Technical Specification

Organization API

Table of Contents

1 Introduction

The Organization API provides services that make it possible to get the organization for a specified school type. The services in the Organization API are accessed via URIs. Each of the 12 supported school types has a unique URI. The organization information that you can get and set via the API follows the standard IMS Enterprise 1.1.

This document describes following:

- Which organization information that can be fetched. (This is described by specifying which attributes that is used for the different IMS entities.)

- How Tieto Education entities are mapped to IMS entities

- How the IMS entities, in the organization, are structured

<u>Note:</u>
IMS Enterprise 1.1 provides a number of attributes. These attributes are not sufficient for Organization API and therefore new attributes has been added as IMS extensions. Some IMS Enterprise 1.1 enumerations have also been extended to support Nordic school requirements, laws and regulations. These extensions are in line with the IMS standard.

1.1 Prerequisites

Before you can get access to the Organization API you must request a license key from Tieto. You should have basic knowledge about the IMS Enterprise standard and W3C XML before you start using the API.

2 Supported school types

The table below describes the supported school types.

School types	Description	Code
Pedagogical care	Childcare groups for children between 1-12 years	PC
Preschool	Childcare for children between 1-6 years	FS
Leisure time centre	Childcare for school-aged children over 6 years	F
Preschool class	Preschool class for children 6 years of age	FK
Compulsory School	Primary school for younger students	GR
Compulsory School For Learning Disabilities	Compulsory school for learning disabilities	S
Upper Secondary School	Secondary school, 3-4 years education	GY
Upper Secondary School For Learning Disabilities	Secondary school for learning disabilities	GS
Swedish For Immigrants School	School for Swedish immigrants	SF
Adult School For Learning Disabilities	Adult school for learning disabilities	SV
Municipal Adult School	Municipality school for adults	KV
Higher Vocational Education	School for Higher Vocational Education	YH

3 Structure and mapping

All entities in the organization for specified school type are mapped into the IMS entities person, group and membership.

The memberships describe relations between persons and groups and groups and other groups.
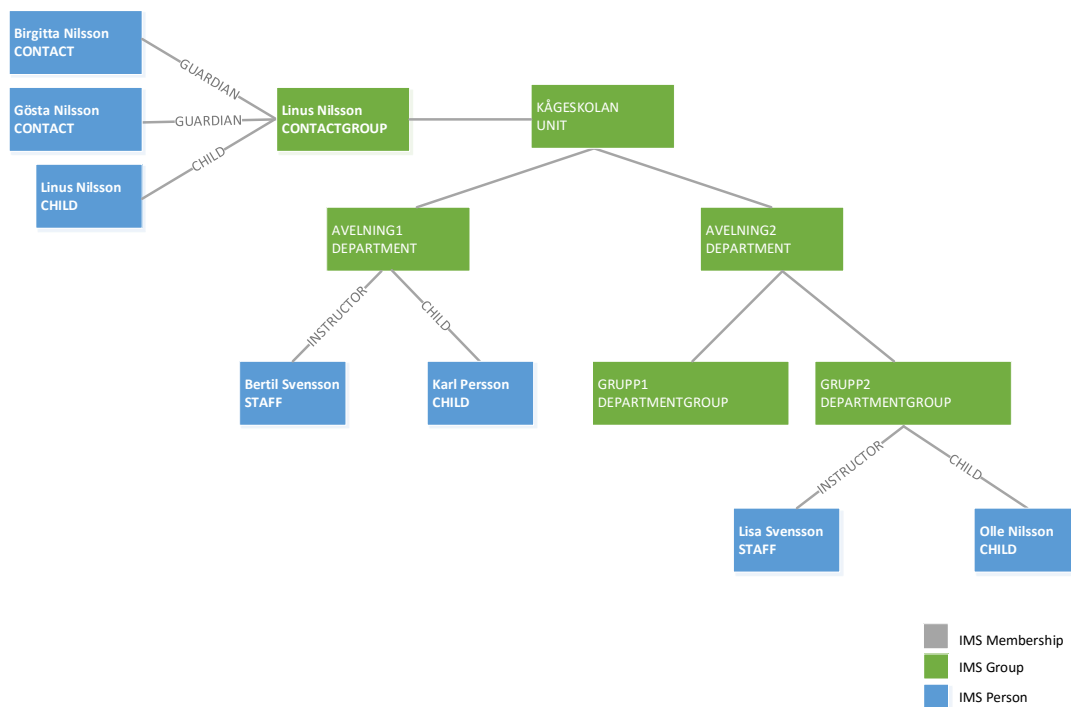
3.1 Mapping

