

SIF AU Conceptual Data Model, NSIP

v.0.2, 2017-09-21

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This document proposes a conceptual model underlying the SIF-AU 3.4.2 data model. The conceptual model is at the level of entities and relations between them; attributes are not listed. All objects in the Australian data model are represented, along with nominated additions for Wellbeing; some objects are represented as relations between entities, rather than as distinct entities.

This is a draft proposal, which has not yet been circulated to the SIF-AU community. Feedback is solicited.

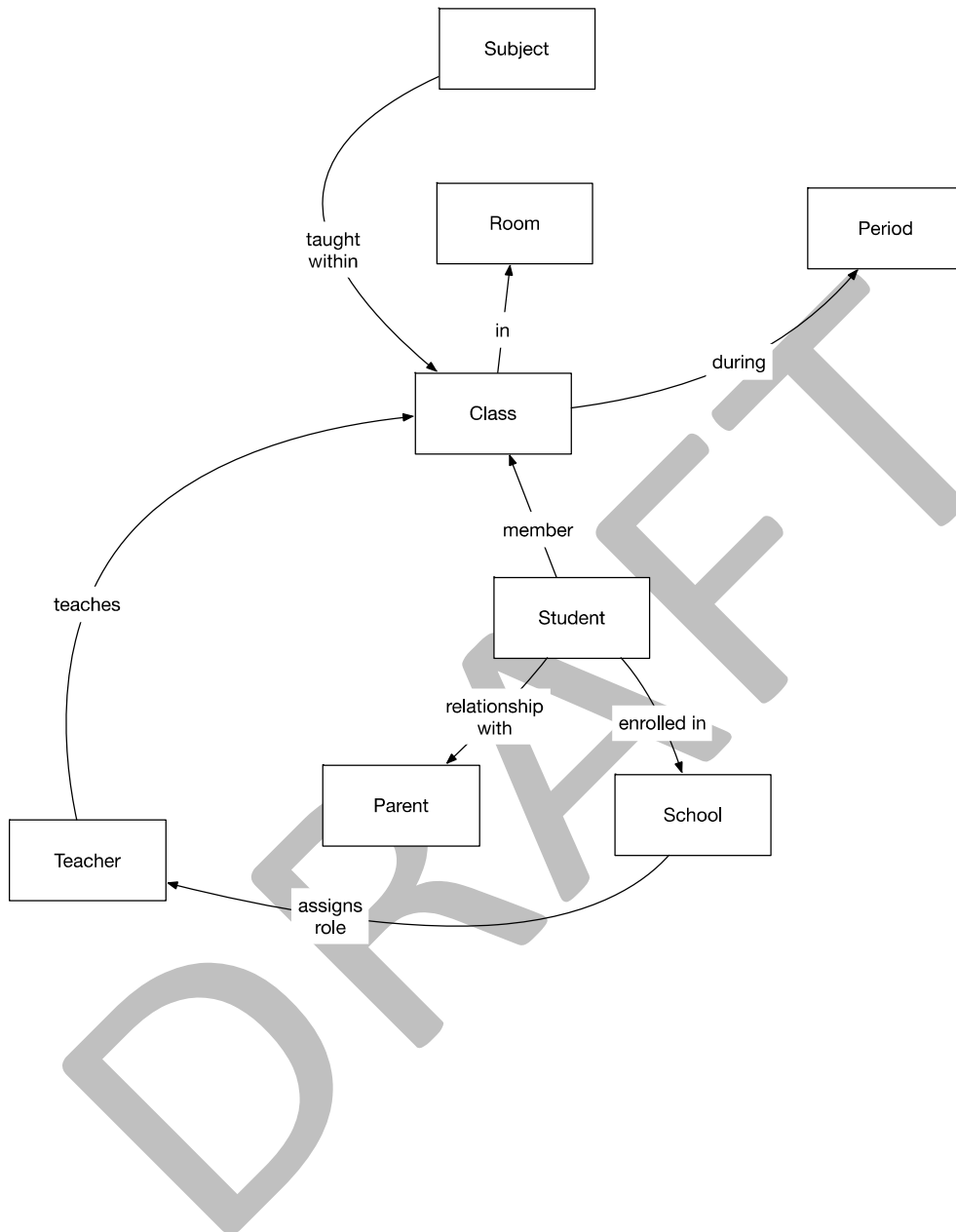
For clarity, the conceptual model is broken up into use cases:

- Enrolment
- Provisioning
- Timetable/Attendance
- Finance/Resources
- NAPLAN
- Wellbeing (under development)
- Classroom Assessment (additions to be proposed for SIF-AU 3.4.3 are not yet listed)
- Remainder

