SIF NZ DATA MODEL – STUDENT ENROLMENT OVERVIEW - v0.4

A primary goal for SIF New Zealand is to build a New Zealand flavour of SIF Data Model that is applicable in an education system that is focused on 'whole of life learning'.

The key education provider entity in other SIF locales (North America, United Kingdom & Australia) reflects SIF's historic concentration on K-12 education, and is named 'SchoolInfo'.

Our focus on 'whole of life learning' replaces the SchoolInfo data object with a more generic Provider data object, and therefore replaces the StudentSchoolEnrollment data object with a matching StudentProviderEnrolment data object.

Co-design between Ministry projects and schools has highlighted the need for the following deviations from the SIF AU data model for the SIF NZ data model:

- Many data elements in SchoolInfo data object that are relevant to School enrolments are not relevant to enrolments in early childhood education (ECE) or tertiary education. Consequently these data elements are pushed 'down one level' into the SchoolEnrolment element within the StudentProviderEnrolment data object.
- In New Zealand enrolment at a school is a multi-year concept; particularly while students are enrolled in primary and intermediate schools; this means that the StudentProvideEnrolment object needs to be able to hold multiple SchoolEnrolment objects to hold enrolment details that are relevant to a particular academic Year.
- Addition of data elements to support concurrent enrolment at multiple schools.
- Addition of data elements to support delivery of education being in either English medium or Māori medium, according to one of New Zealand's two curricula: The New Zealand Curriculum, or Te Marautanga o Aotearoa.
- Replacement of StudentSubjectChoiceList data element with StudentCourseChoiceList as modern enrolment systems collect learner's choices for particular courses that are offered by the provider, rather than generic subject choices.

