

Technical Specification

Outcome API

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1 Introduction

The Outcome API provides services that make it possible to get and set the students outcome, i.e. grades, assessments and national tests. The services in the Outcome API are accessed via URIs.

This document describes following:

- Which grade, assessment and national test information that a user can get and set via the Outcome API.
- How the grade, assessment and national test information is divided into entities and how these entities are structured.

1.1 Prerequisites

Before you can get access to the Outcome API you must request a license key from Tieto. You should have basic knowledge on Swedish school system and W3C XML before you start using the API.

2 Supported school types

The table below describes the supported types of school.

School type	Description	Code
Compulsory School	Primary school organization for younger students	GR
Compulsory School For Learning Disabilities	Organization for compulsory school for learning disabilities	S
Upper Secondary School	Secondary school organization 3-4 years education	GY
Upper Secondary School For Learning Disabilities	Organization for secondary school for learning disabilities	GS
Swedish For Immigrants School	Organization for Swedish immigrants	SF
Adult School For Learning Disabilities	Organization for adult school for learning disabilities	SV
Municipal Adult School	Municipality school organization for adults	KV
Higher Vocational Education	Organizations for Higher Vocational Education	YH

3 Grade reports

3.1 Outcome

3.1.1 Supported outcome for the different school types

This chapter describes the supported outcome for the different types of school.

School type	Outcome
Compulsory School	Final report, Semester report
Compulsory School For Learning Disabilities	Final report, Semester report
Upper Secondary School	Diploma certificate report, Study certificate report, Catalog extraction report, Upper secondary school certificate report
Upper Secondary School For Learning Disabilities	Diploma certificate report, Catalog extraction report
Swedish For Immigrants School	Catalog extraction report
Adult School For Learning Disabilities	Catalog extraction report
Municipal Adult School	Diploma certificate report, Study certificate report, Catalog extraction report
Higher Vocational Education	Diploma certificate report, Study certificate report, Catalog extraction report

3.1.2 Final report

Final report is given to students who finish the ninth grade at compulsory school and compulsory school for learning disabilities.

3.1.3 Semester report

Semester report is given to students twice a year, at the end of each semester. The first semester report is given at the end of the first semester in the sixth grade. The last semester report is given at the end of the first semester in the ninth grade.

The semester report is used for compulsory school and for compulsory school for learning disabilities.

3.1.4 Diploma certificate report

Diploma certificate report is given to students finishing last grade, with approved study result.

3.1.5 Study certificate report

Study certificate report is given to students finishing last grade, with not approved study result.

3.1.6 Catalog extraction report

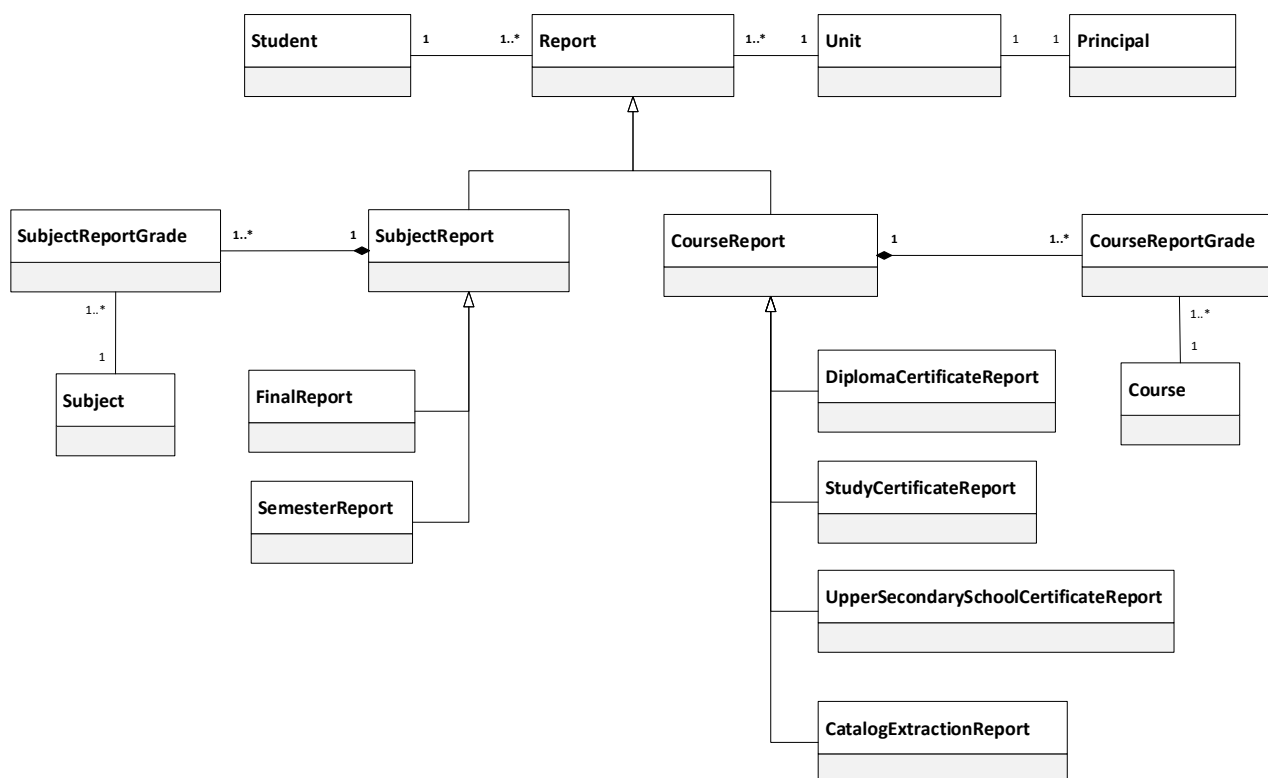
A catalog extraction report contains the grades that have been set for a student at the time the catalog extraction report was created.

