# SIF NZ DATA MODEL – STUDENT, STAFF & WHĀNAU OVERVIEW – v1.0

A primary goal for SIF New Zealand is to build a New Zealand flavour of SIF Data Model that is largely based on the SIF Australia data model. The structures describing Staff, Students, and Student's whānau members are taken directly from the SIF AU data model.

However, co-design between Ministry projects and schools has highlighted the need for some deviation from the SIF AU data model for the SIF NZ data model:

- Removal of Australian specific person demographic values.
- Addition of EthnicityList, IwiAffiliationList and ReligiousAffiliationList to person demographic values.
- Addition of HealthcareServiceInfo complex type to the StudentContactPersonal recording contact details of a student's health care providers.
- StaffAssignment data object has been adjusted:
    - StaffAssignment uses a generic data object link to either Provider or Organisation to record staff assignments to roles within Schools (via the Provider data object) or Kāhui Ako (via the Organisation data object).
    - Addition of SubjectAreaList and YearLevelList to restrict the context of a StaffAssignment to a particular cohort of Students. Eg: "Head of Dept (Maths)"
- StaffTeachingGroupAssignment records assignment of a staff member to a role with a particular TeachingGroup.
- StudentTeachingGroupEnrolment records assignment of a student to membership of a particular TeachingGroup