This table describes how childcare and school entities in Tieto Education are mapped to IMS entities.

Type	IMS Type	Description
Course	Group	School course in higher education levels.
Subject	Group	School subject in compulsory education.
Class	Group	School class in education.
Unit	Group	Preschool and school units
EducationGroup	Group	Education group for students
OtherGroup	Group	Other group without any connection to education courses or subjects.
ContactGroup	Group	Contact group for each child and student containing contacts, guardians and mentors
MentorGroup	Group	Group with a mentor and the students the mentor is responsible for
Department	Group	Preschool unit.
DepartmentGroup	Group	Preschool group
Contact	Group	Contact persons for student and child, including guardians for children below 18 year.
Student	Person	School students from preschool class to adult education.
Child	Person	Child 1-12 year in preschool, leisure time centre and pedagogical care.
Staff	Person	School administrative personnel, pedagogical personnel and principals.

3.2 Examples of structures and mappings

3.2.1 Preschool organization example

The diagram below shows an example of how a preschool organization is structured. It also shows mapping between Tieto Education entities and IMS entities.

3.2.2 Compulsory school organization example

The diagram below shows an example of how a compulsory school organization is structured. It also shows mapping between Tieto Education entities and IMS entities.

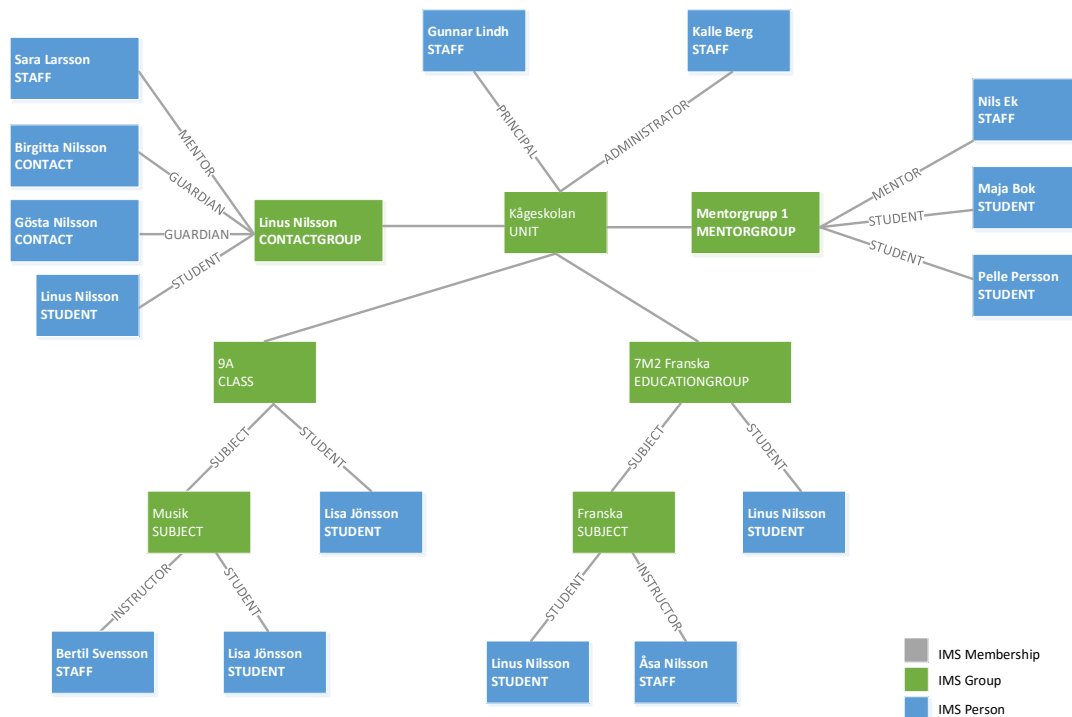Organization API v1 - Technical Specification