1 Conceptual Data Model

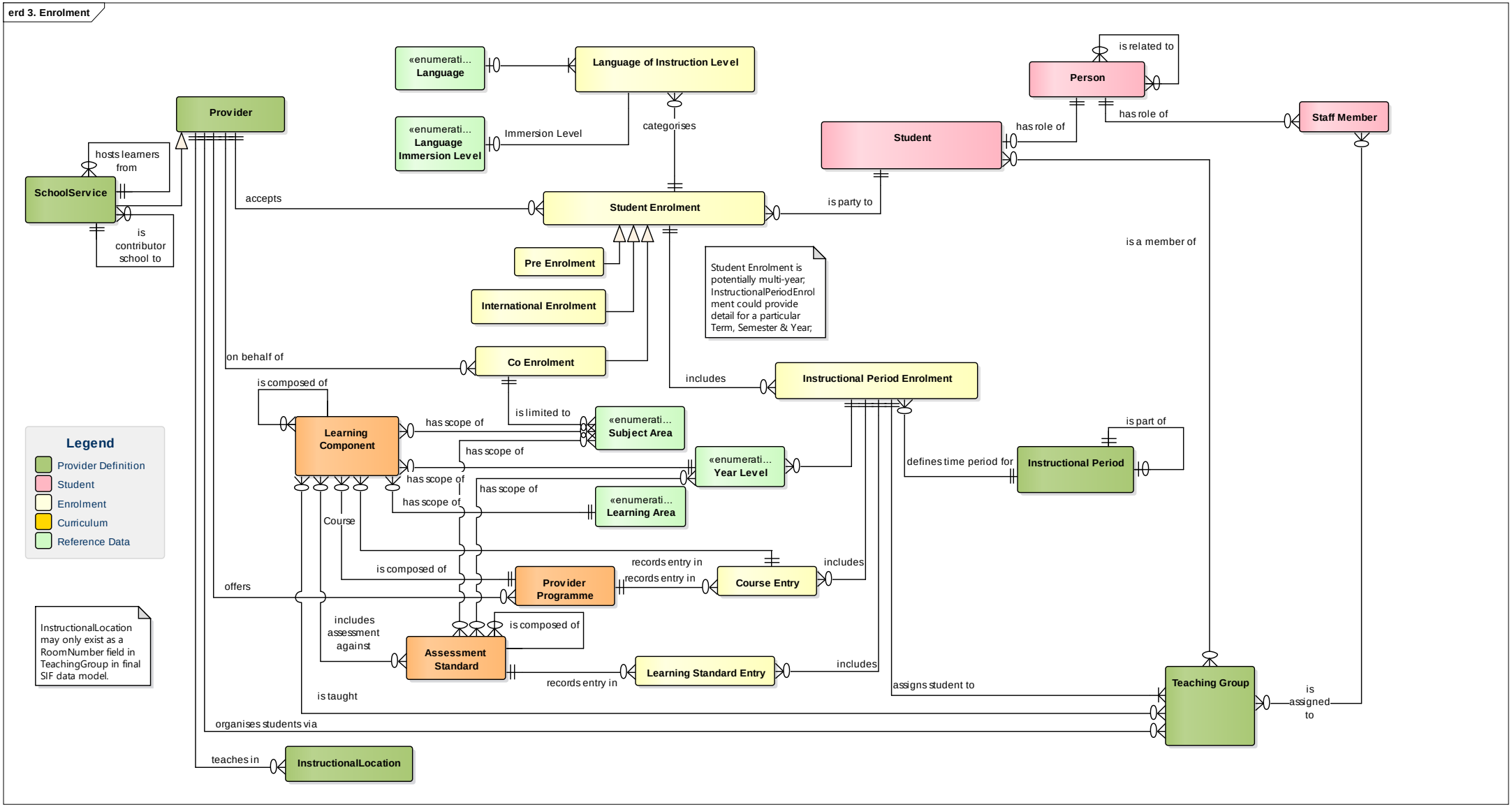

Figure 1: Student Provider Enrolment - Conceptual Model

1.1 Multi-Year Enrolment

In New Zealand enrolment at a school is a multi-year concept; particularly while students are enrolled in primary and intermediate schools. Learners enrol at school on or near their 5th birthday and they remain enrolled at that school until they are formally withdrawn.

Enrolment details for a particular Year are required so that each time period's enrolment includes variation of enrolment details:

- Language of Instruction
- Curriculum, Learning programme and Course choices
- Funding level changes as the learner's immigration status changes.

1.2 Enrolment Life-cycle

An enrolment has a complex life-cycle as follows:

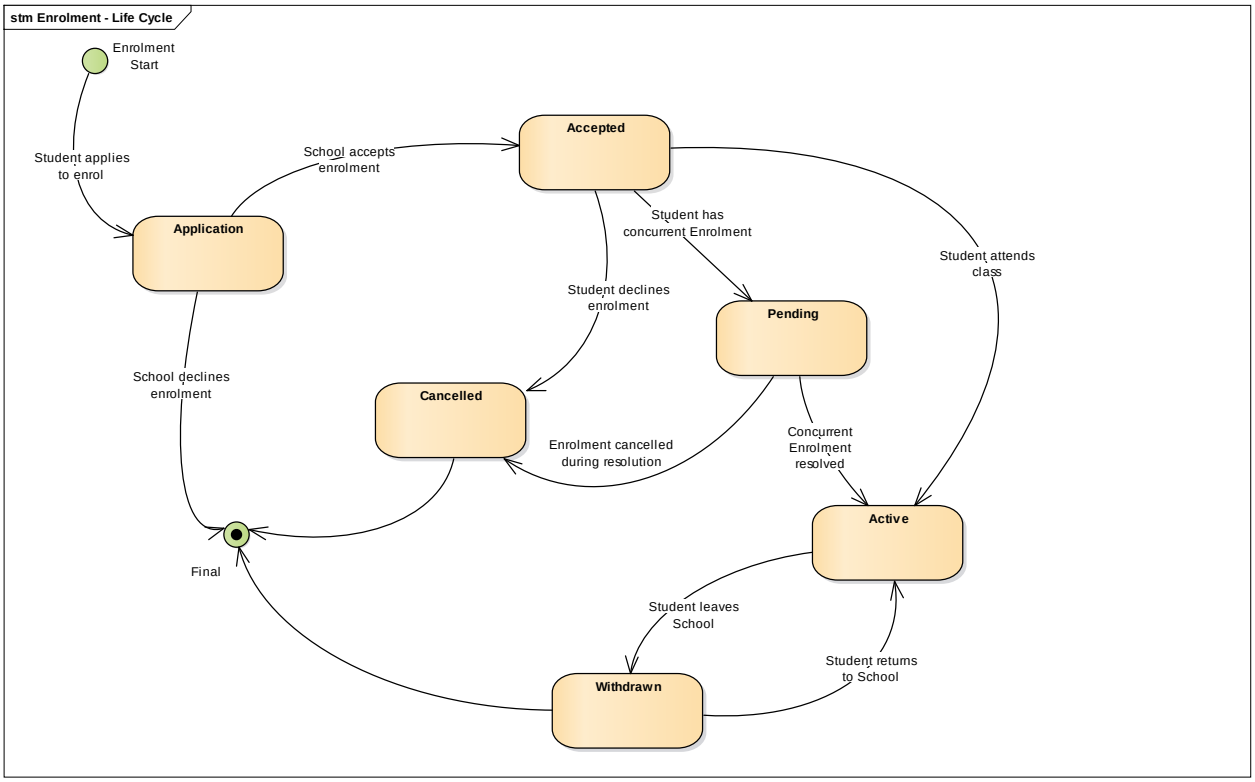

Figure 2: Student Provider Enrolment life-cycle

The enrolment states are as follows:

Enrolment State	Enrolment State Description
Application	Student has applied to become a Student at the Provider, this pre-enrolment has been received, and is being processed by the provider. It has not yet been accepted or declined by the provider.
Accepted	The Provider has processed the application, validated it against school zoning rules, and other acceptance criteria. The provider has accepted the enrolment and will have a place for the Student if they choose to take it up. Student has accepted the enrolment and is expecting to take up the enrolment at the agreed future date.
Cancelled	The enrolment application has been declined by the Provider, or discontinued by the Student, prior to becoming an ACTIVE enrolment.
Active	The student has taken up the enrolment, and has attended classes for the first time. *(cf: Pending state)*
Withdrawn	The Student has left the Provider, after the enrolment was made ACTIVE.
Pending	The enrolment has been accepted by the Provider, taken up by the Student, and the student has attended their first day; but the enrolment is unable to be set to ACTIVE, because there is still an ACTIVE enrolment for the student at a (previous) provider. Once the blocking Provider has put their enrolment to WITHDRAWN, this enrolment can be moved to 'ACTIVE'.