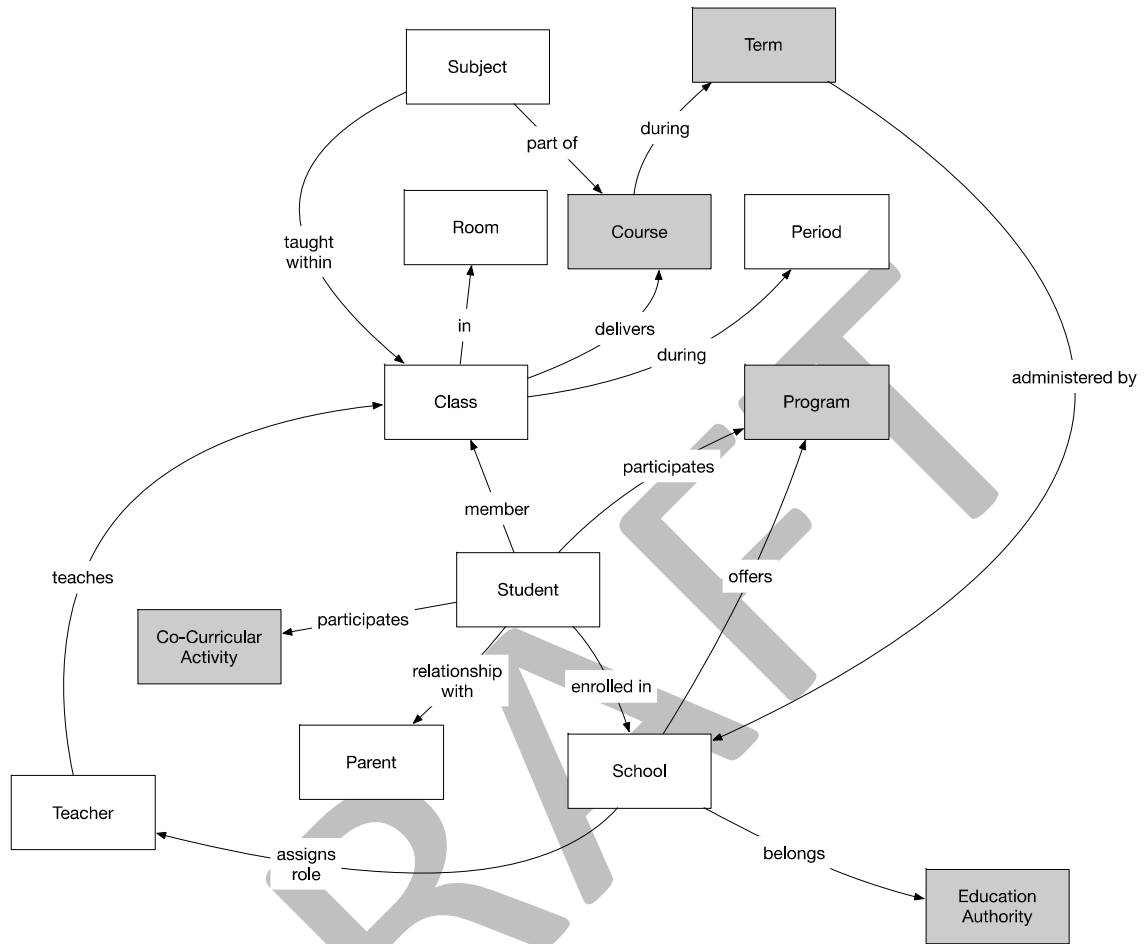
Entities are named with names that the schools sector business can relate to readily, rather than the current names of SIF-AU objects. A list mapping the conceptual model names to SIF objects follows.

Enrolment

The following are the primary objects involved in enrolling a student onto school systems.

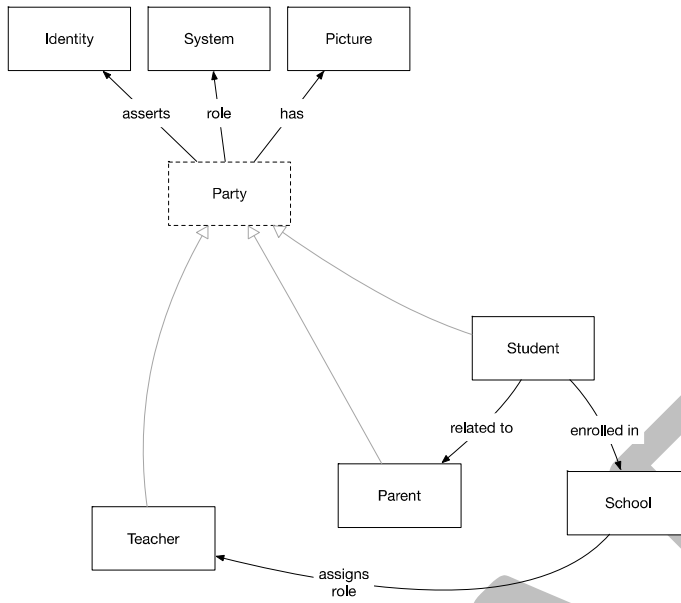


The following includes secondary objects which may also be invoked during student enrolment (shaded grey).