3.2.3 Upper secondary school organization example

The diagram below shows an example of how an upper secondary school organization is structured. It also shows mapping between Tieto Education entities and IMS entities.
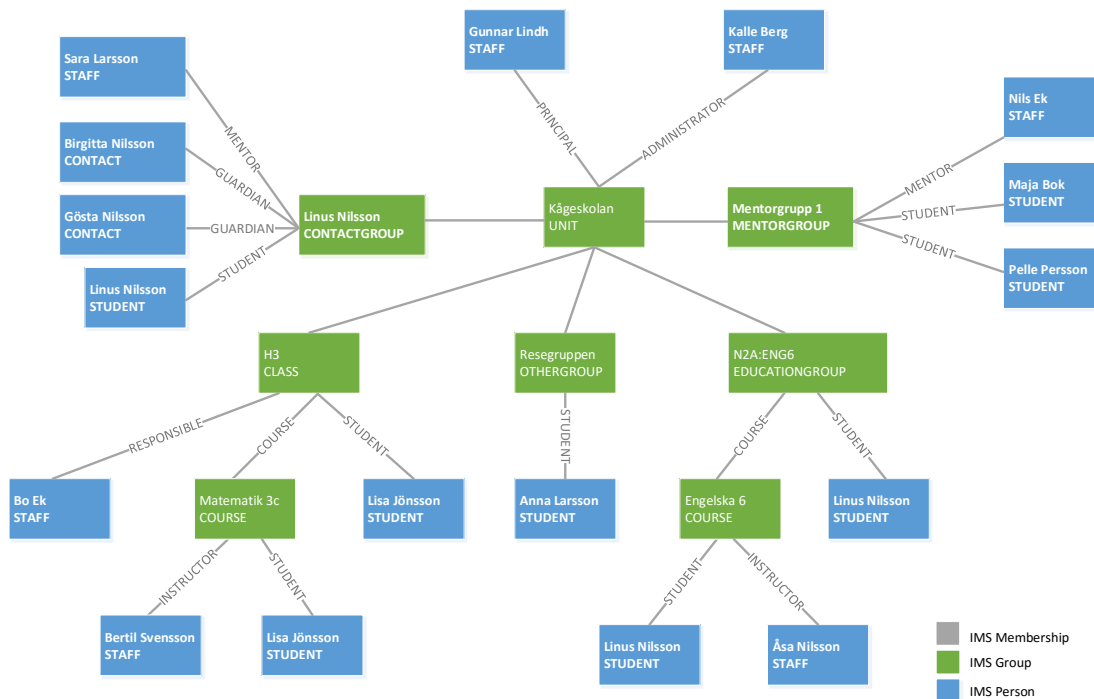
4 Entities

4.1 Properties

The delivery information of the IMS Enterprise packaging that is used to manage the exchange of data between source and target system.

Name	Description
datasource	This is the source identifier of data source, for export the source contains customer domain and school type.
comments	Input values for the service.
type	Complete export, Delta export, Get units
datetime	The date and time the XML information were generated. The format is as [YYYY-MM-DDTHH:MM:SS]
schooltype	Exported schooltype

4.2 IMS Person

The person object contains information about child, students, professionals and contact persons in Tietos Student management system. All persons are identified with a personal identity and Globally Unique Identifier (GUID). The personal identity could be temporary or generated from Skatteverket, for more information see www.skatteverket

