-1 alpha 2 - Two-letter codes for the representation of names of countries</p>
Examples	<p>National extensions:</p> <p>urn:schac:personalPosition:pl:umk.pl:programmer</p>

Linkage Identifiers / Foreign Keys

Linkage attributes are those identifiers used to link a directory entry with records in external data stores or other directory entries. The use of linkage identifiers can obviate the need to synchronize data elements between systems of record and the enterprise directory. Linkage attributes are also used in the implementation of metadirectory services.

schacPersonalUniqueCode

Name	schacPersonalUniqueCode
Description	<p>Specifies a "unique code" for the subject it is associated with.</p> <p>Its value does not necessarily correspond to any identifier outside the scope of the directories using this schema.</p> <p>This might be Student number, Employee number,...</p>
OID	1.3.6.1.4.1.25178.1.2.14
Format	<p>urn:schac:personalUniqueCode:<country-code>:<iNSS></p> <p>The <country-code> must be a valid two-letter ISO 3166-1 alpha 2 country code identifier or the string "int", and assigned by the SCHAC URN Registry for this attribute at https://wiki.refeds.org/display/STAN/SCHAC+URN+Registry</p> <p><iNSS> is a Namespace Specific String as defined in RFC 2141 but case insensitive, from a nationally controlled vocabulary, published through the URI identified at the above mentioned SCHAC URN registry.</p>
Number of values	Multi
References	<p>RFC 2141 - URN Syntax</p> <p>ISO 3166-1 alpha 2 - Two-letter codes for the representation of names of countries</p> <p>European Student Identifier: https://wiki.geant.org/display/SM/European+Student+Identifier</p> <p>SCHAC URN Registry: https://wiki.refeds.org/display/STAN/SCHAC+Registry</p>
RFC 4517 definition	<pre>(schacAttributeType:14 NAME 'schacPersonalUniqueCode' DESC 'Unique code for the subject' EQUALITY caseIgnoreMatch ORDERING caseIgnoreOrderingMatch</pre>

	SUBSTR caseIgnoreSubstringsMatch SYNTAX 1.3.6.1.4.1.1466.115.121.1.15)
Examples	<p>Common values: urn:schac:personalUniqueCode:int:studentID:<country-code>:<code> urn:schac:personalUniqueCode:int:esi:<shO>:<code></p> <p>National extensions: urn:schac:personalUniqueCode:int:esi:<country-code>:<code> urn:schac:personalUniqueCode:fi:tut.fi:hetu:010161-995A urn:schac:personalUniqueCode:es:uma:estudiante:a3b123c12 urn:schac:personalUniqueCode:se:LIN:87654321</p>

schacPersonalUniqueID

Name	schacPersonalUniqueID
Description	Specifies a "legal unique identifier" for the subject it is associated with. This might be DNI in Spain, FIC in Finland, NIN in Sweden,...
OID	1.3.6.1.4.1.25178.1.2.15
Format	<p>urn:schac:personalUniqueID:<country-code>:<idType>:<idValue></p> <p>The <country-code> must be a valid two-letter ISO 3166-1 alpha 2 country code identifier or the string "int", and assigned by the SCHAC URN Registry for this attribute at https://wiki.refeds.org/display/STAN/SCHAC+URN+Registry <idType>. Acceptable values must be declared per each country code through the URI identified at the above mentioned SCHAC URN registry. <idValue></p>
Number of values	Multi
References	<p>RFC 2141 - URN Syntax ISO 3166-1 alpha 2 - Two-letter codes for the representation of names of countries SCHAC URN Registry: https://wiki.refeds.org/display/STAN/SCHAC+URN+Registry</p>
RFC 4517 definition	<pre>(schacAttributeType:15 NAME 'schacPersonalUniqueID' DESC 'Unique code for the subject' EQUALITY caseExactMatch ORDERING caseExactOrderingMatch SUBSTR caseExactSubstringsMatch SYNTAX 1.3.6.1.4.1.1466.115.121.1.15)</pre>
Examples	<p>National extensions urn:schac:personalUniqueID:fi:FIC:260667-123F urn:schac:personalUniqueID:es:DNI:31241312L urn:schac:personalUniqueID:se:NIN:197104058289</p>