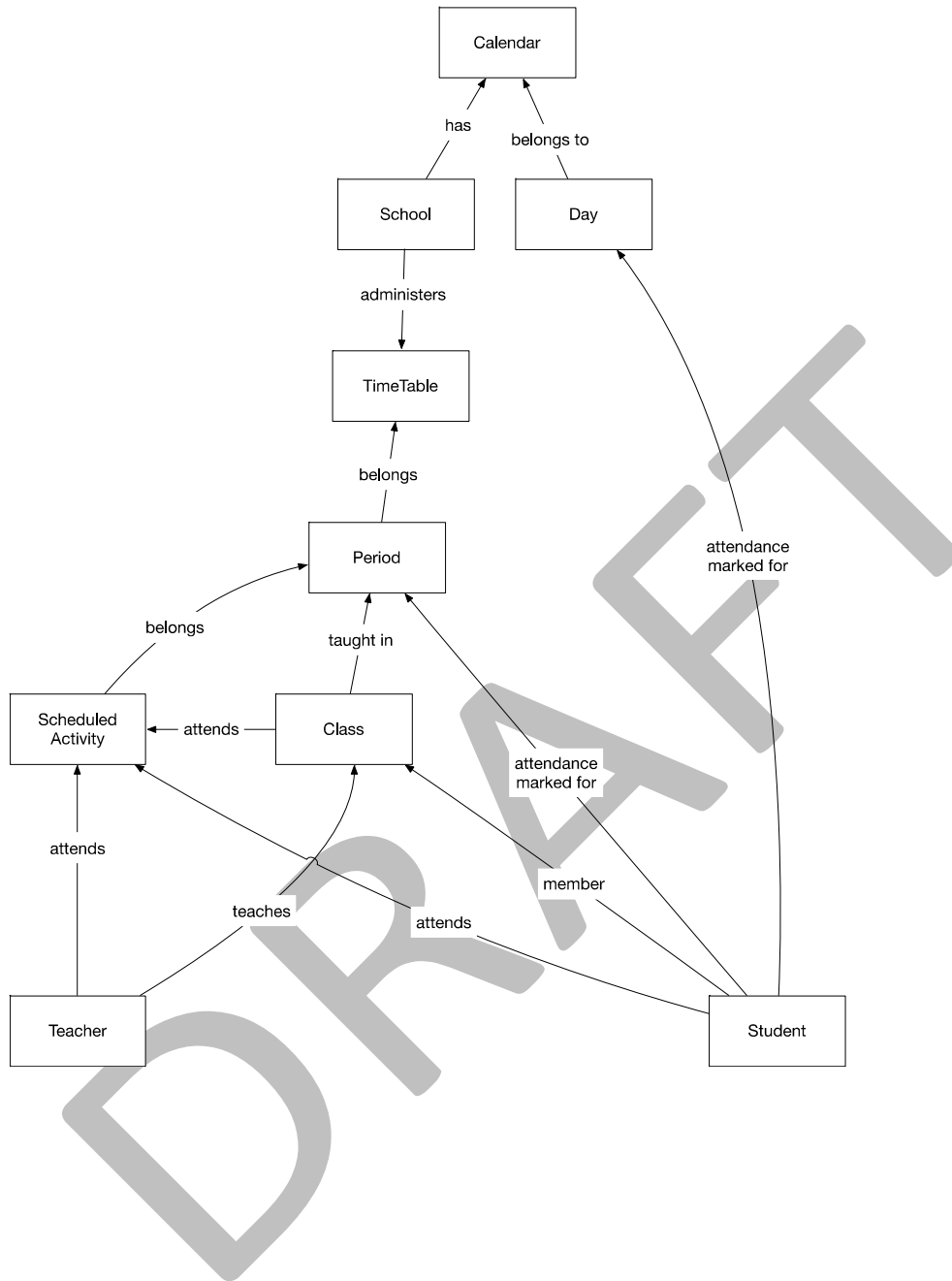


Provisioning

The grey arrows point to superclasses; e.g. Party is a superclass of Teacher, Parent, and Student. The dotted entity Party is not represented separately in the SIF-AU data model; a common type contains Personal information.