4.2.1 Person attributes

Name	Description	Read-only
sourcedid.id	The persistent unique identity of the person	Yes
userid.value	Alternative unique identifiers of the person	Yes
userid.useridtype	Enumerated as PID, GUID	Yes
name.fn	Formatted name	Yes
name.n.given	The given name and not necessarily the first name	No
name.n.family	This is the family name and not necessarily the last name	No
email	Email home address	No
tel	Phone numbers	No
tel.teltype	Identifies the type of telephone number. Enumerated as Voice, Mobile and Work where Voice is home phone.	No
adr.pcode	The post identity number	No
adr.street	The actual street address	No
adr.locality	The locality component of the address e.g., the City	No

Name	Description	Read-only
adr.extadd	C/O address	No
demographics.bday	The birth date of the Person. The format is [YYYY-MM-DD]	Yes
demographics.gender	The gender of the Person. This is enumerated as Unknown, Female and Male	Yes
institutionrole.institutionroletype	The role of the Person within the institution. This is enumerated as Student, Staff, Contact, Child	Yes
institutionrole.primaryrole	Identifies if the associated role is the primary one for the Person in the institution. Enumerated as Yes, No	Yes
systemrole.systemroletype	The role of the person within the software environment. The value is always None	Yes
datasource	Source for address information. SKV "Skatteverket"	Yes
recstatus	Indicator whether the person is added(1), updated(2) or deleted(3). This attribute is only valid in delta services.	Yes

4.2.2 Person extensions

Common extended properties for all persons

Name	Description	Read-only
privacy	The person has restrictions. This is enumerated as None, Level1. Level1 means privacy highlighted by the "Skatteverket".	Yes
geographickeycode	Geographic key code	No
municipalitycode	Municipality code, formatted [NNNN], for more information see www.skl.se	No
municipalityname	Municipality name	Yes
timestamp	Date and time when person is created updated or deleted.	Yes
status	Source for address information. Normal The person is alive and lives in Sweden Deceased The person has deceased Emigrated The person has emigrated	Yes

4.2.3 Person extension for students

Extended properties for students

Name	Description	Read-only
nativelanguage	Native language, formatted as longer a form of language name	Yes

Name	Description	Read-only
programcode	Code for study for upper secondary school and higher vocational education, formatted [AAAAAAAAA], for more information see www.skolverket.se	Yes
schoolunitcode	School unit code	Yes
altadr.pcode	The post identity number for alternative address	Yes
altadr.street	The actual street address for alternative address	Yes
altadr.locality	The locality component of the address, e.g., the City, for alternative address	Yes
altadr.extadd	C/O address for alternative address	Yes

4.2.4 Person extensions for staff

Extended properties for staff

Name	Description	Read-only
employmentstart	Employment starts date	Yes
employmentend	Employment end date	Yes
signature	Short name signature for the teacher	Yes
emailwork	E-mail address for professional work	No

4.3 IMS Group

Group is used for school units, classes, programs, courses, subjects, education groups and other groups. Depending on school type, some groups exist only for a particular school type.

This implementation does not attribute relationship for group relations to other groups. All group and person relations are described by memberships.

Groups can have extensions depending on group type.

Name	Description	Read-only
sourcedid.id	The persistent unique identity of the group	Yes
description.short	Group code or name.	Yes
grouptype.typevalue	The container for the type classification being assigned to the group. This is enumerated as Unit, Class, Subject, Course, OtherGroup, EducationGroup, ContactGroup, MentorGroup, Department and DepartmentGroup	Yes

Name	Description	Read-only
grouptype.typevalue.level	The parameter is always set to "1"	Yes
timeframe.begin	Defines when a group is intended to be available. Formatted as [YYYY-MM-DD]. The parameter is used for Unit, Department, DepartmentGroup, Class, EducationGroup. The parameter is not used for Subject, Course, ContactGroup and MentorGroup The begin date is included in the timeframe.	Yes
timeframe.end	Defines when group is intended to end. Formatted as [YYYY-MM-DD]. The end date is included in the timeframe.	Yes
recstatus	Indicator whether the group is added(1), updated(2) or deleted(3). This attribute is only valid in delta services.	Yes

4.3.1 Group extensions

Common extended properties for all groups

Name	Description	Read-only
timestamp	Date and time when group is created updated or deleted.	Yes