Entry Metadata / Administration Information

Entry metadata attributes are used to contain information about the entry itself, often its status, birth, and death. Such attributes can be critical to metadirectory processing. While the object classes discussed here were designed to accommodate person entries, metadata attributes can also be useful with non-person entry types such as groups. In such cases the metadata attributes may be best defined in an auxiliary object class independent of the person object class.

schacExpiryDate

Name	schacExpiryDate
Description	The date from which the set of data is to be considered invalid (specifically, in what refers to rights and entitlements). This date applies to the entry as a whole.
OID	1.3.6.1.4.1.25178.1.2.17
Format	Values must be expressed in UTC and must include seconds (i.e., times are YYYYMMDDhhmmssZ), even where the number of seconds is zero. GeneralizedTime values must not include fractional seconds.
Number of values	Single
References	RFC 2630 - Cryptographic Message Syntax. Section 11.3 RFC 2985 - PKCS #9: Selected Object Classes and Attribute Types Version 2.0.Sections 5.2.4, B.3.8 RFC 3339 - Date and Time on the Internet: Timestamps.'Date and Time on the Internet: Timestamps' as reference using the 'full-date' format from paragraph 5.6 but without the dashes ISO 8601 - Data elements and interchange formats - Information interchange - Representation of dates and times
RFC 4517 definition	(schacAttributeType:17 NAME 'schacExpiryDate' DESC 'Date from which the set of data is to be considered invalid (format YYYYMMDDhhmmssZ) ' EQUALITY generalizedTimeMatch ORDERING generalizedTimeOrderingMatch SYNTAX 1.3.6.1.4.1.1466.115.121.1.24)
Examples	schacExpiryDate = 20051231125959Z

Confidentiality / Attribute Release (Visibility)

Confidentiality attributes are commonly used to indicate whether an entry is visible publicly, visible only to affiliates of the institution, or not visible at all. In some cases only specific attributes, such as phone, address, and email address, are restricted, in other cases all attributes are restricted.

schacUserPrivateAttribute

Name	schacUserPrivateAttribute
Description	Used to model privacy requirements, as expressed by the user and/or organizational policies. The values are intended to be attribute type names and applies to the attribute and any subtypes of it for a given entity. In what respects to data exchange, it applies to the expression of privacy requirements. This attribute can also have specific operational semantics (one has already been applied to LDAP servers: see references below), that will be defined in a separate document.
OID	1.3.6.1.4.1.25178.1.2.18
Format	An attribute type identifier. Operational semantics may imply specific values as wildcards.
Number of values	Multi
References	http://www.rediris.es/ldap/schema/iris/irisUserPrivateAttribute/
RFC 4517 definition	(schacAttributeType:18 NAME 'schacUserPrivateAttribute' DESC 'Set of denied access attributes' EQUALITY caseIgnoreIA5Match SUBSTR caseIgnoreIA5SubstringsMatch SYNTAX 1.3.6.1.4.1.1466.115.121.1.26)
Examples	Attributes mail and telephoneNumber are considered private: schacUserPrivateAttribute = mail schacUserPrivateAttribute = telephoneNumber

Authorization, Entitlements

Authorization for services is generally implemented in LDAP directories either through the use of entry attributes or group memberships.

Applications such as Shibboleth (see <<https://shibboleth.net>>) can make use of entitlement attributes in an entry to provide authorization information to requesting services.