1.3 Multiple Language of Instruction & Curricula

Education in New Zealand may be delivered in any language including English; education agencies have an interest in collecting this data, to assist with policy and resourcing. The languages of instruction that are of particular interest are Te Reo Māori and Pacific languages – Cook Islands Māori, Fijian, Niuean, Samoan, Tokelauan, Tongan, or other Pacific languages.

Data to be collected includes:

- Language - a code from NZ Stats classification of languages level 3 denoting the language being used for learning.
- Beginning date – the date from which learning was conducted in the language described.
- Hours taught per week

Ministry reporting requirements include a specific Māori Learning data point with values:

Code	Level	Meaning
H	1	Curriculum is taught in Māori 100% of time, i.e. complete immersion (25 hrs per week)
G	1	Curriculum is taught in Māori for more than 20 and up to 24.75 hours per week (81 – 99% of total time)
F	2	Curriculum is taught in Māori for more than 12.5 and up to 20 hours per week (51 – 80% of total time)
E	3	Curriculum is taught in Māori for more than 7.5 and up to 12.5 hours per week (31 – 50% of total time)
D	4a	Curriculum is taught in Māori for more than 3 and up to 7.5 hours per week (12% - 30% of total time) i.e. more than 70% of instruction is in English.
C	4b	Student is learning Te Reo Māori as a separate subject for at least 3 hours per week
B	5	Student is learning Te Reo Māori as a separate subject for less than 3 hours per week
A	6	Student is learning Taha Māori
Null	N/A	Student not involved in Māori Language Learning

And a specific Pacific Learning data point with values:

Code	Meaning
Null	Student not involved in Pacific Medium Education
1	Student is taught in the specified Pacific Language for more than 20 and up to 25 hrs per week (81-100% of total time)
2	Student is taught in the specified Pacific Language for more than 12.5 and up to 20 hrs per week (51-80% of total time)
3	Student is taught in the specified Pacific Language for more than 7.5 and up to 12.5 hrs per week (31-50% of total time)
4	Student is taught in the specified Pacific Language for more than 3 and up to 7.5 hrs per week (12-30% of total time)

Additionally, education in New Zealand is delivered against one of two different curricula:

- *The New Zealand Curriculum* – defines the Learning Areas and how learning is structured, within New Zealand.
- *Te Maurautanga o Aotearoa* – An alternative to *The New Zealand Curriculum* that builds on the principles, values and attitudes of Māori.

1.4 International Enrolments

The Ministry requires the following data to be reported for enrolments of non-New Zealand resident learners:

- Arrival date in New Zealand
- Exchange Scheme the learner is on for learners who are eligible through participation in a recognised learner exchange scheme.
- Tuition duration (in weeks), and weekly duration fee for full fee paying international enrolments.

1.5 Secondary Sector – Programme & Course Entry

In the secondary education sector (Years 9 through 13) enrolment applications often include details of specific learning programmes and courses that the learner wishes to take during the instructional period covered by the enrolment.

The most common learning programmes available in New Zealand are:

- NZ National Certificate of Educational Achievement (NCEA) – administered by NZ Qualifications Authority.
- Cambridge International Examinations
- International Baccalaureate

We therefore define the following fundamental entities; which describe the complexity of the modern school enrolment.

Entity	Description
Learning Programme	A programme of study or training leading to one or more qualifications. A set of related educational courses and qualifications. Examples: NCEA Level 1, Year 8 Primary School
Qualification	An official recognition of successful completion of a programme of learning. A qualification, award, certification or other such recognition of achievement attained from participation in an education programme. Examples: - NCEA Level 3 Endorsed with Merit - University Entrance
Learning Component	A unit of learning (Course/Paper/Module) offered by education providers and approved as part of a Learning Programme. Components may be composed of several sub components. Example: A school defines a Geography course as consisting of certain NCEA Achievement Standards.
Learning Standard	A component of a Learning Programme intended to meet a measureable objective. A nationally registered, coherent set of learning outcomes and associated performance criteria. Examples: - an NCEA Achievement Standard: "90930 Carry out a practical chemistry investigation, with direction - 4 credits - Internal" - Cambridge IGCSE - Assessment Objective - IB - Syllabus Component

1.5.1 Example Scenario – NCEA Level 2 Chemistry

Hogwarts High provides a Learning Programme that provides credits towards NCEA Level 2. The school offers Components for students to choose according to Learning Area or Subject.

Component	Chemistry		
Education Level	NCEA Level 2		
Total Credits	23		
NCEA Standards – Sub Components			
Standard Number	**Standard Title**	**Credits**	**Assessment Mode**
91161 v2 (2.1)	Carry out qualitative analysis	4	Internal
91162 v2 (2.2)	Carry out procedures to identify ions present in solution	3	Internal
91164 v2 (2.4)	Demonstrate understanding of bonding, structure and energy changes	5	External
91165 v2 (2.5)	Demonstrate understanding of the properties of selected organic compounds	4	External
91166 v2 (2.6)	Demonstrate understanding of chemical reactivity	4	External
91167 v2 (2.7)	Demonstrate understanding of oxidation-reduction	3	Internal

1.5.2 Example Scenario: Mixing Programmes

At Hogwart's High, mathematics courses for Year 12 students provide other qualifications such as the Cambridge Advanced Subsidiary Level Mathematics (AS), as well as NCEA credits.