4.3.2 Group extensions for course

Extended properties for education courses for upper secondary school and adult education

Name	Description	Read-only
coursecode	School course code, formatted [AAAAAAAAAA]. For more information see www.skolverket.se	Yes
hours	Education total hours for the course	Yes
subjectcode	Subject code	Yes
subjectname	Subject name	Yes

4.3.3 Group extensions for subject

Extended properties for education subjects for preschool class and compulsory school

Name	Description	Read-only
subjectcode	School subject code, formatted [AAA]. For more information see www.skolverket.se	Yes
languagecode	Språkkod, språkkoderna är hämtade från den internationella språkstandarden (ISO 639-3).	Yes

4.3.4 Group extensions for class

Extended properties for school classes

Name	Description	Read-only
schoolyear	School year. In case of a mixed class (with more than one school year) the value of this attribute is a range in the format "<startyear>-<endyear>".	Yes

4.3.5 Group extensions for other groups

Extended properties for non-education groups

Name	Description	Read-only
groupusage	The group usage, e.g. group for bus tickets	Yes

4.3.6 Group extension for units

Extended properties for units from preschool to higher vocational education

Name	Description	Read-only
schooltype	School types at the unit, for more information see defined school types in this documentation.	Yes
csncode	CSN code for schools in Sweden, for more information see www.csn.se	Yes
governedby	Owns and manages the business for this group. This is enumerated as Private, Municipal and State	Yes
phone	Phone number to school office	No
pcode	The post identity number	No
street	The actual street address	No
locality	The locality component of the address e.g., the City	No
web	The school web address	No
municipalitycode	Municipality code, formatted [NNNN], for more information see www.skl.se	Yes
municipalityname	Municipality name	Yes
period	Periods defined on the unit	Yes
period.type	Type of period.	Yes
period.start	Start date for period	Yes
period.end	End date for period	Yes

Name	Description	Read-only
geographickeycode	Geographic key code. This is only used for preschool, leisure time centre, preschool class, compulsory school and compulsory school for learning disabilities.	Yes
id	Unit id	Yes
officialunitname	Official unit name	No

4.3.7 Group extension for departments

There are no other extensions for departments than what is mentioned in chapter 4.3.1

4.3.8 Group extension for department groups

There are no other extensions for department groups than what is mentioned in chapter 4.3.1.

4.4 IMS Membership

The membership structure is used to define the members of a group or personal relations. A member can be a person or another group.

4.4.1 Membership attributes

Name	Description	Read-only
complete	This is a Boolean flag	Yes
sourcedid.id	This is the persistent unique identifier assigned to the group structure for which the memberships are being defined.	Yes
member.sourcedid.id	This is the unique identifier assigned to the group structure which is the member of the host group	Yes
member.idtype	Indicates if the Member is a person or another group. Enumerated as Person or Group.	Yes
member.role.status	Indicates if a member is active or inactive in the group. The value is always set to "Active".	Yes
member.role.roletype	The member's function within a group. The content is enumerated as: Instructor, Mentor, Administrator, Guardian, Contact, OtherResponsible, Child, Student, Principal, GradeAuthority, Unit, Class, Subject, Course, OtherGroup, EducationGroup, ContactGroup, MentorGroup, Department, DepartmentGroup and Responsible	Yes

Name	Description	Read-only
member.role.timeframe.begin	Defines when a group is intended to be available for a person or a group. Formatted as [YYYY-MM-DD]. The time frame is within the timeframe for the group that owns the membership.	Yes
member.role.timeframe.end	Defines when group participation for a person or a group is intended to end. Formatted as [YYYY-MM-DD]. The time frame is within the timeframe for the group that owns the membership.	Yes
member.role.recstatus	Indicator whether the role is added(1), updated(2) or deleted(3). This attribute is only valid in delta services.	Yes

4.4.2 Membership extensions

Common extended properties for members in memberships

Name	Description	Read-only
timestamp	Date and time when member in membership is created updated or deleted.	Yes
schoolyear	School year. It is set in class-student relations	Yes
schoolunitcode	School unit code. It is set in unit-principal relations. The schoolunitcode property contains codes for all school units the principal is responsible for.	Yes

5 Services

All services are based on HTTP REST technology and organized in school types to match each school structure. "Update services" are using the method HTTP POST and "Get services" are using the method HTTP GET.