3.1.7 Upper secondary school certificate report

Upper secondary school certificate report is given to students that have finished an introduction program at upper secondary school.

3.2 Domain model

The diagram below describes how the grade information is divided into entities and how these entities are structured. The entities are grouped into course and subject oriented grades.



3.3 Entities

3.3.1 Report

Name	Description	Read-only
date	Date and time for the report	No
unit	The issuing unit	No
student	Student	No

3.3.2 SubjectReport

Name	Description	Read-only
schoolyear	School year for report	No

3.3.3 SubjectReportGrade

Name	Description	Read-only
subject	SCB subject code	No
grade	Grade for the subject	Yes
finalgrade	Indicates if the subject grade refers to a final grade, enumerated as True, False. (This attribute is only used for semester reports.)	Yes
trialperformed	Indicates that a trial of the subject knowledge has been performed	Yes
remark	Indicates eventual remark of the grade. Is an enumeration. (This attribute is only used for semester reports.) AdaptedStudyPlan Adapted study plan GradeNotSet77 Goal not reached according to Grf 7:7 GradeNotSet1018 No grade set, Education Act 10:18 GradeNotSet1120 No grade set, Education Act 11:20 Unknown Other remark	Yes
period	Period when grade was set as finalgrade	Yes

3.3.4 FinalReport

Name	Description	Read-only
grades	One or more subject report grades	No

3.3.5 SemesterReport

Name	Description	Read-only
semester	Autumn or spring semester	No
absence	Total absence in hours for the student	No
grades	One or more subject report grades	No

3.3.6 CourseReport

Name	Description	Read-only
program	The program code	No
basiceligibility	Basic eligibility	No

3.3.7 CourseReportGrade

Name	Description	Read-only
course	SCB course code	No
grade	Grade for the course	Yes
trialperformed	Indicates that a trial of the course knowledge has been performed	Yes
date	Grade date	Yes
courselevel	Level of course	Yes

3.3.8 DiplomaCertificateReport

Name	Description	Read-only
grades	One or more course report grades	No

3.3.9 StudyCertificateReport

Name	Description	Read-only
grades	One or more course report grades	No

3.3.10 UpperSecondarySchoolCertificateReport

Name	Description	Read-only
grades	One or more course report grades	No

3.3.11 CatalogExtractionReport

Name	Description	Read-only
grades	One or more course report grades	Yes
absence	Total absence in hours for the student	Yes

Comment: Since all attributes are read-only, the whole CatalogExtractionReport is read-only and therefore import of CatalogExtractionReport is not supported.

3.3.12 Unit

Name	Description	Read-only
id	Id for the unit	No
schoolname	School name	Yes
schoolunitcode	School unit code	Yes
schoolunitname	School unit name	Yes
schooltype	School type, see supported school types	Yes
principal	Principal	Yes

3.3.13 Principal

Name	Description	Read-only
id	Principal identity	No
name	Principal name	Yes

3.3.14 Student

Name	Description	Read-only
id	Student identity. The id can be GUID or PID for the student.	No
name	Student name	Yes

3.3.15 Assessor

Name	Description	Read-only
id	Assessor identity	No
name	Assessor name	Yes

3.3.16 Course

Name	Description	Read-only
code	Course code	No
name	Course name	Yes

Name	Description	Read-only
points	Total number of points for the course	Yes

3.3.17 Subject

Name	Description	Read-only
code	Subject code	No
name	Subject name	Yes

4 Grades

4.1 GradeOutcome

4.1.1 Supported outcome for the different school types

This chapter describes the supported outcome for the different types of school.

School type	Outcome
Compulsory School	Grade outcome with subject grades
Compulsory School For Learning Disabilities	Grade outcome with subject grades
Upper Secondary School	Grade outcome with course grades
Upper Secondary School For Learning Disabilities	Grade outcome with course grades
Swedish For Immigrants School	Grade outcome with course grades
Adult School For Learning Disabilities	Grade outcome with course grades
Municipal Adult School	Grade outcome with course grades
Higher Vocational Education	Grade outcome with course grades