# 1 Conceptual Data Model

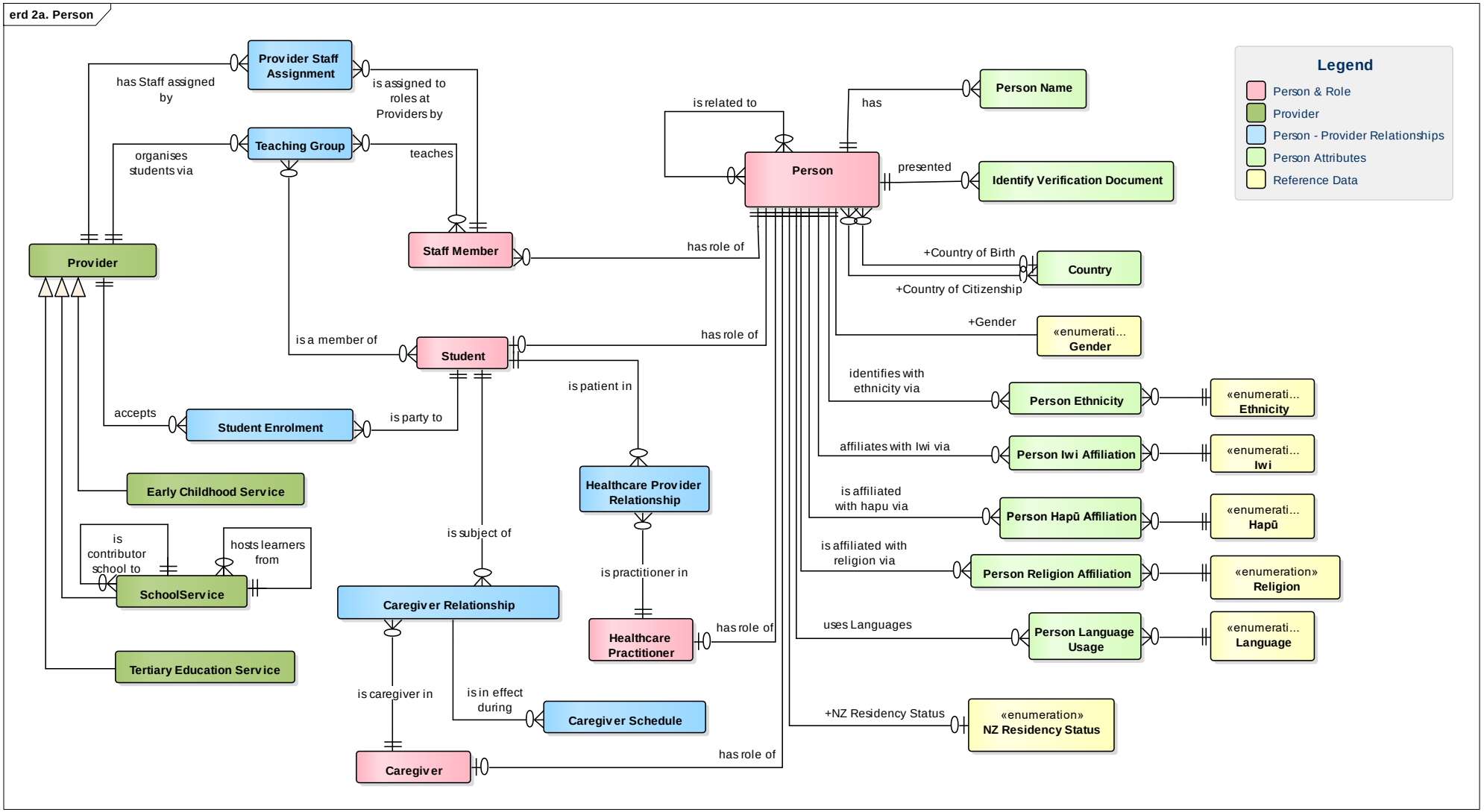


*Figure 1: Person Roles & Demographics - Conceptual Model*

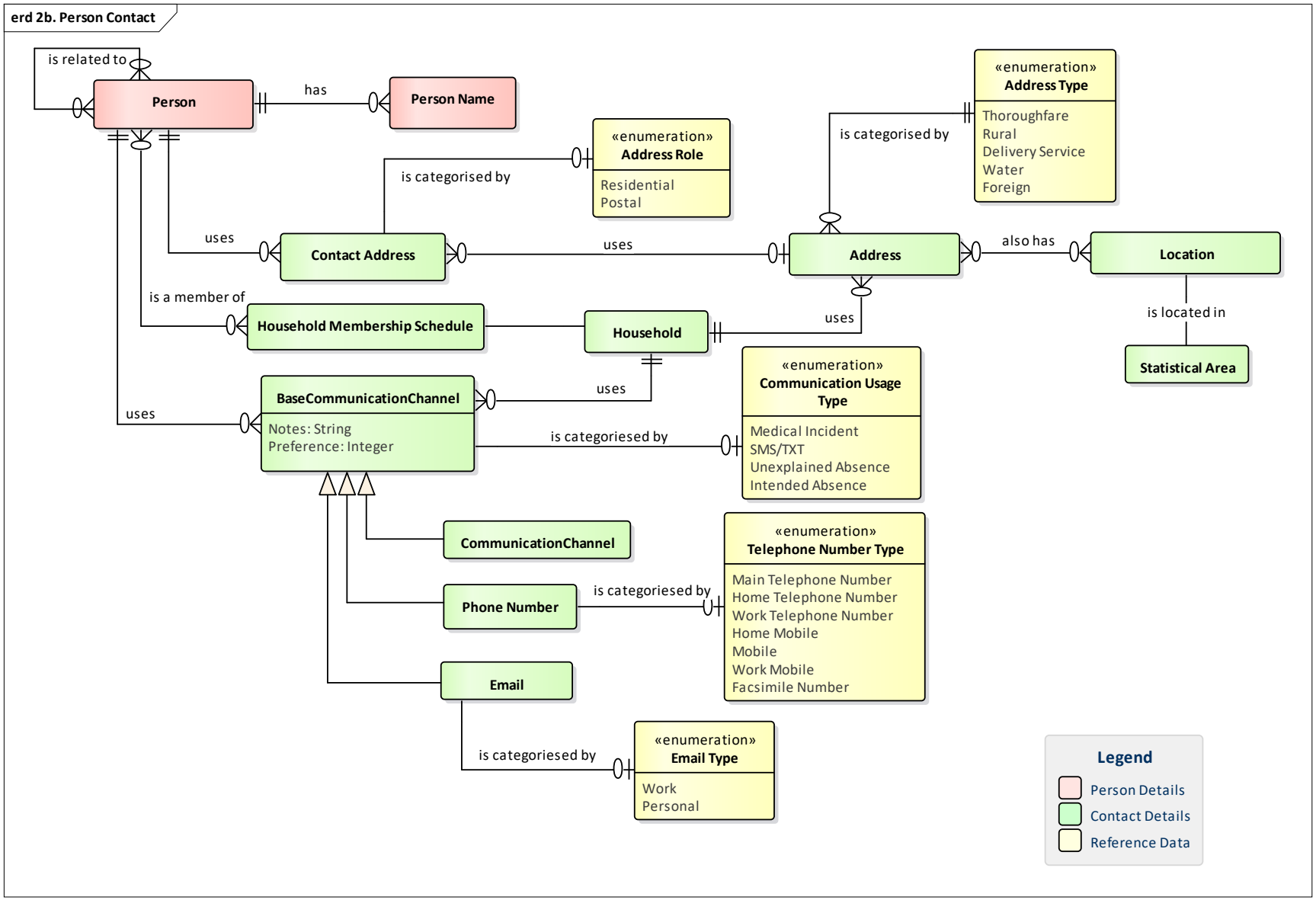


*Figure 2: Person Address, & Contact Details – Conceptual Model*

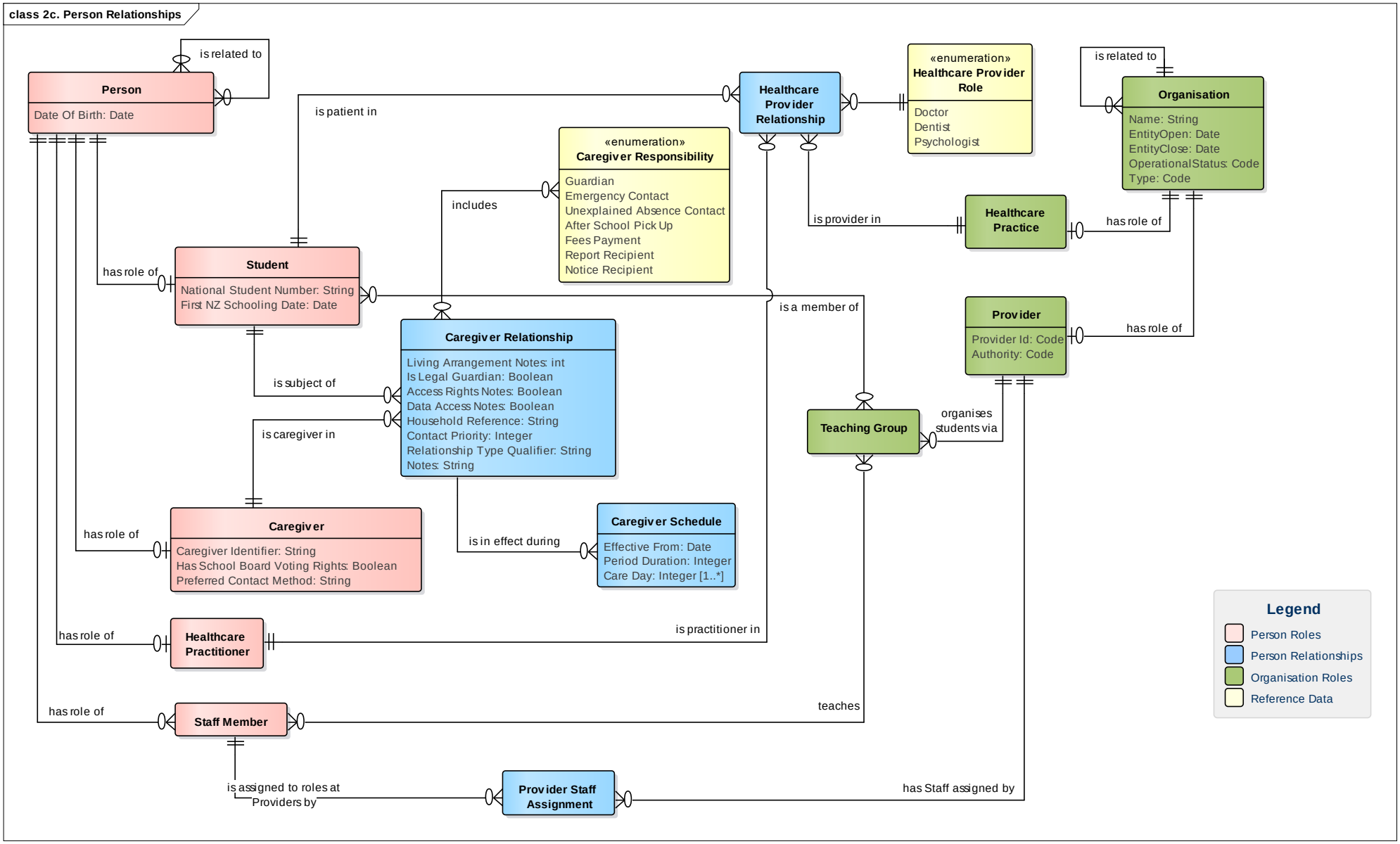


*Figure 3: Person Relationships – Conceptual Model*

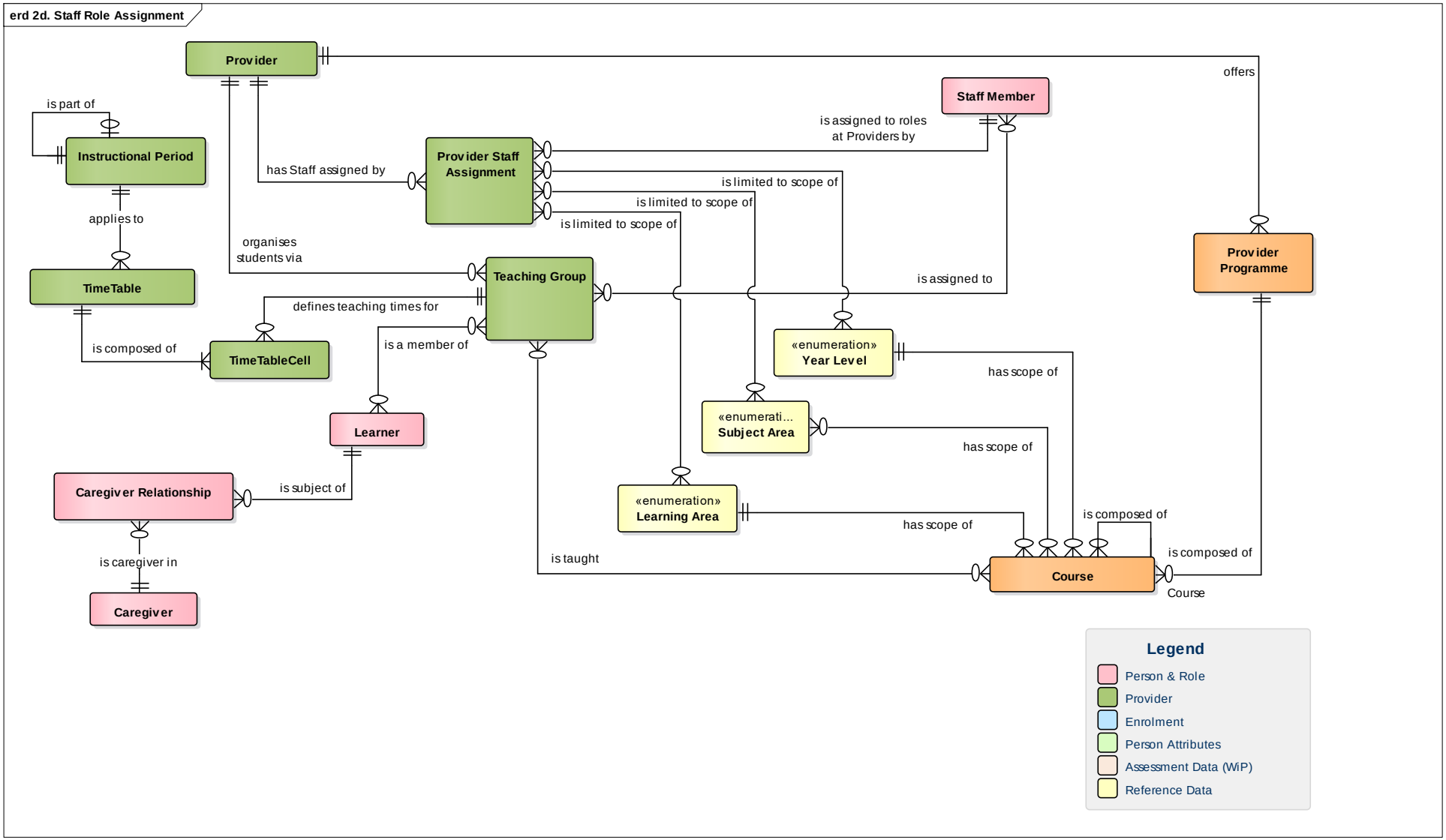


*Figure 4: Staff Role Assignments – Conceptual Model*

### 1.1.1 Person Roles & Relationships

While a traditional Person-Organisation structure as shown in Figures 1 through 3, describes all the People and Organisations involved in the education system; it is only appropriate to record full details (eg. alternative names, citizenship, residency and other demographic data) about Students. The details recorded about staff, and students' caregivers are limited to current name, address and contact details.

### 1.1.2 Contact via Household

As shown in *Figure 5*, many addresses and other contact methods are shared by all the people who live in a particular household; although not all of a person's contact methods are connected via the households they are a member of.

We recognise that modern complex family relationships exist whereby children live with different caregivers on different nights of the week; this leads to a more complex person contact conceptual model. The CaregiverSchedule and HouseholdMemberSchedule entites are introduced in the conceptual data models to support this complexity; these concepts will be realised as new complex types within the existing StudentContactRelationship data object in the SIF NZ Data Model.

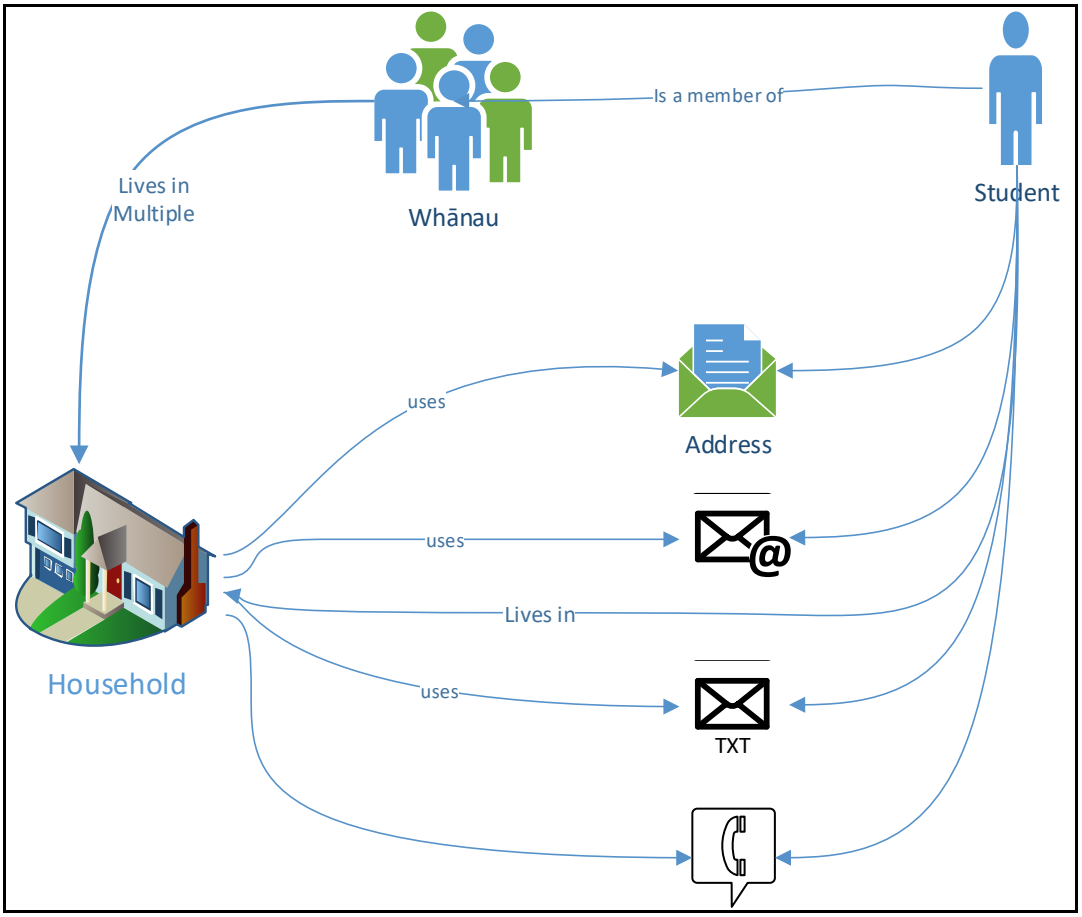


*Figure 5: Student Contact Details via Household*