Component	Cambridge AS Mathematics		
Education Level	NCEA Level 2		
Total Credits	20		
NCEA Standards – Sub Components			
Standard Number	**Standard Title**	**Credits**	**Assessment Mode**
91256 v3 (2.1)	Apply coordinate geometry methods in solving problems	2	Internal
91259 v3 (2.4)	Apply trigonometric relationships in solving problems	3	Internal
91261 v3 (2.6)	Apply algebraic methods in solving problems	4	External
91262 v3 (2.7)	Apply calculus methods in solving problems	5	External
91258 v3 (2.3)	Apply sequences and series in solving problems	2	Internal
91267 v3 (2.12)	Apply probability methods in solving problems	4	External
Cambridge AS Standards – Sub Components			
Syllabus Component	**Standard Title**		**Assessment Mode**
P1	Pure Mathematics 1		Internal
S1	Probability and Statistics 1		Internal

Support for this complexity within the modern education system, gives us the following fundamental entities, details of which may be included in an enrolment application:

Entity	Description
Student	A Person acting in the role of a Student. In the context of this topic, this entity includes elements that identify the Student (name, date of birth, NSN).
Programme Entry	An entry of a student in a learning programme offered by a provider. For example, a Student enters in NCEA at Hogwarts College. *To resolve – one Programme Entry for Level 1 to 3 at high school or one Programme Entry for each NCEA Level (eg Level 1 / Year 11)?*
Component Entry	The participation of a Student in a Component offered as part of a Programme. For example, a Student enters in a Chemistry Course, as part of their NCEA Level 2 Programme.
Learning Standard Entry	The participation of a Student in a Sub Component which is a Learning Standard. Includes choices such as language requirements for exam paper.

Programme, Component & LearningStandard entry elements are included in the StudentSchoolEnrollment element/

1.6 Enrolment Exit

A student may be removed from school as the last resort after a range of other interventions have been tried and have failed to improve a behavioural problem. Removals are classified as follows:

- **Stand Down**

  Based on behavioural criteria, a student may be stood down to remove the student for a short period, ie up to 5 days at a time. A student can be stood down for up to a total of 5 days in a school term or 10 days in an academic year. If these totals are reached and a behavioural problem persists then a suspension must be considered.

  Schools must have access to length of time stood down over all school enrolments in any term/year in order to correctly apply these rules.

  A decision may be made to lift the stand down earlier than the originally set period.

- **Suspension**

  Based on behavioural criteria, a student may be suspended from a school by the principal, until the board of trustees meets to decide what to do. The board meeting prescribes an outcome – lift the suspension, extend the suspension, exclude or expel the student.

- **Exclusion**

  A child can only be excluded if under 16. The school must then attempt to find another school where the student can be enrolled.

- **Expulsion**

  If the child is 16 or older then the school can expel the student without any responsibility for finding a new school.

A new (potential) enrolling school can access records of a suspension from a previous school before deciding to enrol an excluded student – see also education.govt.nz FAQs *"Stand-downs, suspensions, exclusions, expulsions"*.

The StudentSchoolEnrolment data object includes EnrolmentExit data elements, recording the reason for the enrolment being completed. Details of the interventions, responses, plans & appeals that have taken place in the lead-up to the forced withdrawal are recorded in Wellbeing data objects.

2 Logical Data Model

The concepts introduced in the conceptual models above are realised in the StudentPersonal, StudentProviderEnrolment, ProviderCourse and TeachingGroup data objects.