4.1.2 Subject outcome

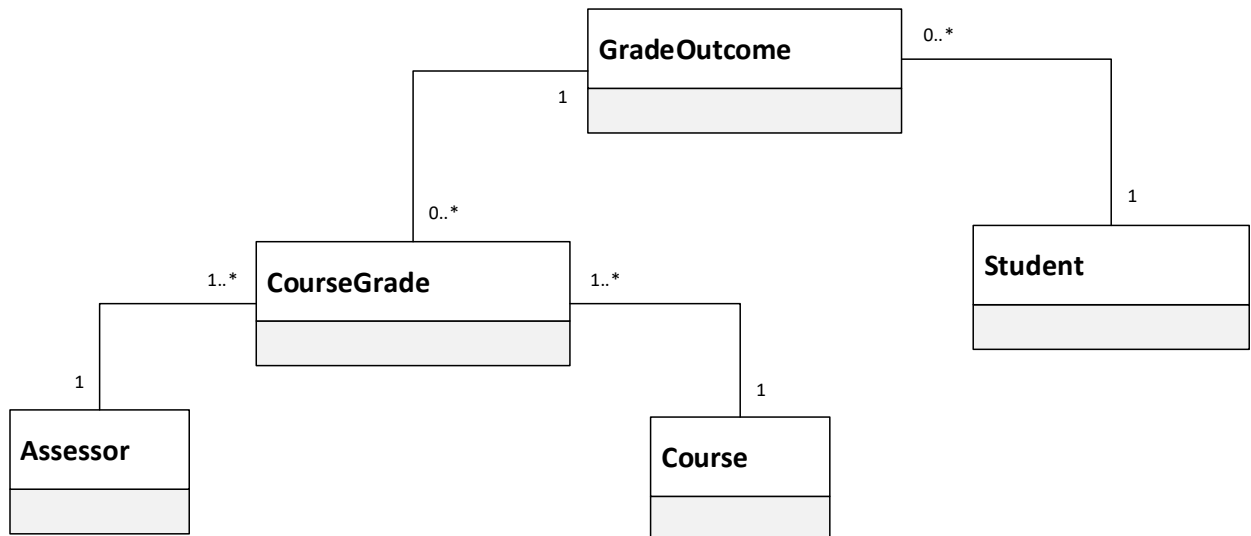
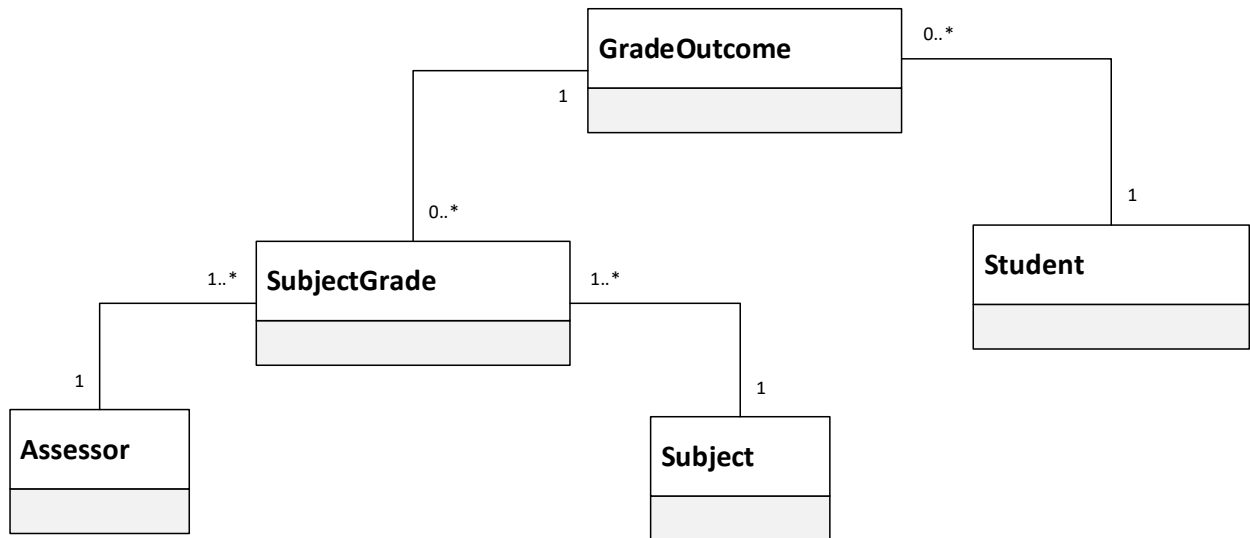
A student's grades in a subject

4.1.3 Course grade

A student's grades in a course

4.2 Domain model

The diagram below describes how the grades information is divided into entities and how these entities are structured.



4.3 Entities

4.3.1 GradeOutcome

Name	Description	Read-only
student	Student	No
subjectgrade	The students subject grades	No
coursegrade	The students course grades	No
complete	If all the students grades are in the list	No

4.3.2 SubjectGrade

Name	Description	Read-only
assessor	Assessor for the subject	No
unitid	Unit id, use EXTERNAL for external grades	No
schoolname	School name	Yes
subject	Subject	No
grade	Grade for the subject	No
finalgrade	Indicates if the subject grade refers to a final grade, enumerated as True, False. (This attribute is only used for semester reports.)	No
trialperformed	Indicates that a trial of the subject knowledge has been performed	No
remark	Indicates eventual remark of the grade. Is an enumeration. (This attribute is only used for semester reports.) AdaptedStudyPlan Adapted study plan GradeNotSet77 Goal not reached according to Grf 7:7 GradeNotSet1018 No grade set, Education Act 10:18 GradeNotSet1120 No grade set, Education Act 11:20 Unknown Other remark	No The value Unknown is not allowed when Updating grades.
remarkname	If remark has the value Unknown, the name of the remark is shown here	Yes
date	The date when the grade is set	No
semester	The semester the grade belongs to	No