5.1 Complete Export of organization

These services return the complete organization at a specific time. All services are using current time as default value for search date identified. By using search date you can get the organization from past or future.

Base path for services are:
https://[host]/WE.Education.Integration.Host/LES/Organization/V1/Organization.svc

Parameters – Alternative 1:

Parameter	Mandatory	Description
SearchDate	No	The search date. Current date will be used if SearchDate is not specified. The oldest search date that can be used is current date minus eight years.

Parameters – Alternative 2:

Parameter	Mandatory	Description
UnitId	Yes	Id for the school unit. Organization for all school units will be returned if UnitId is not specified.
SearchDate	No	The search date. Current date will be used if SearchDate is not specified. The oldest search date that can be used is current date minus eight years.

Parameters – Alternative 3:

Parameter	Mandatory	Description
PersonId	Yes	The id can be GUID or PID for the student.
SearchDate	No	The search date. Current date will be used if SearchDate is not specified. The oldest search date that can be used is current date minus eight years.

Services:

Service	Description
GetPedagogicalCareOrganization	Organization for pedagogical care.
GetPreSchoolOrganization	Organization for preschool.
GetLeisureTimeCentreOrganization	Childcare organization for leisure time centre.
GetPreSchoolClassOrganization	Organization for preschool class
GetCompulsorySchoolOrganization	Organization for compulsory schools.
GetCompulsorySchoolForLearningDisabilitiesOrganization	Organization for compulsory school with learning disabilities.
GetUpperSecondarySchoolOrganization	Organization for upper secondary school.
GetUpperSecondarySchoolForLearningDisabilitiesOrganization	Organization for upper secondary school with learning disabilities.
GetSwedishForImmigrantsSchoolOrganization	Organization for Swedish for immigrants.
GetMunicipalAdultSchoolOrganization	Organization for municipal adult school.
GetAdultSchoolForLearningDisabilitiesOrganization	Organization for adult school with learning disabilities.
GetHigherVocationalEducationOrganization	Organization for higher vocational education.

5.2 Delta Export of organization

These services give the organizational changes done within a specified timeframe. The output is XML information with changed organization entities. For each changed entity the attribute "recstatus" is used to indicate the type of change. The attribute "recstatus" is enumerated as 1=Add, 2=Update and 3=Delete. When deleting a group or person only the deleted entity is indicated as deleted, no cascading deletes for memberships are reported. All changed entities have a timestamp stored in the extension attribute "timestamp" for all entities to secure information quality.

When person is updated the institution role type may be empty.

By examining the attribute "complete" (which is false by default) on the memberships, the client can determine whether the members are the complete set of members within the membership (complete = true), or just the differences due to events occurring during the specified timeframe (complete = false),

Base path for services are:
https://[host]/WE.Education.Integration.Host/LES/Organization/V1/Organization.svc

Parameters:

Parameter	Mandatory	Description
StartDate	Yes	Start date&time
EndDate	Yes	End date&time

Parameter value limitations:

- EndDate – StartDate >= 5 minutes

- EndDate – StartDate <= 24 hours

- Current time – EndDate >= 5 minutes

Services:

Service	Description
GetUpperSecondarySchoolOrganizationDelta	Organization delta for upper secondary school.
GetUpperSecondarySchoolForLearningDisabilitiesOrganizationDelta	Organization delta for upper secondary school with learning disabilities.
GetSwedishForImmigrantsSchoolOrganizationDelta	Organization delta for Swedish for immigrants school.
GetMunicipalAdultSchoolOrganizationDelta	Organization delta for municipal adult school.
GetAdultSchoolForLearningDisabilitiesOrganizationDelta	Organization delta for adult school with learning disabilities.
GetHigherVocationalEducationOrganizationDelta	Organization delta for higher vocational education.