schacUserStatus

Name	schacUserStatus
Description	Used to store a set of status of a person as user of services
OID	1.3.6.1.4.1.25178.1.2.19
Format	urn:schac:userStatus:<country-code>:<domain>:<iNSS> The <country-code> must be a valid two-letter ISO 3166-1 alpha 2 country code identifier or the string "int", and assigned by the SCHAC URN Registry for this attribute at https://wiki.refeds.org/display/STAN/SCHAC+URN+Registry <domain> is the institution domain name according to RFC 1035 <iNSS> is a Namespace Specific String as defined in RFC 2141 but case insensitive
Number of values	Multi
References	RFC 1035 - Domain names - implementation and specification RFC 2141 - URN Syntax
RFC 4517 definition	<pre>(schacAttributeType:19 NAME 'schacUserStatus' DESC 'Used to store a set of status of a person as user of services' EQUALITY caseIgnoreMatch SUBSTR caseIgnoreSubstringsMatch SYNTAX 1.3.6.1.4.1.1466.115.121.1.15)</pre>
Examples	To store different user activity states at University of Málaga (uma.es): urn:schac:userStatus:es:uma.es:affiliation:expired urn:schac:userStatus:es:uma.es:sendMail:expired urn:schac:userStatus:es:uma.es:getMail:active A parameter in the URN can be used to represent the temporal validity of the statement. urn:schac:userStatus:si:ujl.si:webmail:active+ttl=20060531235959

Group-related Attributes

Directory groups are often used to provide authorization to entries and attributes, as well as to restrict or provide access to services. There are benefits to having group memberships described in members' entries as well as in a group entry. Because not all directory servers provide this functionality (Microsoft Active Directory and Novell eDirectory do) local attributes are often defined to meet organizational needs. For a complete treatment of issues concerning LDAP groups please see the MACE Best Practices for Directory Groups document at <http://middleware.internet2.edu/dir/groups>

schacProjectMembership

Name	schacProjectMembership
Description	The name of the project the user belongs to
OID	1.3.6.1.4.1.25178.1.2.20
Format	<project-name> The <project-name> must be a name assigned by the SCHAC URN Registry for this attribute at https://wiki.refeds.org/display/STAN/SCHAC+URN+Registry
Number of values	Multi
RFC 4517 definition	(schacAttributeType:20 NAME 'schacProjectMembership' DESC 'Name of the project' EQUALITY caseIgnoreMatch SUBSTR caseIgnoreSubstringsMatch SYNTAX 1.3.6.1.4.1.1466.115.121.1.15)
Examples	schacProjectMembership = perfsonar

schacProjectSpecificRole

Name	schacProjectSpecificRole
Description	Used to store a set of roles inside specific projects
OID	1.3.6.1.4.1.25178.1.2.21
Format	urn:schac:projectSpecificRole:<project-name>:<iNSS> The <project-name> must be a name assigned by the SCHAC URN Registry for this attribute at https://wiki.refeds.org/display/STAN/SCHAC+URN+Registry <iNSS> is a Namespace Specific String as defined in RFC 2141 but case insensitive
Number of values	Multi
References	RFC 2141 - URN Syntax

RFC 4517 definition	(schacAttributeType:21 NAME 'schacProjectSpecificRole' DESC 'Used to store a set of roles of a person inside a project' EQUALITY caseIgnoreMatch SUBSTR caseIgnoreSubstringsMatch SYNTAX 1.3.6.1.4.1.1466.115.121.1.15)
Examples	schacProjectSpecificRole = urn:schac:projectSpecificRole:perfsonar:developer

Deprecated Attributes

schacGender

Name	schacGender
Description	Deprecated as of SCHAC 1.6.0 This attribute does not have clearly defined applicability, and does not align with evolving requirements for gender representation
OID	1.3.6.1.4.1.25178.1.2.2
Format	0 Not known 1 Male 2 Female 9 Not specified
Number of values	Single
References	ISO 5218 - Information interchange -- Representation of human sexes. The standard ISO 5218 defines the representation of the human sexes by a numeric digital code. It was created by the Data Management and Interchange Technical Committee and proposed in November 1976
RFC 4517 definition	(schacAttributeType:2 NAME 'schacGender' DESC 'Representation of human sex (see ISO 5218) ' EQUALITY integerMatchSINGLE-VALUE SYNTAX 1.3.6.1.4.1.1466.115.121.1.27)
Examples	schacGender = 2

Appendix A: SCHAC LDAP Schema

Definitions of the object classes and attribute types specified in this document have been done in accordance with RFC 4517, in an attempt to ease integration with LDAP-accessible Directory systems. Lines have been folded in some cases to improve readability.