4.3.3 CourseGrade

Name	Description	Read-only
assessor	Assessor for the course	No
unitid	Unit id, use EXTERNAL for external grades	No
schoolname	School name	Yes
groupid	Group id	No
course	Course	No
grade	Grade for the course	No
trialperformed	Indicates that a trial of the course knowledge has been performed	No
date	Grade date	No

4.3.4 Student

Name	Description	Read-only
id	Student identity. The id can be GUID or PID for the student.	No

Name	Description	Read-only
name	Student name	Yes

4.3.5 Assessor

Name	Description	Read-only
id	Assessor identity	No
name	Assessor name	Yes

4.3.6 Course

Name	Description	Read-only
code	Course code	No
name	Course name	Yes
points	Total number of points for the course	Yes

4.3.7 Subject

Name	Description	Read-only
code	Subject code	No
recommendedsubjectcode	Generated scbcode for subject	No
name	Subject name	Yes

4.3.8 Semester

Name	Description	Read-only
type	Enumerated value describing the semester: VT first half of the year HT second half of the year	No
year	The year of the semester. Format YY or YYYY	No

5 Assessment

5.1 AssessmentOutcome

5.1.1 Supported outcome for the different school types

This chapter describes the supported outcome for the different types of school.

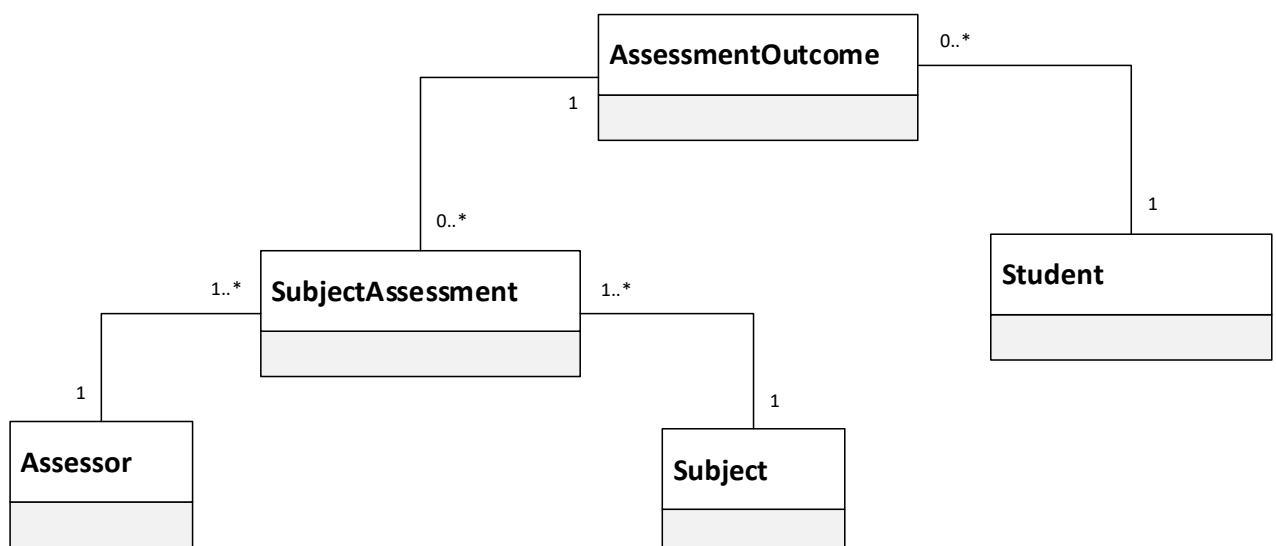
School type	Outcome
Swedish For Immigrants School	Assessment outcome with course assessment
Adult School For Learning Disabilities	Assessment outcome with course assessment
Municipal Adult School	Assessment outcome with course assessment
Higher Vocational Education	Assessment outcome with course assessment

5.1.2 Course assessment

A student's assessment in a course

5.2 Domain model

The diagram below describes how the assessment information is divided into entities and how these entities are structured.



5.3 Entities

5.3.1 AssessmentOutcome

Name	Description	Read-only
student	Student	No
courseassessment	The students course assessments	No
complete	If all the students grades are in the list	No

5.3.2 CourseAssessment

Name	Description	Read-only
assessor	Assessor for the course	No
unitid	Unit id, use EXTERNAL for external assessments	No
schoolname	School name	Yes
groupid	Group id	No
course	Course	No
assessment	Assessment for the course	No
date	Assessment date	No

5.3.3 Student

Name	Description	Read-only
id	Student identity. The id can be GUID or PID for the student.	No
name	Student name	Yes

5.3.4 Assessor

Name	Description	Read-only
id	Assessor identity	No
name	Assessor name	Yes

5.3.5 Course

Name	Description	Read-only
code	Course code	No
name	Course name	Yes
points	Total number of points for the course	Yes