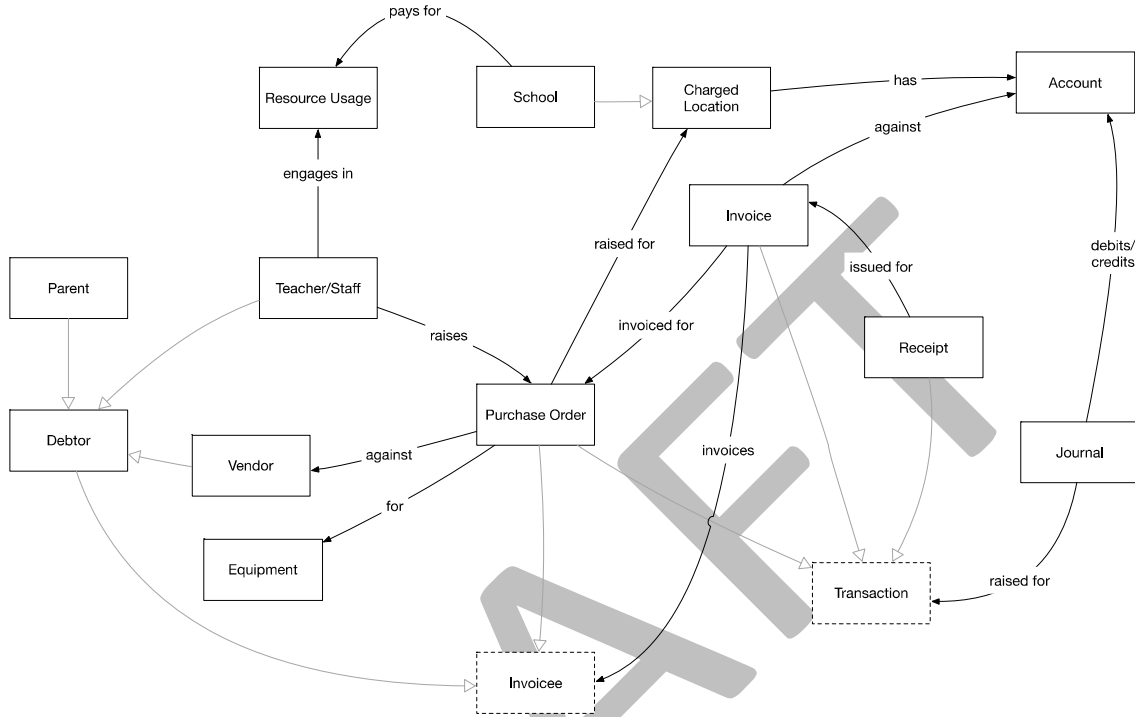


Timetable/Attendance

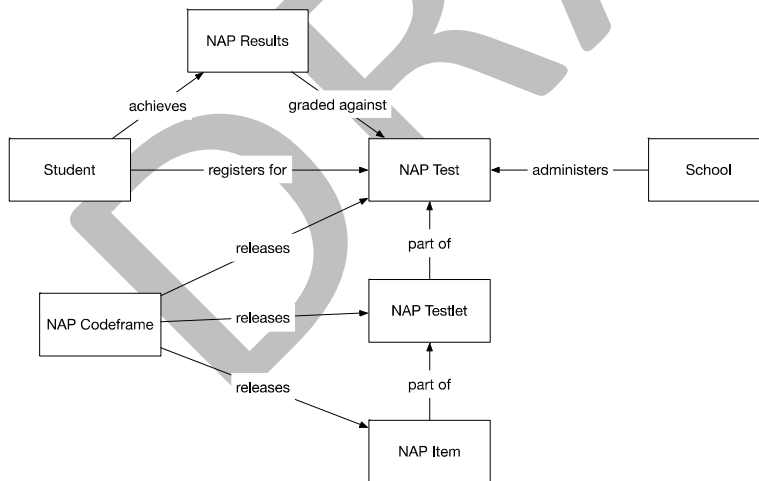


Finance/Resources

The grey arrows point to superclasses; e.g. Debtor is a superclass of Vendor. The dotted entities, Invoicee and Transaction, are not represented separately in the SIF-AU data model; they are realised through a choice of links to their subclass objects.