### 1.1.3 Healthcare Practitioners.

The SIF NZ Data Model departs from the AU Data Model by explicitly describing a Student's healthcare practitioners. Details of a Student's health-care practitioners that are collected by Student's base schools, need to be made available to host schools where Students are concurrently enrolled at multiple providers. These concepts will be realised as a new HealthcareProvider complex type in the existing StudentContactPersonal data object in the SIF NZ Data Model.

### 1.1.4 Iwi and Hapū Demographics

Many SMS collect separate Iwi and Hapū demographic values for Students. Because often specific Iwi and Hapū are not known, Statistics New Zealand defines a single statistical classification hierarchy for *Iwi and Iwi related groups* which includes codes defining Geographic Region, Iwi, hapū, and confederations and waka for those who don't know a specific Iwi or Hapū.

The SIF NZ Data Model therefore includes a single IwiAffiliationList element in the person Demographics data type, for the collection of all Iwi and Iwi related group affiliations.

### 1.1.5 Communication Channel

The SIF AU Data Model provides for contact mechanisms using specific types – address, phone, and email. To provide for additional potential contact mechanisms (eg Facebook page, Twitter handle for a person) it was suggested that all contact mechanisms could be represented more generically using CommunicationChannel (except for address which requires its own specific definition).

However replacing phone and email definitions would represent too large a departure from the existing SIF model. Instead it was decided to continue to represent address, phone and email using the existing SIF constructs. CommunicationChannel has been introduced and allows for future requirements for any new channels for an organisation (eg Facebook page, Twitter account).

### 1.1.6 Address & Geospatial Location

The SIF NZ Data Model departs from the SIF AU Data Model, as it does not break Address down into separate fields for street number, street name, street type, prefix & suffix. A simple Line1, Line2, Line3, Suburb, City, State & Country structure is sufficient for all known integrations.