6 National tests

6.1 NationalTestOutcome

6.1.1 Supported outcome for the different school types

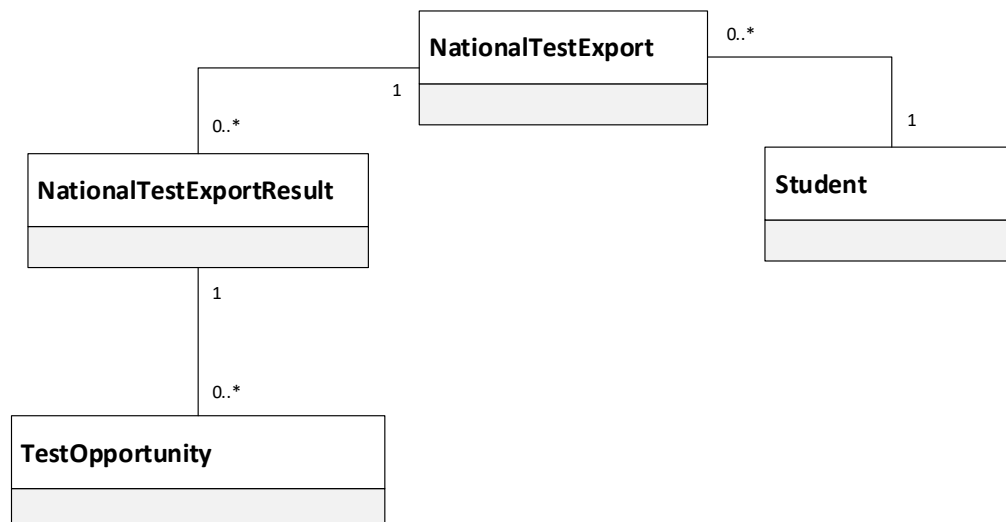
This chapter describes the supported outcome for the different types of school.

School type	Outcome
Compulsory School	NationalSubjectTest
Upper Secondary School	NationalCourseTest
Swedish For Immigrants School	NationalCourseTest
Municipal Adult School	NationalCourseTest

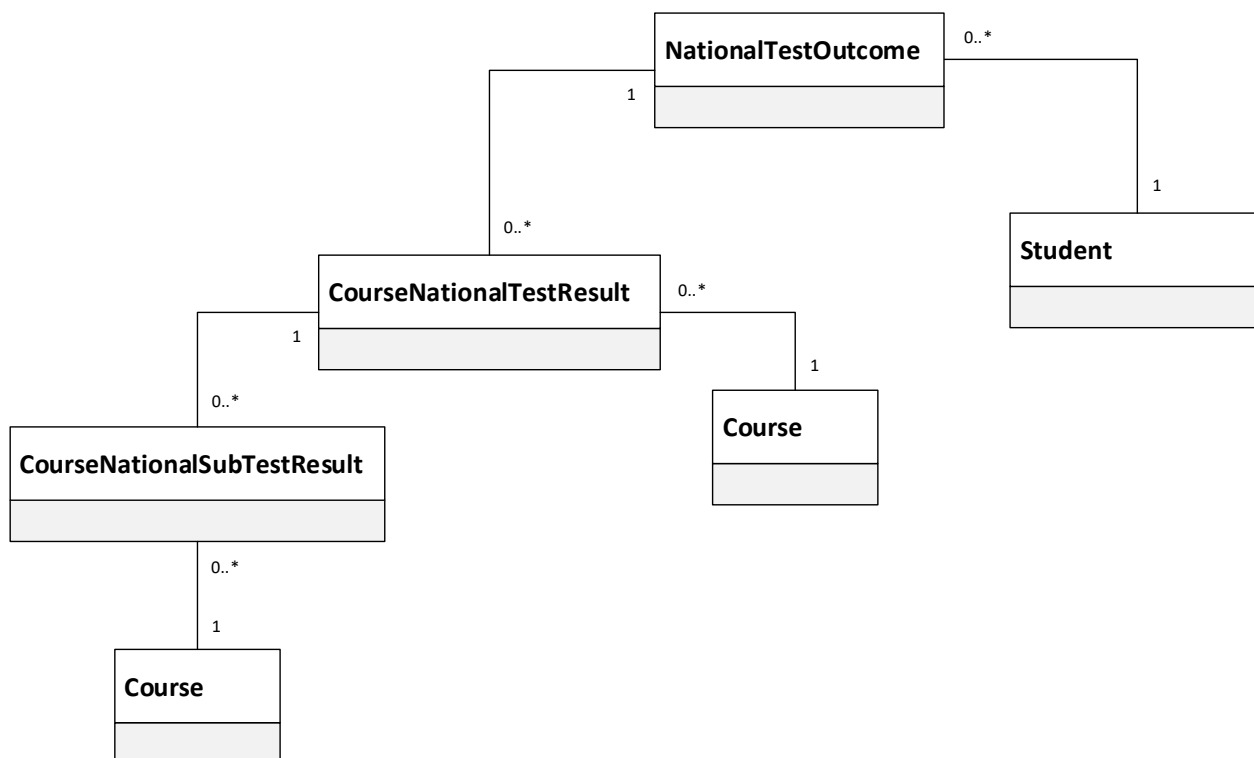
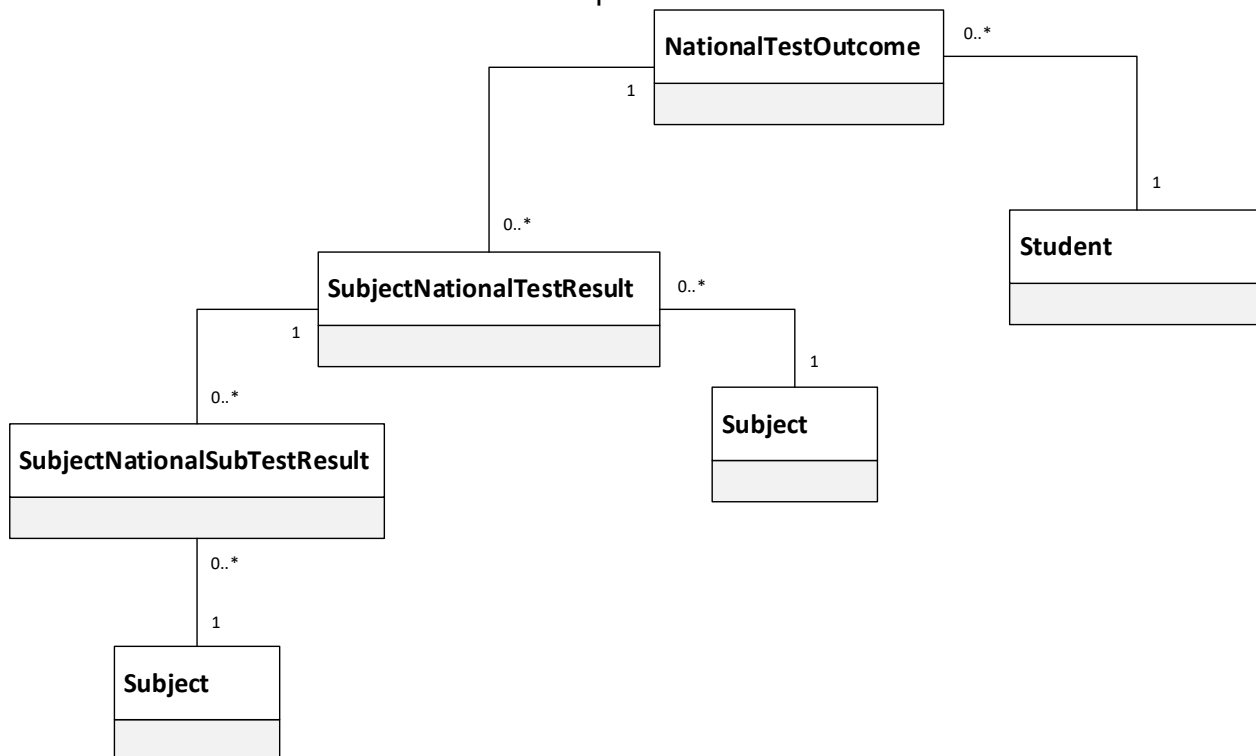
6.2 Domain model