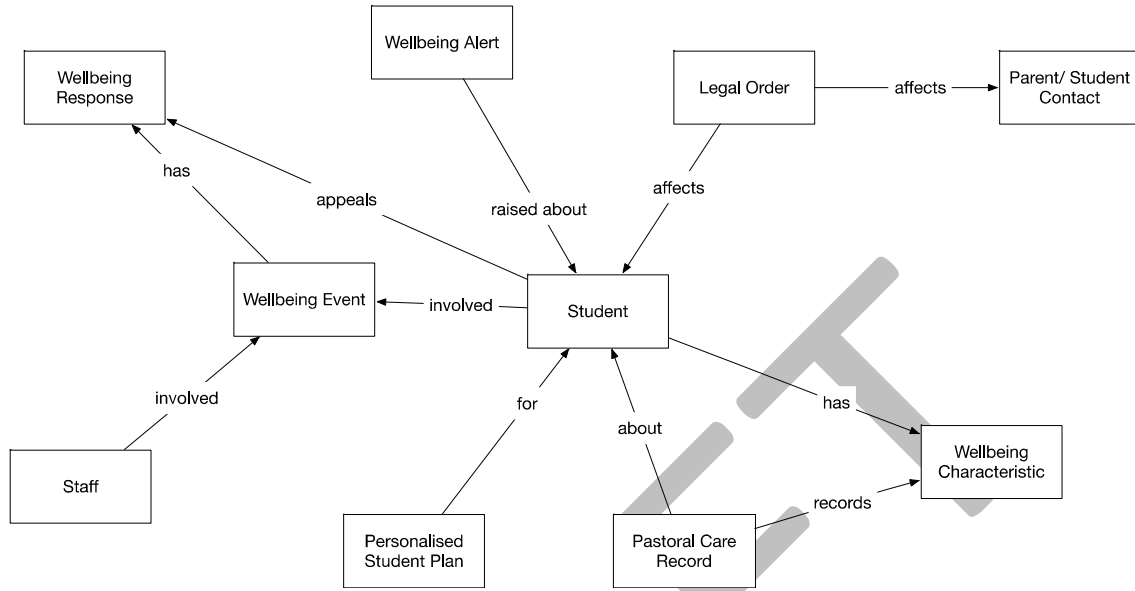
NAPLAN



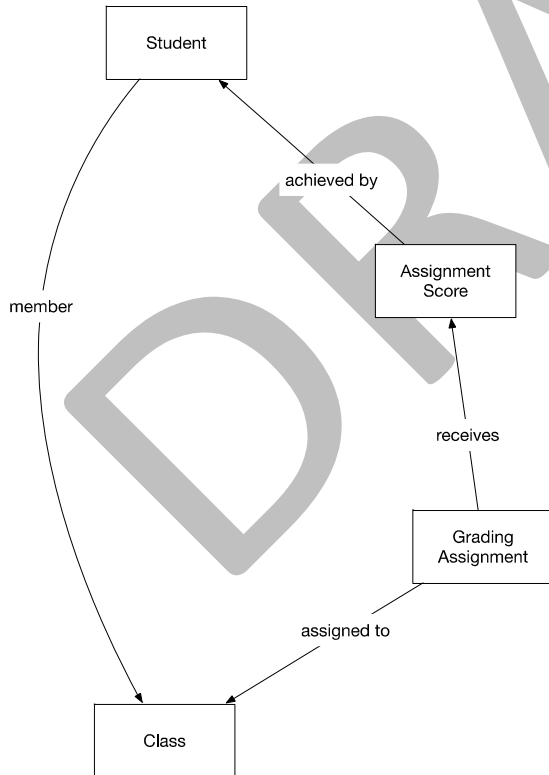
Wellbeing (under development)

The entities in the Wellbeing Usecase being added to SIF-AU 3.4.2 are densely interrelated; an Individualised Plan, for example, can draw on all of Behaviour Events, Alerts, Legal Orders, Wellbeing

Characteristics, and Pastoral Care Records. The relations indicated here are not an exhaustive list, and some relations have been left out for clarity.



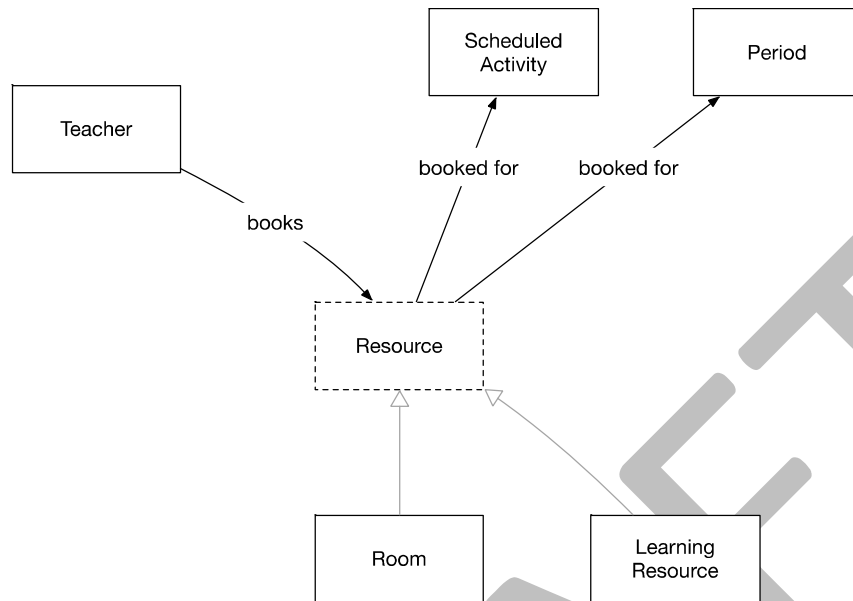
Classroom Assessment



Note that significant expansion of this model will be proposed for SIF-AU 3.4.3.