5.2.1 Use Cases
Some use cases for delta export:

Organization change	Indicated with
New school unit and unit domain	- IMS group for the school unit (recstatus = 1)
Updated school unit or unit domain	- IMS group with new unit information (recstatus = 2)
New class	- IMS group for the class (recstatus = 1) - IMS membership for unit with the education group as member
Update class	- IMS group for the class (recstatus = 2)
Delete class	- IMS group for the class (recstatus = 3)
New education group	- IMS group for the education group (recstatus = 1) - IMS membership for unit with the education group as member
Update education group	- IMS group for the education group (recstatus = 2)
Delete education group	- IMS group for the education group (recstatus = 3)
New other group	- IMS group for the other group (recstatus = 1) - IMS membership for unit with the other group as member
Update other group	- IMS group for the other group (recstatus = 2)

Organization change	Indicated with
Delete other group	- IMS group for the other group (recstatus = 3)
New contact for student	- IMS membership for the student's contact group (complete = true) - IMS persons for all contact persons - IMS group for contact group - IMS membership for unit with contact group as member
Update information on contact person	- IMS person for student with updated contact person - IMS persons for all contact persons - IMS group for contact group - IMS membership for unit with contact group as member - IMS membership for the contact group (complete = true)
Remove contact for student	- Complete IMS membership for the students contact group (complete = true) - IMS persons for all contact persons - IMS group for contact group - IMS membership for unit with contact group as member
New student in class	- IMS person for student - IMS group for course - IMS membership for the class with the student and course as member - IMS membership for the course with the student as member (recstatus = 1) - IMS persons for all contact persons - IMS group for contact group - IMS membership for unit with contact group as member - IMS membership for the contact group (complete = true)
Updated student in class	- IMS person for student - IMS membership for the class with the student and course as member (recstatus = 2) - IMS membership for the course with the student as member (recstatus = 2) - IMS persons for all contact persons - IMS group for contact group - IMS membership for unit with contact group as member - IMS membership for the contact group (complete = true)
Remove student from class	- IMS membership for the class with the course as member - IMS membership for the course with the student as member (recstatus = 3)
New student in education group	- IMS person for student - IMS group for course - IMS membership for the education group with the student and course as member - IMS membership for the course with the student as member (recstatus = 1) - IMS persons for all contact persons - IMS group for contact group - IMS membership for unit with contact group as member - IMS membership for the contact group (complete = true)

Organization change	Indicated with
Updated student in education group	- IMS person for student - IMS membership for the education group with the student and course as member (recstatus = 2) - IMS membership for the course with the student as member (recstatus = 2) - IMS persons for all contact persons - IMS group for contact group - IMS membership for unit with contact group as member - IMS membership for the contact group (complete = true)
Remove student in education group	- IMS membership for the education gropu with the course as member - IMS membership for the course with the student as member (recstatus = 3)
New teacher in class	- IMS person for teacher - IMS group for course - IMS membership for the class with the course as member - IMS membership for the course with the teacher as member (recstatus = 1)
Updated teacher in class	- IMS person for teacher - IMS membership for the class with the course as member (recstatus = 2) - IMS membership for the course with the teacher as member (recstatus = 2)
Remove teacher from class	- IMS membership for the class with the course as member - IMS membership for the course with the teacher as member (recstatus = 3)
New class responsible	- IMS person for responsible - IMS membership for the class with the responsible as member (recstatus = 1)
Update class responsible	- IMS person for responsible - IMS membership for the class with the responsible as member (recstatus = 2)
Remove class responsible	- IMS membership for the class with the responsible as member (recstatus = 3)
New teacher in educations group	- IMS person for teacher - IMS group for course - IMS membership for the education group with course as member - IMS membership for the course with the teacher as member (recstatus = 1)
Update teacher in education group	- IMS person for teacher - IMS membership for the education group with course as member (recstatus = 2) - IMS membership for the course with the teacher as member (recstatus = 2)

Organization change	Indicated with
Remove teacher from education group	- IMS membership for the education group with the course as member - IMS membership for the course with the teacher as member (recstatus = 3)
Change principal for unit	- IMS person for the principal - Complete IMS membership for the unit (complete=true)

5.3 Get Units

These services return the units for a specific school type.