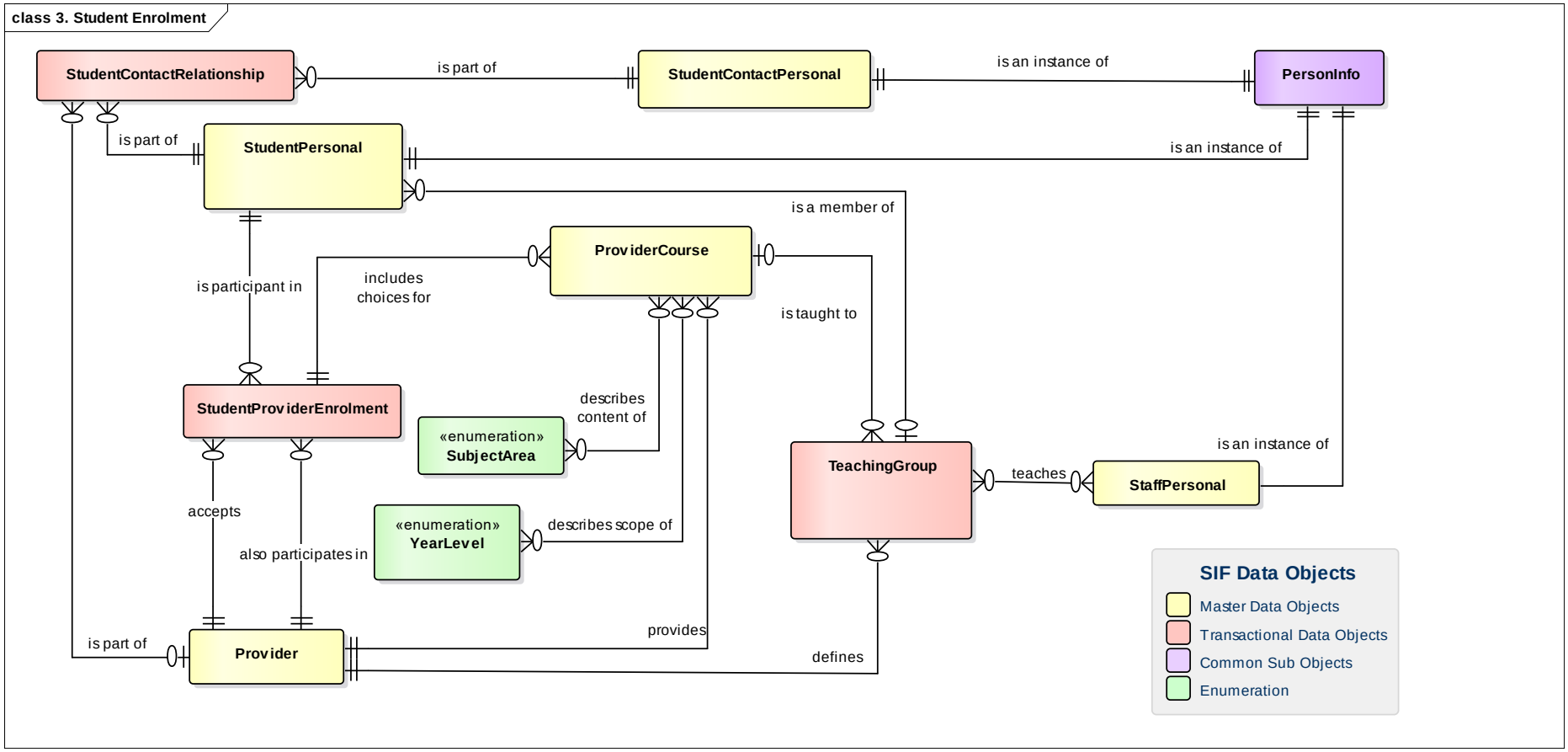

Figure 3: Student Provider Enrolment - Logical Model

Student whānau data that is collected during the enrolment process is also shown for completeness.

3 StudentProviderEnrolment Data Object

Student's enrolment details at a particular Provider are recorded using the StudentProviderEnrollment data object (with API endpoints).