The latest version of the SCHAC LDAP Schema is available at:
<https://wiki.refeds.org/display/STAN/SCHAC+Releases>

Object identifiers

objectIdentifier GÉANT 1.3.6.1.4.1.25178

objectIdentifier schac GÉANT:1
objectIdentifier schacExperimental schac:0
objectIdentifier schacObjectClass schac:1
objectIdentifier schacAttributeType schac:2
objectIdentifier schacExpObjClass schacExperimental:1
objectIdentifier schacExpAttr schacExperimental:2

Object classes

schacPersonalCharacteristics

```
(
  schacObjectClass:1
  NAME 'schacPersonalCharacteristics'
  DESC 'Personal characteristics describe individual person represented by the entry'
  AUXILIARY
  MAY (
    schacMotherTongue $ schacDateOfBirth $ schacPlaceOfBirth $
    schacCountryOfCitizenship $ schacSn1 $ schacSn2 $ schacPersonalTitle
  )
)
```

schacContactLocation

```
(
  schacObjectClass:2
  NAME 'schacContactLocation'
  DESC 'Primary means of locating and contacting potential collaborators
  and other persons-of-interest at peer institutions'
  AUXILIARY
  MAY (
    schacHomeOrganization $ schacHomeOrganizationType $
    schacCountryOfResidence $ schacUserPresenceID
  )
)
```

schacEmployeeInfo

```
( schacObjectClass:3
  NAME 'schacEmployeeInfo'
  DESC 'Employee information includes attributes that have relevance to the
    Employee role, such as position, office hours, and job title'
  AUXILIARY
  MAY ( schacPersonalPosition )
)
```

schacLinkageIdentifiers

```
(
  schacObjectClass:4
  NAME 'schacLinkageIdentifiers'
  DESC 'Used to link a directory entry with records in external
    data stores or other directory entries'
  AUXILIARY
  MAY (
    schacPersonalUniqueCode $ schacPersonalUniqueID
  )
)
```

schacEntryMetadata

```
(
  schacObjectClass:5
  NAME 'schacEntryMetadata'
  DESC 'Used to contain information about the entry itself, often
    its status, birth, and death'
  AUXILIARY
  MAY (
    schacExpiryDate
  )
)
```

schacEntryConfidentiality

```
(
  schacObjectClass:6
  NAME 'schacEntryConfidentiality'
  DESC 'Used to indicate whether an entry is visible publicly, visible only to
    affiliates of the institution, or not visible at all'
  AUXILIARY
  MAY (
    schacUserPrivateAttribute
  )
)
```

schacUserEntitlements

```
(
  schacObjectClass:7
```

```
NAME 'schacUserEntitlements'
DESC 'Authorization for services'
AUXILIARY
MAY (
  schacUserStatus
)
)
```

schacGroupMembership

```
(
  schacObjectClass:8
  NAME 'schacGroupMembership'
  DESC 'Groups used to provide/restrict authorization to entries and attributes'
  AUXILIARY
  MAY (
    schacProjectMembership $ schacProjectSpecificRole
  )
)
```

Attribute types

schacMotherTongue

```
(
  schacAttributeType:1
  NAME 'schacMotherTongue'
  DESC 'RFC 3066 code for preferred language of communication'
  EQUALITY caseExactMatch
  SINGLE-VALUE
  SYNTAX 1.3.6.1.4.1.1466.115.121.1.15
)
```

schacGender

```
(
  schacAttributeType:2
  NAME 'schacGender'
  DESC 'Deprecated as of SCHAC 1.6.0 '
  EQUALITY integerMatch
  SINGLE-VALUE
  SYNTAX 1.3.6.1.4.1.1466.115.121.1.27
)
```

schacDateOfBirth

```
(
  schacAttributeType:3
  NAME 'schacDateOfBirth'
  DESC 'Date of birth (format YYYYMMDD, only numeric chars)'
  EQUALITY numericStringMatch
  ORDERING numericStringOrderingMatch
  SUBSTR numericStringSubstringsMatch
)
```