The diagrams below describe how the national test information is divided into entities and how these entities are structured.

6.2.1 Domain model for National Tests registered in Tieto Education



6.2.2 Domain model for National Tests imported into Tieto Education



6.3 Entities

6.3.1 NationalTestOutcome

Name	Description	Read-only
student	Student	No
coursenationaltest	The students national test course results (valid for GY, KV and SF)	No
subjectnationaltest	The students national test subject results (valid for GR)	No
complete	If all the student's results are in the list	No

6.3.2 SubjectNationalTestResult

Name	Description	Read-only
subject	SCB subject code	No
subtestresult	A list of sub test results	No
registrationdate	Date when test result is registered	No
schoolyear	The school year in which the national test was performed.	No
grade	Grade for the national test	No
Participated	Indicator whether the student participated in the test	No

6.3.3 SubjectNationalSubTestResult

Name	Description	Read-only
Points	Points of the subtest	No
Type	The type of the test, enumerated as Read, Speak, Write, Listen, A, B, ..., H	No
Grade	Grade for the national sub test	No
Status	Status of the subtest, enumerated as approved, notapproved, notparticipated and lost	No

6.3.4 CourseNationalTestResult

Name	Description	Read-only
course	SCB course code	No

Name	Description	Read-only
subtestresult	A list of sub test results	No
registrationdate	Date when test result is registered	No
grade	Grade for the national test	No
participated	Indicator whether the student participated in the subtest	No

6.3.5 CourseNationalSubTestResult

Name	Description	Read-only
points	Points of the subtest	No
type	The type of the test, enumerated as Read, Speak, Write, Listen, A, B, ..., H	No
grade	Grade for the national sub test	No
status	Status of the subtest, enumerated as approved, notapproved, notparticipated and lost	No

6.3.6 Student

Name	Description	Read-only
id	Student identity. The id can be GUID or PID for the student.	No
name	Student name	Yes

6.3.7 Course

Name	Description	Read-only
code	Course code	No
name	Course name	Yes
points	Total number of points for the course	Yes

6.3.8 Subject

Name	Description	Read-only
code	Subject code	No
name	Subject name	Yes

6.3.9 Testopportunity

Name	Description	Read-only
description	A description of the test opportunity	Yes
result	Value for this test opportunity. Follows the rules of the SCB file for the period. An example can be 99 for did not participate	Yes
resulttype	A textual description of the type of the result	Yes
scbexportorder	The column order in SCB export file. Order is only relevant within a single subject.	Yes