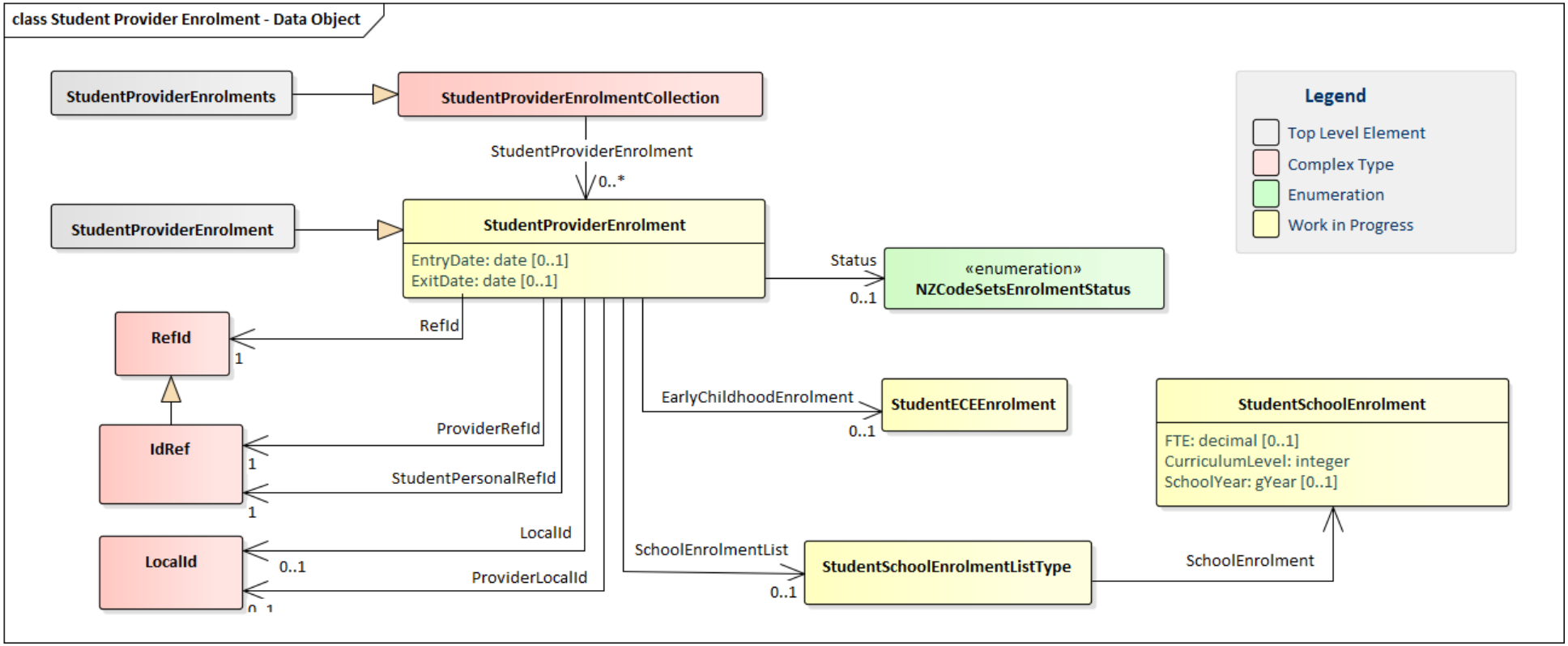

Figure 4: StudentProviderEnrolment Data Object

Enrolment details that are specific to the particular kind of Provider (ECE, School, or Tertiary) are held in complex types for that specific provider type.