SINGLE-VALUE

SYNTAX 1.3.6.1.4.1.1466.115.121.1.36

)

schacPlaceOfBirth

(

schacAttributeType:4

NAME 'schacPlaceOfBirth'

DESC 'Birthplace of a person'

EQUALITY caseIgnoreMatch

ORDERING caseIgnoreOrderingMatch

SUBSTR caseIgnoreSubstringsMatch

SINGLE-VALUE

SYNTAX 1.3.6.1.4.1.1466.115.121.1.15

)

schacCountryOfCitizenship

(

schacAttributeType:5

NAME 'schacCountryOfCitizenship'

DESC 'Country of citizenship of a person. Format two-letter
acronym according to ISO 3166-1 alpha 2'

EQUALITY caseIgnoreMatch

SYNTAX 1.3.6.1.4.1.1466.115.121.1.15

)

schacSn1

(

schacAttributeType:6

NAME 'schacSn1'

DESC 'First surname of a person'

EQUALITY caseIgnoreMatch

ORDERING caseIgnoreOrderingMatch

SUBSTR caseIgnoreSubstringsMatch

SYNTAX 1.3.6.1.4.1.1466.115.121.1.15

)

schacSn2

(

schacAttributeType:7

NAME 'schacSn2'

DESC 'Second surname of a person'

EQUALITY caseIgnoreMatch

ORDERING caseIgnoreOrderingMatch

SUBSTR caseIgnoreSubstringsMatch

SYNTAX 1.3.6.1.4.1.1466.115.121.1.15

)

schacPersonalTitle

(

SCHAC 1.6.0

schacAttributeType:8
NAME 'schacPersonalTitle'
DESC 'RFC1274: personal title'
EQUALITY caseIgnoreMatch
SUBSTR caseIgnoreSubstringsMatch
SYNTAX 1.3.6.1.4.1.1466.115.121.1.15

)

schacHomeOrganization

(
schacAttributeType:9
NAME 'schacHomeOrganization'
DESC 'Domain name of the home organization'
EQUALITY caseIgnoreMatch
SUBSTR caseIgnoreSubstringsMatch
SINGLE-VALUE
SYNTAX 1.3.6.1.4.1.1466.115.121.1.15

)

schacHomeOrganizationType

(
schacAttributeType:10
NAME 'schacHomeOrganizationType'
DESC 'Type of the home organization'
EQUALITY caseIgnoreMatch
SYNTAX 1.3.6.1.4.1.1466.115.121.1.15

)

schacCountryOfResidence

(
schacAttributeType:11
NAME 'schacCountryOfResidence'
DESC 'Country of residence of a person. Format two-letter
acronym according to ISO 3166-1 alpha 2'
EQUALITY caseIgnoreMatch
SYNTAX 1.3.6.1.4.1.1466.115.121.1.15

)

schacUserPresenceID

(
schacAttributeType:12
NAME 'schacUserPresenceID'
DESC 'Used to store a set of values related to the network presence'
EQUALITY caseExactMatch
SUBSTR caseExactSubstringsMatch
SYNTAX 1.3.6.1.4.1.1466.115.121.1.15

)

schacPersonalPosition

(
SCHAC 1.6.0

schacAttributeType:13
NAME 'schacPersonalPosition'
DESC 'Position inside an institution'
EQUALITY caseIgnoreMatch
SUBSTR caseIgnoreSubstringsMatch
SYNTAX 1.3.6.1.4.1.1466.115.121.1.15

)

schacPersonalUniqueCode

(

schacAttributeType:14
NAME 'schacPersonalUniqueCode'
DESC 'Unique code for the subject'
EQUALITY caseIgnoreMatch
ORDERING caseIgnoreOrderingMatch
SUBSTR caseIgnoreSubstringsMatch
SYNTAX 1.3.6.1.4.1.1466.115.121.1.15

)

schacPersonalUniqueID

(

schacAttributeType:15
NAME 'schacPersonalUniqueID'
DESC 'Unique code for the subject'
EQUALITY caseExactMatch
ORDERING caseExactOrderingMatch
SUBSTR caseExactSubstringsMatch
SYNTAX 1.3.6.1.4.1.1466.115.121.1.15