6.3.10 NationalTestExportResult

Name	Description	Read-only
periodstart	Start date of the period associated to the national test	Yes
periodend	End date of the period associated to the national test	Yes
periodname	Name of the period associated to the national test	Yes
coursecode	The official course code the student is studying when taking the test. Not used for compulsory	Yes
subjectcode	The subject code the student is studying when taking the test. Used for compulsory only	Yes
schoolyear	Only for compulsory, 3, 6 or 9 are the valid values	Yes
unitid	The id of the school where the student made the test. Value is calculated on a best effort assumption.	Yes
unitname	The name of the school where the student made the test. Value is calculated on a best effort assumption.	Yes
testtype	The name of the test type	Yes
testname	The name of the test, if applicable	Yes

6.3.11 Nationaltestexport

Name	Description	Read-only
student	Student information	Yes
nationaltestexportresults	List of student's test results	Yes

7 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.

7.1 Grade reports

7.1.1 Export

The services below give grade reports for a student or grade reports created within a specified date interval. The output is XML information with grade reports.

Parameters – Alternative 1:

Parameter	Mandatory	Description
Id	Yes	Student identity. The id can be GUID or PID for the student.

Parameters – Alternative 2:

Parameter	Mandatory	Description
StartDate	Yes	Start date in the format YYYY-MM-DD.
EndDate	Yes	End date in the format YYYY-MM-DD. The maximum allowed difference between start date and end date is one year.

Services:

Service	Description
GetCompulsorySchoolGradeReports	Get grade reports for compulsory schools student
GetCompulsorySchoolForLearningDisabilitiesGradeReports	Get grade reports for compulsory school with learning disabilities student
GetUpperSecondarySchoolGradeReports	Get grade reports for upper secondary school student
GetUpperSecondarySchoolForLearningDisabilitiesGradeReports	Get grade reports for upper secondary school with learning disabilities student
GetSwedishForImmigrantsSchoolGradeReports	Get grade reports for Swedish for immigrants student
GetMunicipalAdultSchoolGradeReports	Get grade reports for municipal adult school student
GetAdultSchoolForLearningDisabilitiesGradeReports	Get grade reports for adult school with learning disabilities student
GetHigherVocationalEducationGradeReports	Get grade reports for higher vocational

Service	Description
	education student

7.1.2 Import

The services below update or add new grade reports. The services take no parameters.

Services:

Service	Description
UpdateUpperSecondarySchoolGradeReports	Update or add new grade reports for upper secondary school student
UpdateUpperSecondarySchoolForLearningDisabilitiesGradeReports	Update or add new grade reports for upper secondary school with learning disabilities student
UpdateSwedishForImmigrantsSchoolGradeReports	Update or add new grade reports for Swedish for immigrants student
UpdateMunicipalAdultSchoolGradeReports	Update or add new grade reports for municipal adult school student
UpdateAdultSchoolForLearningDisabilitiesGradeReports	Update or add new grade reports for adult school with learning disabilities student
UpdateHigherVocationalEducationGradeReports	Update or add new grade reports for higher vocational education student

7.2 Grades

7.2.1 Export

The services below give grades for a student or grades created within a specified date interval. The output is XML information with grades.

Parameters – Alternative 1:

Parameter	Mandatory	Description
Id	Yes	Student identity. The id can be GUID or PID for the student.

Parameters – Alternative 2:

Parameter	Mandatory	Description
StartDate	Yes	Start date in the format YYYY-MM-DD.
EndDate	Yes	End date in the format YYYY-MM-DD.

Parameter	Mandatory	Description
		The maximum allowed difference between start date and end date is one year.

Services:

Service	Description
GetCompulsorySchoolGrades	Get grades for compulsory school students
GetCompulsorySchoolForLearningDisabilitiesGrades	Get grades for compulsory school for learning disabilities students
GetUpperSecondarySchoolGrades	Get grades for upper secondary school students
GetUpperSecondarySchoolForLearningDisabilitiesGrades	Get grades for upper secondary school for learning disabilities students
GetSwedishForImmigrantsSchoolGrades	Get grades for Swedish for immigrants school students
GetMunicipalAdultSchoolGrades	Get grades for municipal adult school students
GetAdultSchoolForLearningDisabilitiesGrades	Get grades for adult school for learning disabilities students
GetHigherVocationalEducationGrades	Get grades for higher vocational education students

7.2.2 Import

The services below update or add new grades for students. The services take no parameters.

Services:

Service	Description
UpdateCompulsorySchoolGrades	Update or add new grades for compulsory school students
UpdateCompulsorySchoolForLearningDisabilitiesGrades	Update or add new grades for compulsory school for learning disabilities students
UpdateUpperSecondarySchoolGrades	Update or add new grades for upper secondary school students
UpdateUpperSecondarySchoolForLearningDisabilitiesGrades	Update or add new grades for upper secondary school for learning disabilities students
UpdateSwedishForImmigrantsSchoolGrades	Update or add new grades for Swedish for immigrants students
UpdateMunicipalAdultSchoolGrades	Update or add new grades for municipal

Service	Description
	adult school students
UpdateAdultSchoolForLearningDisabilitiesGrades	Update or add new grades for adult school with learning disabilities students
UpdateHigherVocationalEducationGrades	Update or add new grades for higher vocational education students

7.3 Assessments

7.3.1 Export

The services below give assessment for a student or assessment created within a specified date interval. The output is XML information with assessments.