The Address and Location structure is included as depicted in Figure *2*, whereby Organisations use Addresses, and operate from Locations. While Locations have an Address, not all Addresses refer to Locations. (ref: P O Box, Private Bag and other classes of service address that don't denote any particular geographic location).

Each Location is located in a number of Statistical Areas, one of each spatial area type defined by Statistics New Zealand in Figure 6:

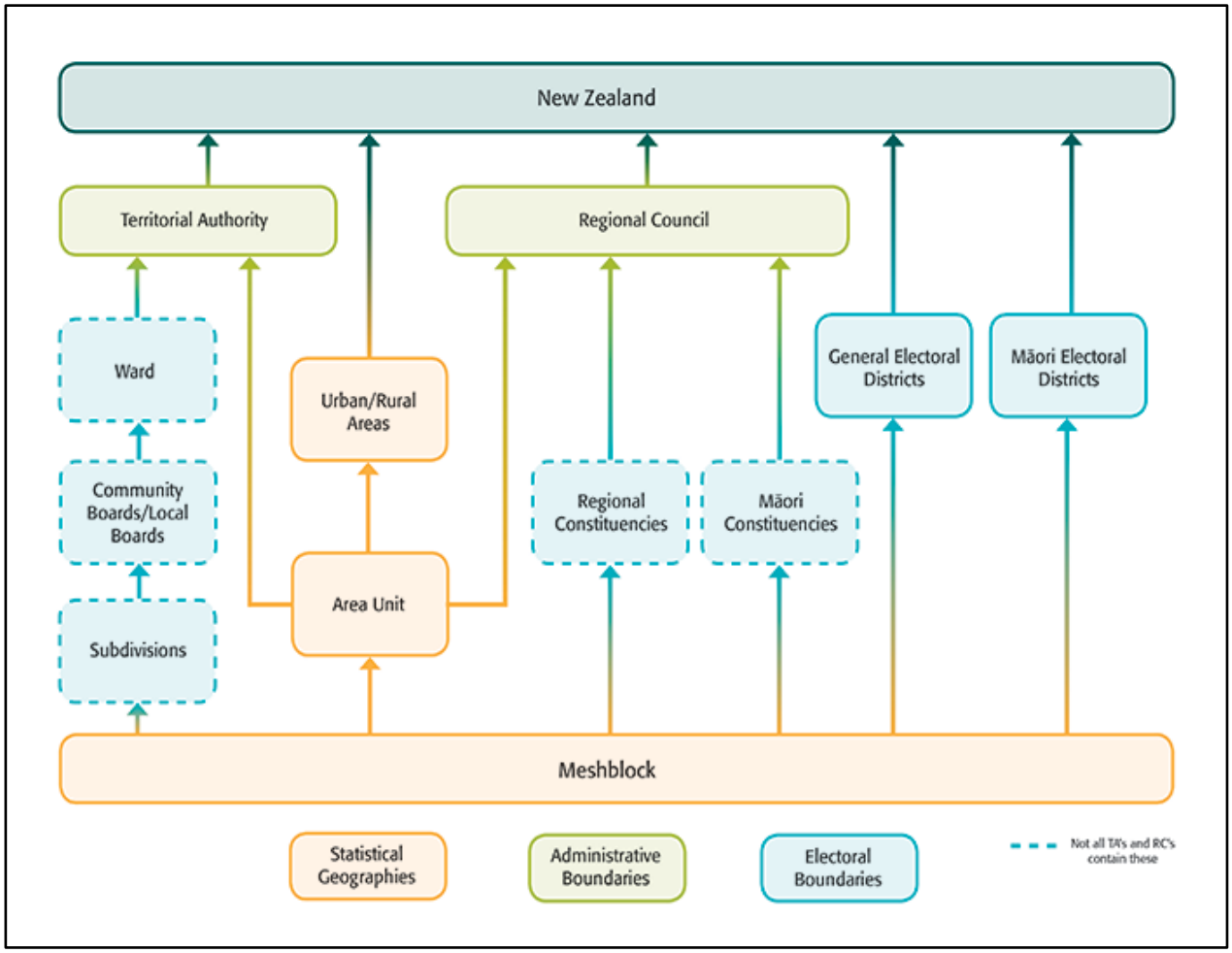


*Figure 6: Spatial Area Types – ex Stats New Zealand*

The SIF NZ Data Model spatial area type enumeration recognises the following spatial area types:

| Code | Description | Definition per Stats NZ |
|---|---|---|
| AE | Area Unit | Area units are aggregations of meshblocks. They are non–administrative areas that are in between meshblocks and territorial authorities in size. Area units must either define or aggregate to define, regional councils, territorial authorities and urban areas. |
| GE | General Electoral District | The general electoral districts as constituted under the Electoral Act 1993. |
| CB | Community Board (aka Local Board within Auckland) | Local boards provide governance at the local level within Auckland Council. They enable democratic decision making by, and on behalf of communities within the local board area. |
| ME | Māori Electoral District | Māori electoral districts are the voting districts for parliamentary elections for people who choose to be on the Māori Electoral Roll. |
| MB | Mesh Block | A meshblock is the smallest geographic unit for which statistical data is collected and processed by Statistics New Zealand.<br>A meshblock is defined by a geographic area, which can vary in size from part of a city block to a large area of rural land. Each meshblock borders on another to form a network covering all of New Zealand, including coasts and inlets and extending out to the 200-mile economic zone. |

| Code | Description | Definition per Stats NZ |
|---|---|---|
| RC | Regional Council | The Local Government Act 2002 requires the boundaries of regions to conform as far as possible to one or more water catchments. When determining regional boundaries, the Local Government Commission gave consideration to regional communities of interest when selecting water catchments to be included in a region. It also considered factors such as natural resource management, land use planning and environmental matters. |
| TA | Territorial Authority | A territorial authority is defined under the Local Government Act 2002 as a city council or district council. There are 67 territorial authorities consisting of 12 city councils, 53 districts, Auckland Council, and Chatham Islands Council. |
| UA | Urban Area | Urban Areas are statistically defined areas with no administrative or legal basis. There is a three part hierarchical sub-division of urban areas into: main urban areas, secondary urban areas, minor urban areas.<br>Together the populations in main, secondary and minor urban areas comprise the statistically defined urban population of New Zealand. The urban area classification is designed to identify concentrated urban or semi-urban settlements without the distortions of administrative boundaries. |
| WA | Ward | Wards are defined under the Local Electoral Act 2001 and result from the division, for electoral purposes, of the district of a territorial authority.<br>The ward system was designed to allow for the recognition of communities within a district and to increase community involvement in the local government system. |

The actual spatial areas code values recognised by the SIF NZ Data Model, when representing a statistical area are defined by Stats New Zealand in the following standards:

| Statistical Area Type | Referenced Standard |
|---|---|
| Area Unit | *Statistics NZ Classification of Area Unit* |
| General Electoral District | *Statistics NZ General Electoral District* |
| Community Board | *Statistics NZ Community Board (codes 07601 - 07621)* |
| Māori Electoral District | *Statistics NZ Māori Electoral District* |
| Mesh Block | *Statistics NZ Statistical Standard for Meshblock* |
| Regional Council | *Statistics NZ Regional Council* |
| Territorial Authority | *Statistics NZ Territorial Authority* |
| Urban Area | *Statistics NZ Urban Area* |
| Ward | *Statistics NZ Ward* |

**NOTE:** The SIF NZ Data Model does not include enumeration code sets for these externally defined codes. Implementation projects should investigate making use of the Code Sets Registry capability defined by the SIF Global Infrastructure, to make these code sets available to any particular implementation of the SIF Data Model.