3.1 StudentSchoolEnrolment Details

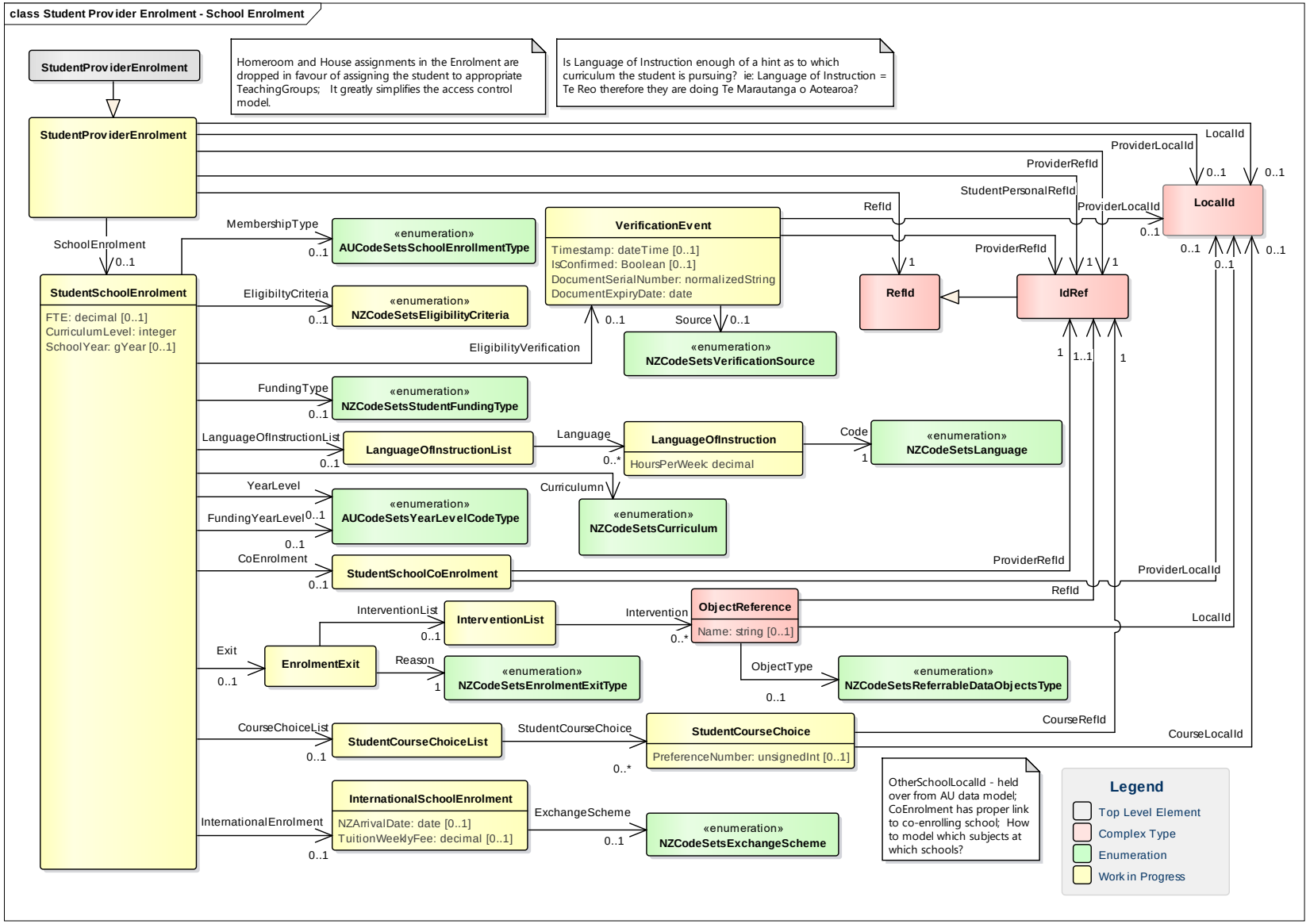

Figure 5: StudentSchoolEnrolment Details

4 ProviderCourse Data Object

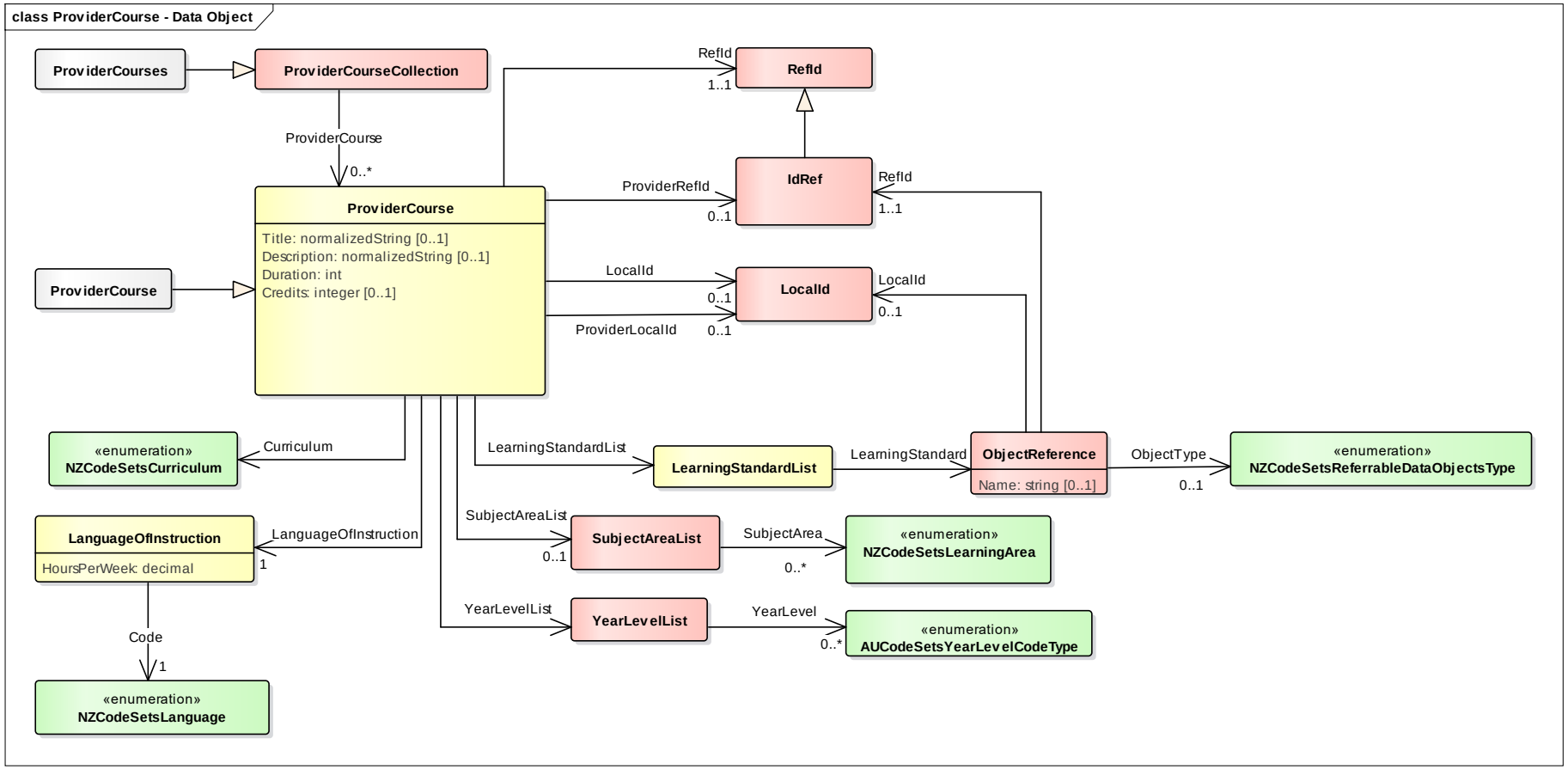

Figure 6: ProviderCourse Data Object

The Learning Component entity introduced in the conceptual model, is realised as ProviderCourse data object in the SIF NZ data model. It is included as a master data entity, and references to a student's chosen courses are included in the StudentProviderEnrolment data object.

The data object as presented, differs from the matching SchoolCourseInfo data object in the SIF AU data model, in that:

- In the New Zealand education system, courses are defined by schools and other providers, rather than any centralised body; and therefore don't require customisation on a per-school basis.
- The SubjectArea and LearningArea code values are enumerated codelists.
- A list of data object references for the LearningStandards that the course covers is included.