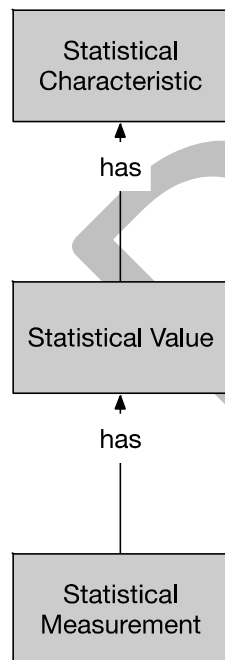
Scheduling

The grey arrows point to superclasses; e.g. Resource is a superclass of Room and Learning Resource. The dotted entity Resource is not represented separately in the SIF-AU data model; it is realised through a choice of links to their subclass objects.



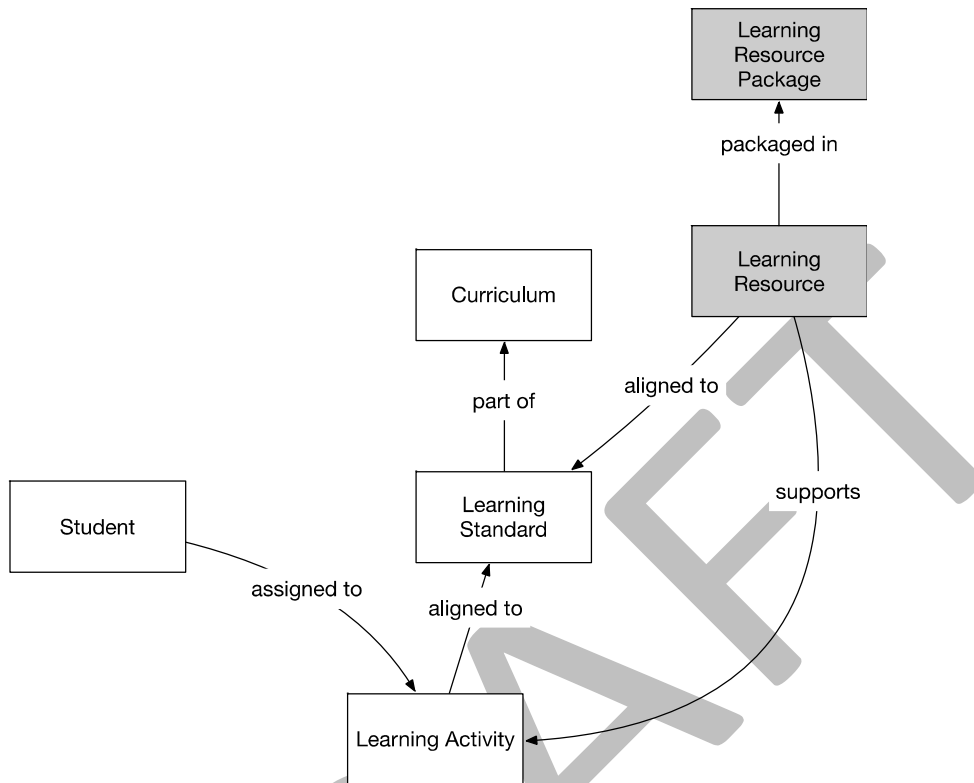
Statistics

The greyed out objects are of secondary importance to the specification, and have been little used to date.



Teaching & Learning

The greyed out objects are of secondary importance to the specification, and have been little used to date.



Mappings of Conceptual Model to SIF data model

Entities

Relations which map to SIF objects are given in lowercase and italicised. The asterisked objects are new to SIF-AU 3.4.2.

Conceptual	SIF-AU
School	SchoolInfo
Student	StudentPersonal
<i>enrolls</i>	StudentSchoolEnrolment
Teacher	StaffPersonal
<i>assigns role</i>	StaffAssignment
Parent/Student Contact	StudentPersonalContact
<i>relationship with</i>	StudentPersonalRelationship
Class	TeachingGroup; SectionInfo
Calendar	CalendarSummary
Day	CalendarDate
Course	SchoolCourseInfo [relations coded redundantly with Class]
Subject	TimeTableSubject