Base path for services are:
https://[host]/WE.Education.Integration.Host/LES/Organization/V1/Organization.svc

Parameters:

Parameter	Mandatory	Description
SearchDate	No	The search date. Current date will be used if SearchDate is not specified. The oldest search date that can be used is current date minus eight years.

Services:

Service	Description
GetPedagogicalCareUnits	Units for pedagogical care.
GetPreSchoolUnits	Units for preschool.
GetLeisureTimeCentreUnits	Units for leisure time centre.
GetPreSchoolClassUnits	Organization for preschool class
GetCompulsorySchoolUnits	Organization for compulsory schools.
GetCompulsorySchoolForLearningDisabilitiesUnits	Organization for compulsory school with learning disabilities.
GetUpperSecondarySchoolUnits	Organization for upper secondary school.
GetUpperSecondarySchoolForLearningDisabilitiesUnits	Organization for upper secondary school with learning disabilities.
GetSwedishForImmigrantsSchoolUnits	Organization for Swedish for immigrants.
GetMunicipalAdultSchoolUnits	Organization for municipal adult school.
GetAdultSchoolForLearningDisabilitiesUnits	Organization for adult school with learning disabilities.
GetHigherVocationalEducationUnits	Organization for higher vocational education.

5.4 Import of organization

The services update the school organization. The services using IMS "recstatus" attribute on entities to identify transaction types, enumerated as 1=Add, 2=Update and 3=Delete. When persons are populated from Skatteverket all address information are read-only. The services take no parameters.

Base path for services are:
https://[host]/WE.Education.Integration.Host/LES/Organization/V1/Organization.svc

Services:

Service	Description
UpdatePedagogicalCareOrganization	Update organization for pedagogical care.
UpdatePreSchoolOrganization	Update organization for pre-school.
UpdateLeisureTimeCentreOrganization	Update organization for leisure time centre.
UpdatePreSchoolClassOrganization	Update organization for preschool class.
UpdateCompulsorySchoolOrganization	Update organization for compulsory school
UpdateCompulsorySchoolForLearningDisabilitiesOrganization	Update organization for compulsory school for learning disabilities.
UpdateUpperSecondarySchoolOrganization	Update organization for secondary school.
UpdateUpperSecondarySchoolForLearningDisabilitiesOrganization	Update organization for upper secondary school for learning disabilities.
UpdateSwedishForImmigrantsSchoolOrganization	Update organization for SFI schools
UpdateMunicipalAdultSchoolOrganization	Update organization for municipal adult education
UpdateAdultSchoolForLearningDisabilitiesOrganization	Update organization for adult school for learning disabilities.
UpdateHigherVocationalEducationOrganization	Update organization for higher vocational education.

6 Appendix

6.1 References

Name	Address
IMS Enterprise Information Model	http://www.imsglobal.org/enterprise/entv1p1/imsent_infov1p1.html
IMS Enterprise XML Binding Specification	http://www.imsglobal.org/enterprise/entv1p1/imsent_bindv1p1.html
IMS Enterprise Best Practices and Implementation Guide	http://www.imsglobal.org/enterprise/entv1p1/imsent_bestv1p1.html
Organization API XML schemas and examples	https://github.com/ExchangeServices

6.2 Vocabulary

Word	Description
Mentor	School mentor for student
Instructor	Teacher
Guardian	Guardian is the person who has legal custody for a child. It can be either one or both parents or a person designated by the court
Contact	Student contacts
Other responsible	Other responsible to children below 18 years, for example foster parents
Child	Children below 6 year
Student	School student 6 year and older
Administrator	School administrator
PID	Personal identity, formatted [YYYYMMDDNNNN]
GUID	Global unique identifier
Other group	Non education groups
Education group	Student groups related to education course or subject depending on school types
Principal	Director of schools