5 TeachingGroup Data Object

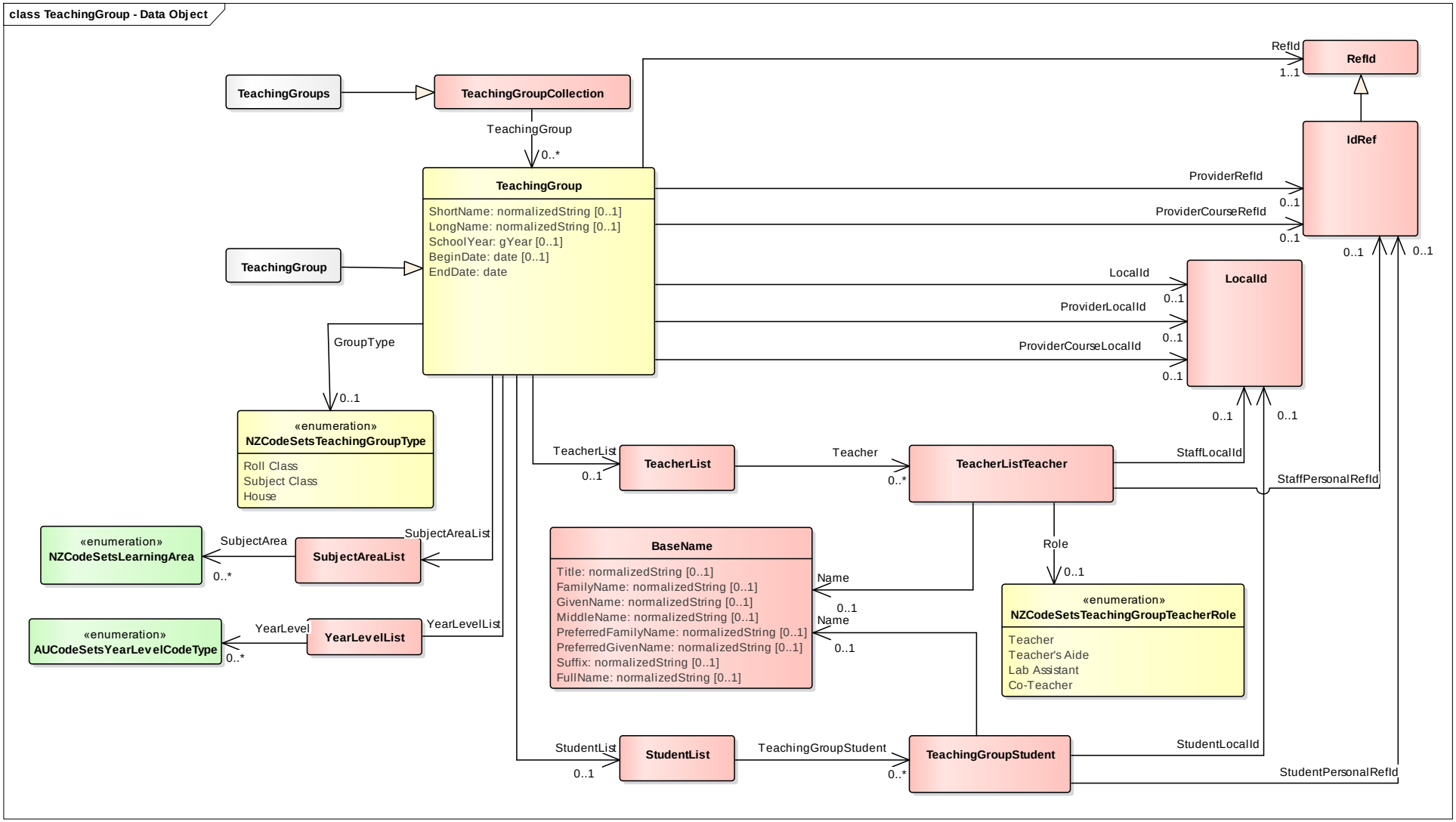

Figure 7: Teaching Group Data Object

The Teaching Group entity introduced in the conceptual model, is realised as TeachingGroup data object in the SIF NZ data model. The student enrolment process is only complete when the enrolling student has been assigned to all their relevant TeachingGroups.

This data object differs from the same data object in the SIF AU data model, in that:

- No references to Timetable, Timetable Cell or Timetable Subject data objects are included.
- The SubjectAreaList values are derived from the referenced ProviderCourse data object.
- For Subject Class teaching groups, the YearList values are derived from the referenced ProviderCourse data object. For Roll Class teaching groups, the YearList values are derived from the class' member student's enrolments.
- Each staff member assigned to a TeachingGroup will have an individualised role; while most staff members will have the role of "Teacher" other roles are possible; eg: Teacher's Aide, Lab Assistant, Co-Teacher, etc. The staff member's role with each TeachingGroup defines that staff member's access to the data for the students in the TeachingGroup.

6 Document Control

6.1 Amendment History

Version No	Description of Change	Changed By	Date
0.1	Assembled from various working documents as part of SIF NZ Data Model v3.0.1 publication process.	Stuart McGrigor	23 Jul 2018
0.2	Removed VisaDetails from provider enrolment added generic fields to VerificationEvent common object.	Stuart McGrigor	24 Jul 2018
0.3	Added programme and learning standard entry entities to the conceptual model. Not added to the enrolment data object, as they may become data objects in their own right.	Stuart McGrigor	6 Sep 2018

6.2 Related Documents

Ref #	Document Title	Version	Link

6.3 Distribution List

Name	Role	Function

6.4 Document Details

Document ID	
Document Last Saved Date	30-Oct-2018
Link to MoE Filenet Folder	*SIF NZ Data Model - Background*