### *1.1.7 Staff Role Assignments*

As shown in Figure 4, Staff are assigned to non-classroom roles at Schools (via the Provider data object) and Kāhui Ako (via the Organisation data object) in the StaffAssignment data object. These role assignments may form the foundation of an access control matrix for connecting SIF clients.

Role assignments can be restricted to categories of Students with the StaffSubjectList and YearLevelList. This allows for assignment to roles with particular responsibility for general cohorts of students, such as "Head of Department (Maths)" or "Year 8 Student Dean".

While assignment to student contact roles such as Subject Teacher, Homeroom Teacher, Whānau Teacher, or House Master is made with the StaffAssignment data object; details of the particular groups of specific students the staff member is responsible for are made via the TeachingGroup data object.

## 2 Logical Data Model

The concepts introduced in the conceptual models above are realised in the StudentPersonal, StudentContactPersonal, StudentContactRelationship, StaffPersonal, StaffAssignment, TeachingGroup, StaffTeachingGroupAssignment, and StudentTeachingGroupEnrolment data objects.

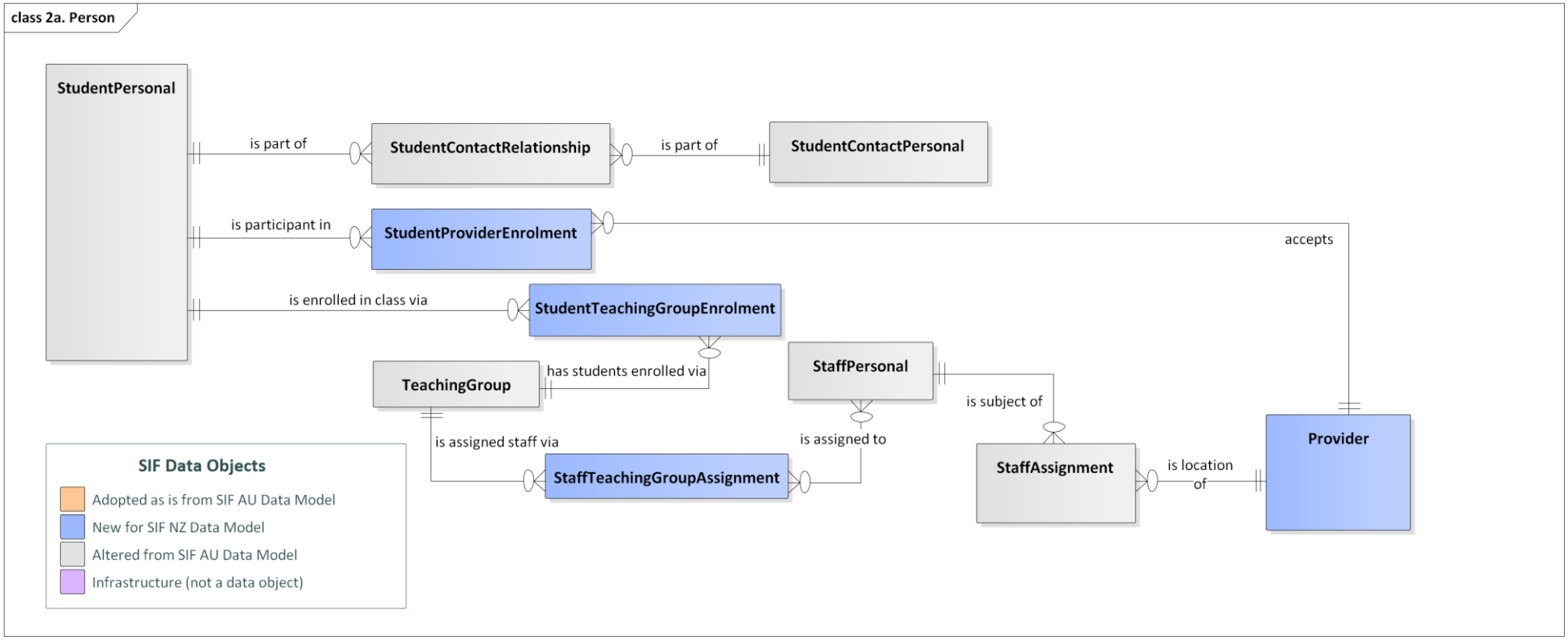


*Figure 7: Staff, Student & Whānau Relationships - Logical Model*

## 2.1 PersonInfo & BasePersonInfo

The StudentPersonal, StaffPersonal and StudentContactPersonal data objects are constructed re-using a number of common data types, to ensure consistency across the SIF NZ data model:

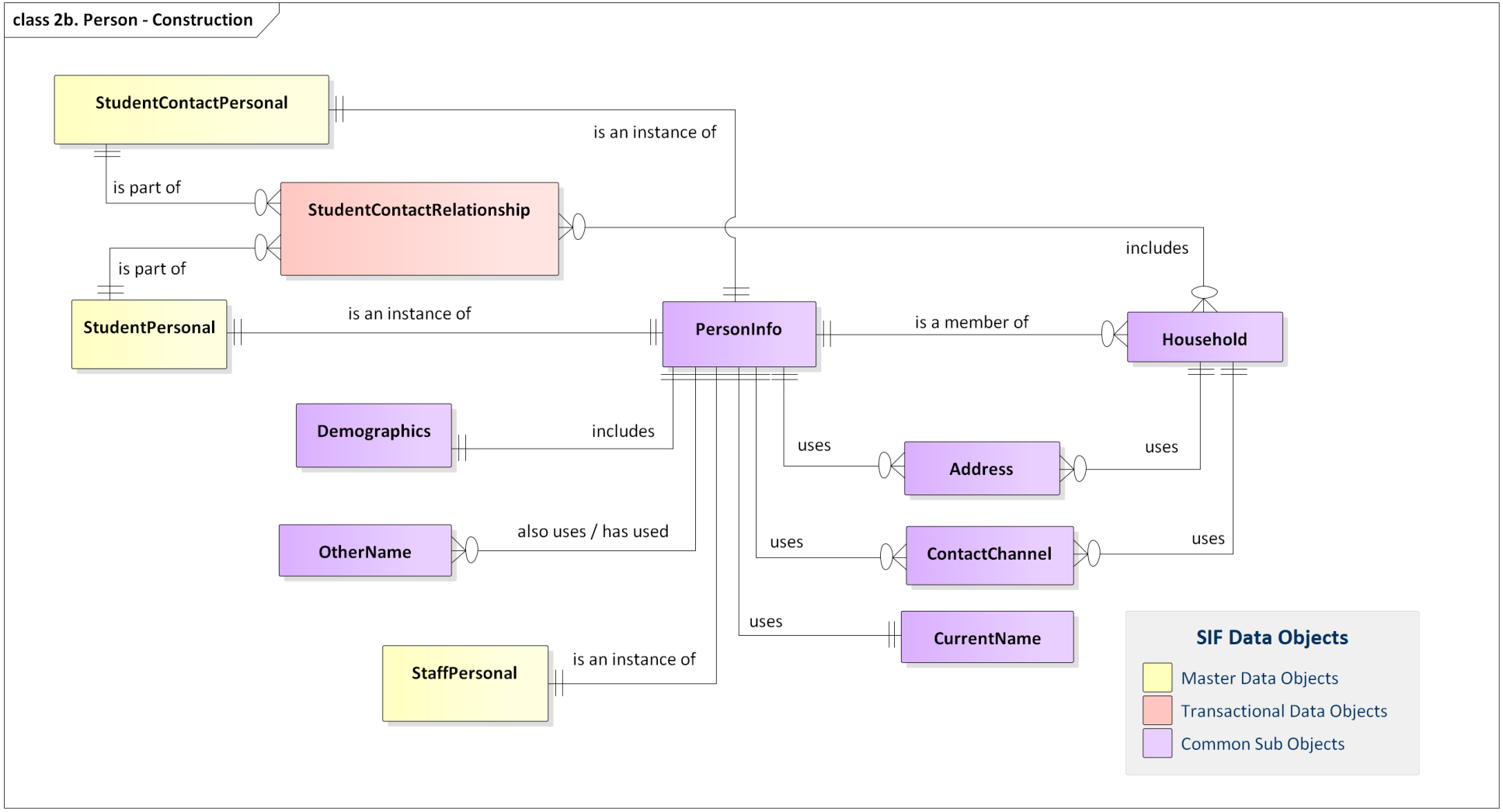


*Figure 8: Staff, Student & Whānau Construction with Common Data Types*

## 2.2 Person contact information & households

The multiple relationships that BasePersonInfo and StudentContactRelationship have with Household mean the SIF NZ data model supports multiple mechanisms for attaching address and contact channel information to Students, their Whānau and Staff.

| SIF NZ Data Object | Contact Information: |
|---|---|
| StudentPersonal | Data object includes:<br>• AddressList, PhoneList, & EmailList fields<br>• HouseholdContactInfoList which can either **define** a household or **reference** a previously defined household.<br>• Can use neither, instead using the Household reference from the StudentContactRelationship data object. |
| StudentContactPersonal | Data object includes:<br>• AddressList, PhoneList, & EmailList fields<br>• HouseholdContactInfoList which can either **define** a household or **reference** a previously defined household.<br>• Can use neither, instead using the Household reference from the StudentContactRelationship data object. |
| StudentContactRelationship | Data object includes:<br>• HouseholdList which can reference a previously defined household (on either StudentPersonal or StudentContactPersonal data objects) |
| StaffPersonal | Data object includes:<br>• AddressList, PhoneList, & EmailList fields<br>• HouseholdContactInfoList which can either **define** a household or **reference** a previously defined household. |

It is up to individual SIF implementation projects to decide which of these mechanisms are to be used in any particular implementation. Options include:

- Address, Phone & Email list fields directly on all three person role data objects.
- Address, Phone & Email list fields directly on StaffPersonal data object; and via household on StudentPersonal and StudentContactPersonal data objects.
- Directly on StaffPersonal, via household for StudentPersonal data objects, and via StudentContactRelationship household for whānau members.
- Vice versa, directly on StaffPersonal, via household for StudentContactPersonal data objects, and via StudentContactRelationship household for students.

## 3 Student Personal Data Object

From the conceptual and logical models presented above, the StudentPersonal data object is implemented (with StudentPersonal and StudentPersonals as the matching API endpoints), with structure as depicted:

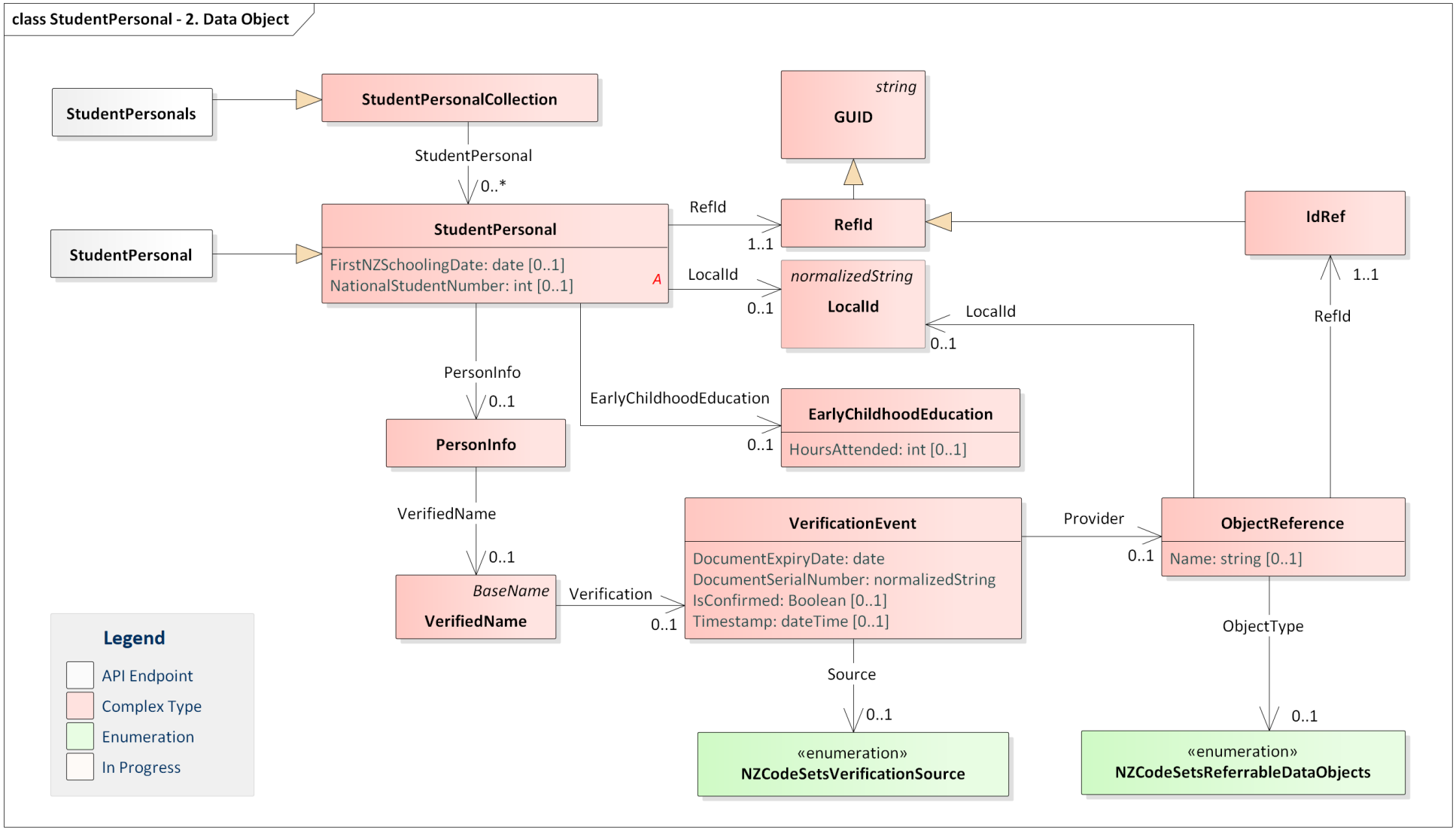


*Figure 9: StudentPersonal Data Object*

## 3.1 Student Personal – Core Identity

The core identity data of Students is collected via the StudentPersonal person Info structure:

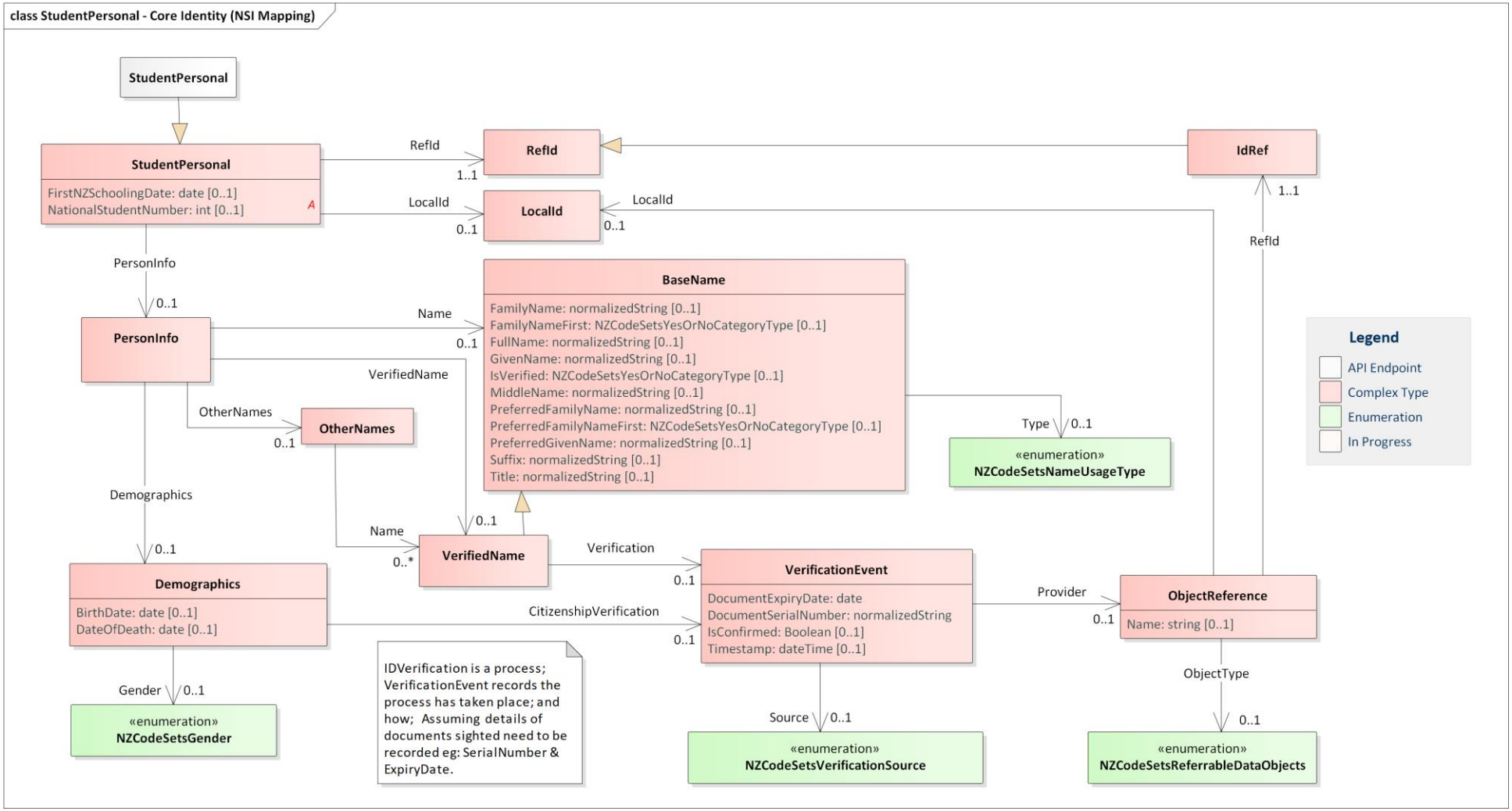


*Figure 10: Student Personal - Core Identity*

## 3.2 Student Personal – Household, Address & Communication Channels

All types of person share the same set of contacts, and communication channels, for Students, they can be attached directly to the person or via a Household.

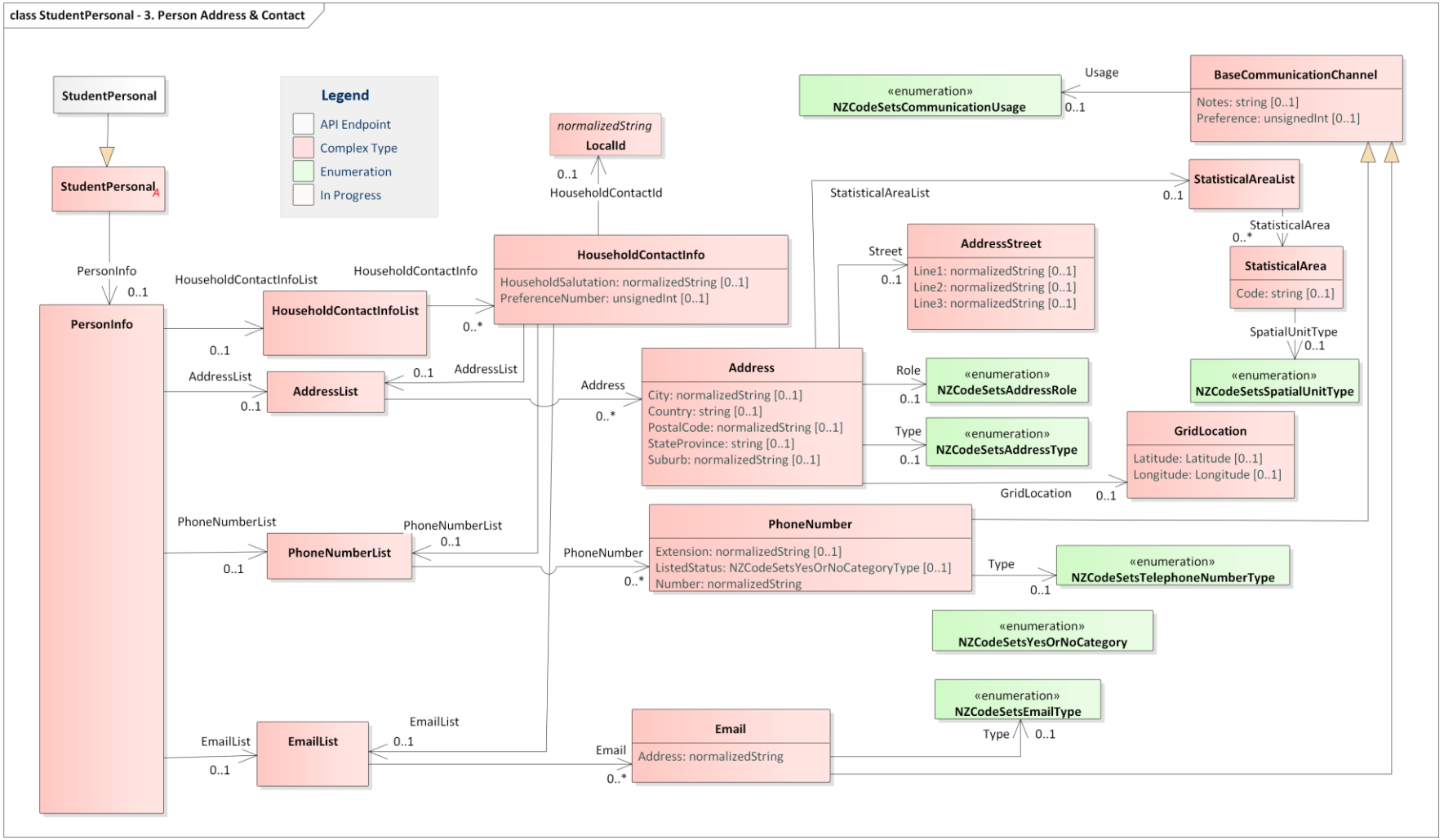


*Figure 11: Student Contact – Household, Address & Communication Channels*

## 3.3 Student Personal – Demographics

Demographic data is can be collected about all person roles, Students, Staff & Whānau.