Education Authority	LEAInfo
Term	TermInfo
Period	TimeTableCell
Room	RoomInfo
TimeTable	TimeTable
Scheduled Activity	ScheduledActivity
<i>attendance marked for</i>	Period: StudentPeriodAttendance; Calendar Day: StudentDailyAttendance, StudentAttendanceTimeList; reporting object: StudentAttendanceSummary
Program	SchoolPrograms
<i>participates</i>	Program: StudentParticipation; Co-Curricular Activity: StudentActivityParticipation
Identity	Identity
<i>role</i>	SystemRole
Picture	PersonPicture
Co-Curricular Activity	StudentActivityInfo
Learning Activity	Activity
Learning Standard	LearningStandardItem
Curriculum	LearningStandardDocument
Learning Resource	LearningResource
Learning Resource Package	Learning Resource Package
Equipment	EquipmentInfo
Resource Usage	ResourceUsage
Statistical Measurement	AggregateStatisticInfo
Statistical Value	AggregateStatisticFact
Statistical Characteristic	AggregateCharacteristic
Vendor	VendorInfo
Purchase Order	PurchaseOrder
Charged Location	ChargedLocation
Debtor	Debtor
Account	FinancialAccount
Journal	Journal
Invoice	Invoice
Receipt	PaymentReceipt
NAP Test	NAPTest
<i>registers for</i>	NAPEventStudentLink
NAP Testlet	NAPTestlet
NAP Item	NAPTestItem
NAP Results	NAPStudentResponseSet, reporting object: NAPTestScoreSummary
NAP Codeframe	NAPCodeFrame
Wellbeing Event	WellbeingEvent*
Wellbeing Response	WellbeingResponse*
<i>appeals</i>	Appeal*
Wellbeing Alert	Alert*
Legal Order	LegalOrder*

Wellbeing Characteristic	WellbeingCharacteristic*
Pastoral Care Record	PastoralCareRecord*
Personalised Student Plan	PersonalisedPlan*
Grading Assignment	GradingAssignment
Assignment Score	GradingAssignmentScore

Relations

The following maps the relations captured in the conceptual model to sets of SIF-AU objects. The asterisked objects are under consideration.

Conceptual	SIF-AU
A Student is enrolled in a School	StudentPersonal, StudentSchoolEnrolment, SchoolInfo
A Teacher is assigned a role in a School	StaffPersonal, StaffAssignment, SchoolInfo
A Parent/Student Contact has a relationship with a Student	StudentContactPersonal, StudentContactRelationship, StudentPersonal
A Student is a member of a Class	StudentPersonal, TeachingGroup; StudentPersonal, StudentSectionEnrollment, SectionInfo
A Teacher teaches/associates with a Class	StaffPersonal, TeachingGroup
A Class delivers a Course	TeachingGroup, SchoolCourseInfo; SectionInfo, SchoolCourseInfo
A Subject is taught within a Class (A Class occurs during a Term)	TeachingGroup, TimeTableSubject SectionInfo, TermInfo
A Class is taught in a Room	TeachingGroup, RoomInfo
A Class is taught during a Period	TeachingGroup, TimeTableCell
A School has a Calendar	SchoolInfo, CalendarSummary
A Day belongs to a Calendar	CalendarDate, CalendarSummary
A Course is taught within a School	SchoolCourseInfo, SchoolInfo
A Course is taught during a Term	SchoolCourseInfo, TermInfo
A Subject is part of a Course	TimeTableSubject, SchoolCourseInfo
A Subject is taught within a School	TimeTableSubject, SchoolInfo
A Term is administered by a School	TermInfo, SchoolInfo
A Timetable is administered by a School	TimeTable, SchoolInfo
A Period belongs to a Timetable	TimeTableCell, TimeTable
A Scheduled Activity is scheduled for a Period	ScheduledActivity, TimeTableCell, (SessionInfo)
A Student attends a Scheduled Activity	ScheduledActivity, StudentPersonal
A Teacher attends a Scheduled Activity	ScheduledActivity, StaffPersonal
A Class attends a Scheduled Activity	ScheduledActivity, TeachingGroup
A Student has attendance marked for a Period	StudentPersonal, StudentPeriodAttendance, (TimeTablePeriod = TimeTableCell)

A Student has attendance marked for a Day	StudentPersonal, StudentDailyAttendance, (Date = CalendarDate); StudentPersonal, StudentAttendanceTimeList, (Date = CalendarDate)
A Student is graded on a piece of Curriculum	Forthcoming with ICON update
A Student participates in a Co-Curricular Activity	StudentPersonal, StudentActivityParticipation, StudentActivityInfo
A School belongs to an Education Authority	SchoolInfo, LEAInfo
A School offers a Program	SchoolInfo, SchoolPrograms
A Student participates in a Program	StudentPersonal, StudentParticipation, SchoolPrograms
A Student is a Party	StudentPersonal
A Teacher is a Party	StaffPersonal
A Parent is a Party	StudentContactPersonal
A Party has a Picture	(Party), PersonPicture
A Party asserts an Identity	(Party), identity
A Party has a role on a System	(Party), SystemRole, (System)
A Learning Activity is assigned to a Student	Activity, StudentPersonal
A Learning Activity is aligned to a Learning Standard	Activity, LearningStandardItem
A Learning Resource is aligned to a Learning Standard	LearningResource, LearningStandardItem
A Learning Resource is packaged in a Learning Resource Package	LearningResource, LearningResourcePackage
A Learning Standard is part of a Curriculum	LearningStandardItem, LearningStandardDocument
A Learning Resource supports a Learning Activity	Activity, LearningResource
A Room is a Resource	RoomInfo
An Equipment is a Resource	EquipmentInfo
A Learning Resource is a Resource	LearningResource
A Resource may be booked for a Period	(Resource), ResourceBooking, (Period)
A Resource may be booked for a Scheduled Activity	(Resource), ResourceBooking, ScheduledActivity
A Resource is booked by a Teacher	Resource), ResourceBooking, StaffPersonal
An Assignment is assigned within a Class	GradingAssignment, TeachingGroup
A Student is graded against an Assignment	StudentPersonal, GradingAssignmentScore, GradingAssignment
A Person engages in Resource Usage	(Person), Resource Usage
A School pays for Resource Usage	SchoolInfo, Resource Usage
A Statistical Measurement has a Statistical Value	AggregateStatisticalFact, AggregateStatisticalInfo
A Statistical Value has a Statistical Characteristic	AggregateStatisticalInfo, AggregateCharacteristicInfo