)

schacUUID

Attribute deleted after Málaga TF-EMC2 meeting.

schacExpiryDate

(

schacAttributeType:17
NAME 'schacExpiryDate'
DESC 'Date from which the set of data is to be considered
invalid (format YYYYMMDDhhmmssZ)'
EQUALITY generalizedTimeMatch
ORDERING generalizedTimeOrderingMatch
SYNTAX 1.3.6.1.4.1.1466.115.121.1.24

)

schacUserPrivateAttribute

(

schacAttributeType:18
NAME 'schacUserPrivateAttribute'
DESC 'Set of denied access attributes'
EQUALITY caseIgnoreIA5Match

SUBSTR caseIgnoreIA5SubstringsMatch
SYNTAX 1.3.6.1.4.1.1466.115.121.1.26

)

schacUserStatus

(
 schacAttributeType:19
 NAME 'schacUserStatus'
 DESC 'Used to store a set of status of a person as user of services'
 EQUALITY caseIgnoreMatch
 SUBSTR caseIgnoreSubstringsMatch
 SYNTAX 1.3.6.1.4.1.1466.115.121.1.15
)

schacProjectMembership

(
 schacAttributeType:20
 NAME 'schacProjectMembership'
 DESC 'Name of the project'
 EQUALITY caseIgnoreMatch
 SUBSTR caseIgnoreSubstringsMatch
 SYNTAX 1.3.6.1.4.1.1466.115.121.1.15
)

schacProjectSpecificRole

(
 schacAttributeType:21
 NAME 'schacProjectSpecificRole'
 DESC 'Used to store a set of roles of a person inside a project'
 EQUALITY caseIgnoreMatch
 SUBSTR caseIgnoreSubstringsMatch
 SYNTAX 1.3.6.1.4.1.1466.115.121.1.15
)

Experimental object class

schacExperimentalOC

(
 schacExpObjClass:1
 NAME 'schacExperimentalOC'
 DESC 'Experimental Object Class'
 AUXILIARY
 MAY (
 schacYearOfBirth
)
)

Experimental attribute types

schacProjectMembership

Attribute changed to official branch below schacGroupMembership object class. OID schacExpAttr:1 is obsoleted and will not be reused ever.

schacProjectSpecificRole

Attribute changed to official branch below schacGroupMembership object class. OID schacExpAttr:2 is obsoleted and will not be reused ever.

schacYearOfBirth

```
(
  schacExpAttr:3
  NAME 'schacYearOfBirth'
  DESC 'Year of birth (format YYYY, only numeric chars)'
  EQUALITY numericStringMatch
  ORDERING numericStringOrderingMatch
  SUBSTR numericStringSubstringsMatch
  SINGLE-VALUE
  SYNTAX 1.3.6.1.4.1.1466.115.121.1.36
)
```

Appendix B: SAML 2.x Profile

The rules defined by the SAML 2.0 X.500/LDAP attribute profile [SAML-X500] are to be applied, with the exception that the XML attribute named Encoding defined by that profile is NOT specified for use with this profile.

[SAML-X500] S.Cantor., SAML V2.0 X.500/LDAP Attribute Profile, Committee Specification 01. OASIS SSTC, March 2008. Document ID sstc-saml-attribute-x500-cs-01. See <http://wiki.oasis-open.org/security/>

Appendix C: List of Changes

May 23, 2022. V:1.6.0 final

- Clarified ISO-3166 to ISO-3166-1 alpha 2
- Added European Student Identifier to examples for `schacPersonalUniqueCode`

March 10, 2022. V:1.6.0 proposed

- Deprecated `schacGender`
- Noted registry reassignment from TERENA to GÉANT

March 31, 2015. V:1.5.0 final

- Added SAML 2.x profile (appendix B)
- Removed SAML 2.0 names from tables
- Removed 'Security Attributes and Keys' (not applicable to today's security needs)