Parameters – Alternative 1:

Parameter	Mandatory	Description
Id	Yes	Student identity. The id can be GUID or PID for the student.

Parameters – Alternative 2:

Parameter	Mandatory	Description
StartDate	Yes	Start date in the format YYYY-MM-DD.
EndDate	Yes	End date in the format YYYY-MM-DD. The maximum allowed difference between start date and end date is one year.

Services:

Service	Description
GetSwedishForImmigrantsSchoolAssessments	Get assessments for Swedish for immigrants school students
GetMunicipalAdultSchoolAssessments	Get assessments for municipal adult school students
GetAdultSchoolForLearningDisabilitiesAssessments	Get assessments for adult school for learning disabilities students
GetHigherVocationalEducationAssessments	Get assessments for higher vocational education students

7.3.2 Import

The services below update or add new assessments for students. The services take no parameters.

Services:

Service	Description
UpdateSwedishForImmigrantsSchoolAssessments	Update or add new assessments for Swedish for immigrants students
UpdateMunicipalAdultSchoolAssessments	Update or add new assessments for municipal adult school students
UpdateAdultSchoolForLearningDisabilitiesAssessments	Update or add new assessments for adult school with learning disabilities students
UpdateHigherVocationalEducationAssessments	Update or add new assessments for higher vocational education students

7.4 National tests

7.4.1 Export

The services below give national test results for subjects and courses. The output is XML information with the national test results.

There are two sets of services for exporting national tests. Any method starting with Get exports only results imported from another system through the API in 7.4.2. Any method starting with Export exports the results entered into Tieto Education by administrators.

7.4.1.1 Get methods

Parameters – Alternative 1:

Parameter	Mandatory	Description
Id	Yes	Student identity. The id can be GUID or PID for the student.

Parameters – Alternative 2:

Parameter	Mandatory	Description
StartDate	Yes	Start date in the format YYYY-MM-DD.
EndDate	Yes	End date in the format YYYY-MM-DD. The maximum allowed difference between start date and end date is one year.

Services:

Service	Description
GetCompulsorySchoolNationalTests	Get national test result for a compulsory school subject

Service	Description
GetUpperSecondarySchoolNationalTests	Get national test result for an upper secondary school course
GetSwedishForImmigrantsSchoolNationalTests	Get national test result for a Swedish for immigrants school course
GetMunicipalAdultSchoolNationalTests	Get national test result for a municipal adult school course

7.4.1.2 Export methods

Parameters:

Parameter	Mandatory	Description
id	No	Limit the searches to a specific student, identified by his/her national identifier or GUID
schoolYear	No	Limits the searches to test performed a certain school year. Valid values are 3, 6 or 9. Only supported for compulsory
startDate	No	Limits the searches to periods ending after startDate
endDate	No	Limits the searches to periods starting before endDate
unitId	No	Limit the searches to schools associated to the national tests. Note: national tests where no school can be deduced will not appear with this option.

Services:

Service	Description
ExportCompulsorySchoolNationalTests	Get national test result for a compulsory school subject
ExportUpperSecondarySchoolNationalTests	Get national test result for an upper secondary school course
ExportSwedishForImmigrantsSchoolNationalTests	Get national test result for a Swedish for immigrants school course
ExportMunicipalAdultSchoolNationalTests	Get national test result for a municipal adult school course

7.4.2 Import

The services below update or add national test results for subjects and courses. The services take no parameters.

Services:

Service	Description
UpdateCompulsorySchoolNationalTests	Update or add new national test result for a compulsory school subject
UpdateUpperSecondarySchoolNationalTests	Update or add new national test result for an upper secondary school course
UpdateSwedishForImmigrantsSchoolNationalTests	Update or add new national test result for Swedish for immigrants course
UpdateMunicipalAdultSchoolNationalTests	Update or add new national test result for municipal adult school course

7.4.2.1 Use cases

7.4.2.1.1 Import with the complete-attribute set to false (default behaviour)

Imported student	Results in
If there is no existing test result with same course/subject, registration date, school type - and school year for subject test results - exists in the Tieto Education system	Test result is saved
If there are existing test result(s) with the same course/subject, registration date, school type - and school year for subject test results - in the Tieto Education system	The existing test result(s) are overwritten
If there are existing test result(s) with course/subject, registration date, school type - and school year for subject test results - in the Tieto Education system that does not exists in the imported data	The existing test results are untouched

7.4.2.1.2 Import with the complete-attribute set to true

Imported student	Results in
If there is no existing test result with same course/subject, registration date, school type - and school year for subject test results - exists in the Tieto Education system	Test result is saved
If there are existing test result(s) with the same course/subject, registration date, school type - and school year for subject test results - in the Tieto Education system	The existing test result(s) are overwritten
If there are existing test result(s) with course/subject, registration date, school type - and school year for subject test results - in the Tieto Education system that does not exists in the imported data	The existing test results are removed from Tieto Education

8 Appendix

8.1 References

Name	Address
Outcome API XML schemas and examples	https://github.com/ExchangeServices

8.2 Vocabulary

Word	Description
Child	Children below 6 year
Student	School student 6 year and older
PID	Personal identity, formatted [YYYYMMDDNNNN]
GUID	Global unique identifier