A Teacher (Staff) raises a Purchase Order	StaffPersonal, PurchaseOrder
A Purchase Order is raised against a Vendor	PurchaseOrder, VendorInfo
A Purchase Order is raised for a Charged Location	PurchaseOrder, ChargedLocationInfo
A School is a Charged Location	SchoolInfo, ChargedLocationInfo
A Party is a Debtor	(Party), Debtor
A Vendor is a Debtor	VendorInfo, Debtor
A Charged Location has an Account	ChargedLocationInfo, FinancialAccount
An Invoice is a Transaction	Invoice
A Receipt is a Transaction	PaymentReceipt
A Purchase Order is a Transaction	PurchaseOrder
A Journal processes a Transaction	Journal, Transaction
A Journal debits/credits an Account	Journal, FinancialAccount
A Debtor is an Invoicee	Debtor
A Purchase Order is an Invoicee	Debtor
An Invoice invoices an Invoicee	Invoice, (Invoicee)
An Invoice is invoiced against an Account	Invoice, FinancialAccount
An Invoice is invoiced for a Purchase Order	Invoice, PurchaseOrder
A Receipt is issued for an Invoice	Invoice, PaymentReceipt
A Purchase Order is for Equipment	PurchaseOrder, EquipmentInfo
A Student registers for a NAP Test	StudentPersonal, NAPStudentEventLink, NAPTest
A School administers a NAP Test	StudentPersonal, (SchoolInfo), NAPStudentEventLink, NAPTest
A NAP Testlet is part of a NAP Test	NAPTestlet, NAPTest
A NAP Item is part of a NAP Testlet	NAPTestItem, NAPTestlet
A NAP Codeframe releases NAP Tests	NAPCodeFrame, NAPTest
A NAP Codeframe releases NAP Testlets	NAPCodeFrame, NAPTestlet
A NAP Codeframe releases NAP Test items	NAPCodeFrame, NAPTestItem
A Student achieves a NAP Result	StudentPersonal, NAPStudentResponseSet; NAPTestScoreSummary
NAP Results are graded against a NAP Test	NAPStudentResponseSet, NAPTest; NAPTestScoreSummary
A Student is involved in a Behaviour Event	StudentPersonal, StudentBehaviourEvent*
A Teacher can be involved in a Wellbeing Event	StaffPersonal, WellbeingEvent*
A Wellbeing Event has a Wellbeing Response	WellbeingEvent*, WellbeingResponse*
A Wellbeing Response is appealed by a Student	WellbeingResponse*, Appeal*, StudentPersonal
A Legal Order affects a Student	LegalOrder*, StudentPersonal

A Legal Order affects a Parent/Student Contact	LegalOrder*, StudentContactPersonal
A Wellbeing Alert is raised about a Student	Alert*, StudentPersonal
A Student has a Wellbeing Characteristic	StudentPersonal, WellbeingCharacteristic*
A Pastoral Care Record is about a Student	PastoralCareRecord*, StudentPersonal
An Individualised Plan is for a Student	PersonalisedPlan*, StudentPersonal
An Individualised Plan responds to a Legal Order	LegalOrder*, PersonalisedPlan*
An Individualised Plan responds to a Wellbeing Characteristic	WellbeingChracteristic*, PersonalisedPlan*
An Individualised Plan responds to a Pastoral Care Record	PastoralCareRecord*, PersonalisedPlan*
An Individualised Plan responds to a Behaviour Event	WellbeingEvent*, PersonalisedPlan*
An Alert is triggered by a Legal Order	Alert*, LegalOrder*
A Pastoral Care Record records a Wellbeing Characteristic	PastoralCareRecord*, WellbeingCharacteristic*
A Grading Assignment is assigned to a Class	GradingAssignment, TeachingGroup
A Grading Assignment receives an Assignment Score	GradingAssignmentScore, GradingAssignment
An Assignment Score is achieved by a Student	GradingAssignmentScore, StudentPersonal