March 10, 2015. V:1.5.0 final-proposed

- added additional information to `schacHomeOrganization`

December 29, 2014. V:1.5.0.c

- All pointers to www.terena.org, including static registry, have been updated to point to the new wiki.refeds.org space
- Minor wording cleanup
- Removal of pointers to documents no longer online
- Clarified what RFCs are normative when a newer RFC is available than what is listed
- Added SAML 2.0 name to each table
- Adjusted overall page layout
- Fixed example in `schacPersonalUniqueId`
- Added clear URLs in introduction to aid with accessibility

September 24, 2012. V:1.5.0.b1

- Changed SCHAC URN prefix from `urn:mace:terena.org:schac` to `urn:shac` following RFC 6338
- Added sHO as a second name for `schacHomeOrganization`
- Added sPUC as a second name for `schacPersonalUniqueCode`
- Added sPUID as a second name for `schacPersonalUniqueID`
- Added sUPA as a second name for `schacUserPrivateAttribute`

June 2, 2011. V:1.4.1.b2

- Changed the example of attribute `schacPersonalUniqueID` from "NIF" to "DNI".

September 16, 2010. V:1.4.1.b1

- Changed "Number of values" from single-valued to multivalued in `schacHomeOrganizationType`.

March 26, 2009. V:1.4.0

- Added a footnote related to "SCHAC URN Registry" and URN NID `urn:schac`

March 18, 2009. V:1.4.0 b4

- Links no longer underlined.
- `schacYearOfBirth` placed near `schacDateOfBirth`.
- Corrected a copy/paste error in `schacYearOfBirth`

March 16, 2009. V:1.4.0 b3

- Added section "About SCHAC".
- Suppression of the first paragraph in section "Normative References".
- Changed section name from "Introduction" to "Normative References".

March 13, 2009. V:1.4.0 b2

- Added `schacYearOfBirth` experimental attribute.
- Changed references to RFC 2252 by RFC 4517.
- Changed erroneous reference from RFC 2131 to RFC 2141 in `schacProjectSpecificRole`.
- Added name, location, editor and contact information.
- Added table of content with page references and alphabetical index of attributes.
- Added the date of the document to all pages.

- Made all useful URLs in the PDF clickable.

March 4, 2009. V:1.4.0 b1

- Added schacGroupMembership objectclass.
- Changed schacProjectMembership and schacProjectSpecificRole from experimental OID branch to official branch below schacGroupMembership object class.
- OIDs schacExpAttr:1 and schacExpAttr:2 are obsoleted and will not be reused ever.

September 30, 2007. V:1.3.1 b1

- Added an experimental OID branch 1.3.6.1.4.1.25178.0.
- Defined an experimental schacExpObjClass objectclass.
- Added schacProjectMembership and schacProjectSpecificRole experimental attributes.
- Changed schacHomeOrganizationType values below namespaces "eu" and "int".

December 12, 2006. V:1.3.0

- Changed references from terena.nl to terena.org.

November 25, 2006. V:1.3.0 b3

- Changed schacPersonalPosition and schacUserStatus format and samples.

October 17, 2006. V:1.3.0 b2

- Deleted schacUUID attribute.

September 28, 2006. V:1.3.0 b1

- Changed schacHomeOrganization syntax OID.
- New definition of shacUUID attribute.
- Changed “?” by “+” in schacUserStatus sample.

May 4, 2006. V: 1.2.0

- Changed schacUserPresenceID syntax from URN to URI.
- Added references to the SCHAC URN registry.
- Clarify schacExpiryDate scope.

March 27, 2006. V: 1.1.2

- Changed from urn:SCHACPREFIX string to urn:schac:
- URN reserved for SCHAC: urn:mace:terena.org:schac:

March 10, 2006. V: 1.1.1

- Added TERENA OID.
- Branch reserved for SCHAC: 1.3.6.1.4.1.25178.1

February 10, 2006. V: 1.1.0

- Added appendix with LDAP schema.

November 22, 2005. V: 1.0.0

- Added attribute's classification according to HEP categories.

September 5, 2005. V: 1.0.0 RC3

June 24, 2005. V: 1.0.0 RC2

June 1, 2005. V: 1.0.0 RC1

May 24, 2005. V: 0.2

April 25, 2005. V: 0.1