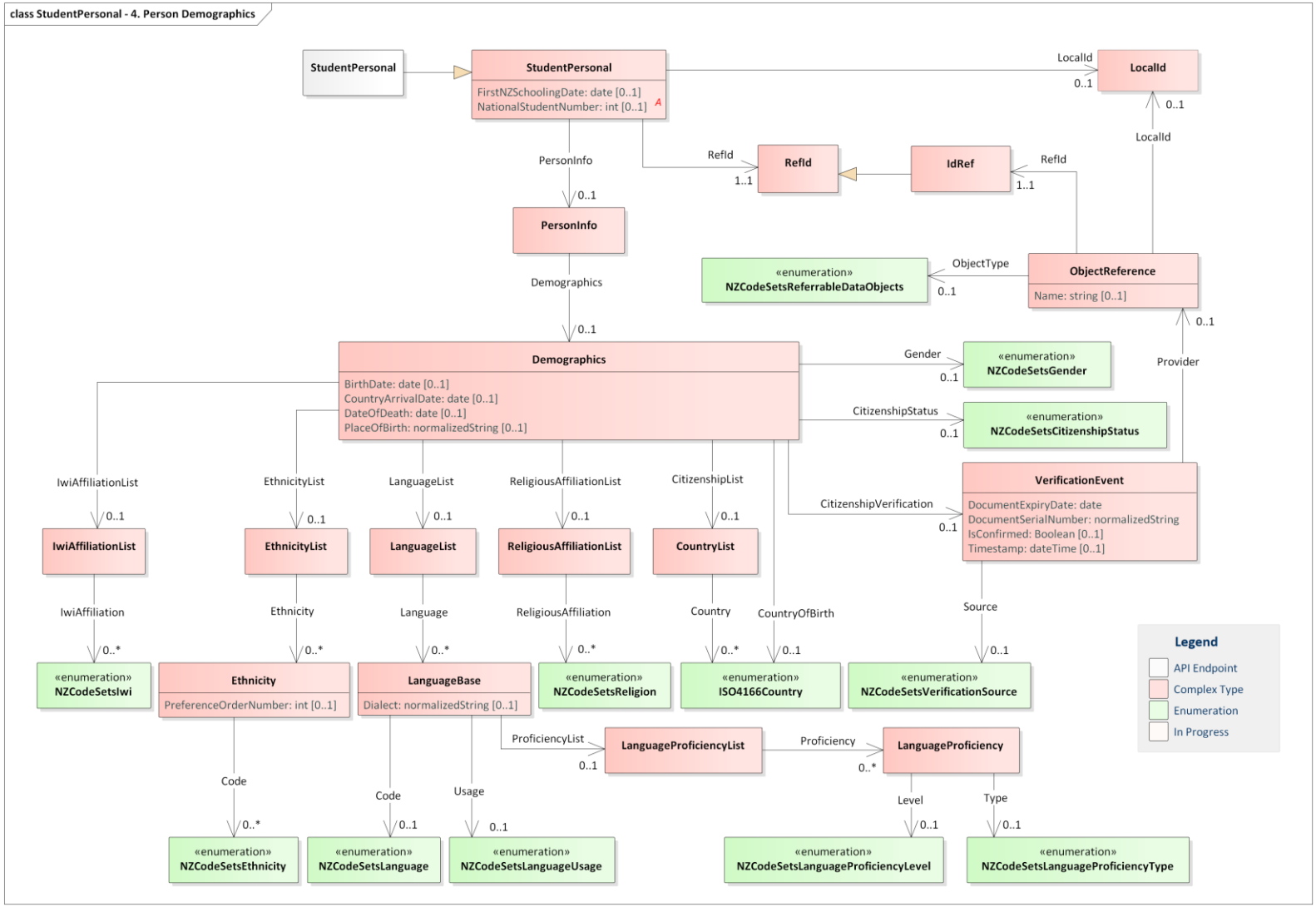


*Figure 12: Student Personal - Demographics*

# 4 Student Contact Personal Data Object

Student's whānau members and healthcare pratitioners are recorded using the StudentContactPersonal data object (with API endpoints):

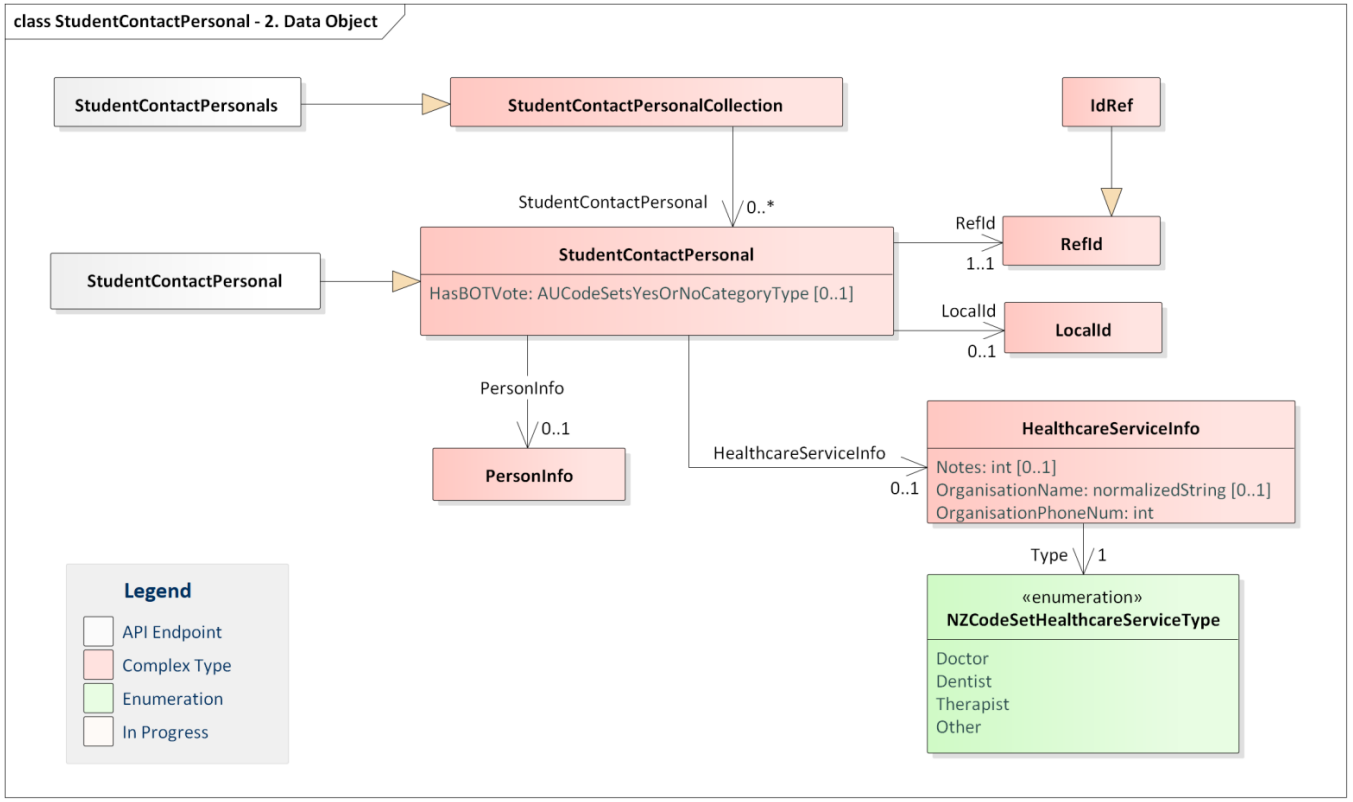


*Figure 13: Student Contact Personal Data Object*

## 4.1 Student Contact Personal – Details

Complexity around multiple names, and demographics may be recorded about StudentContacts.

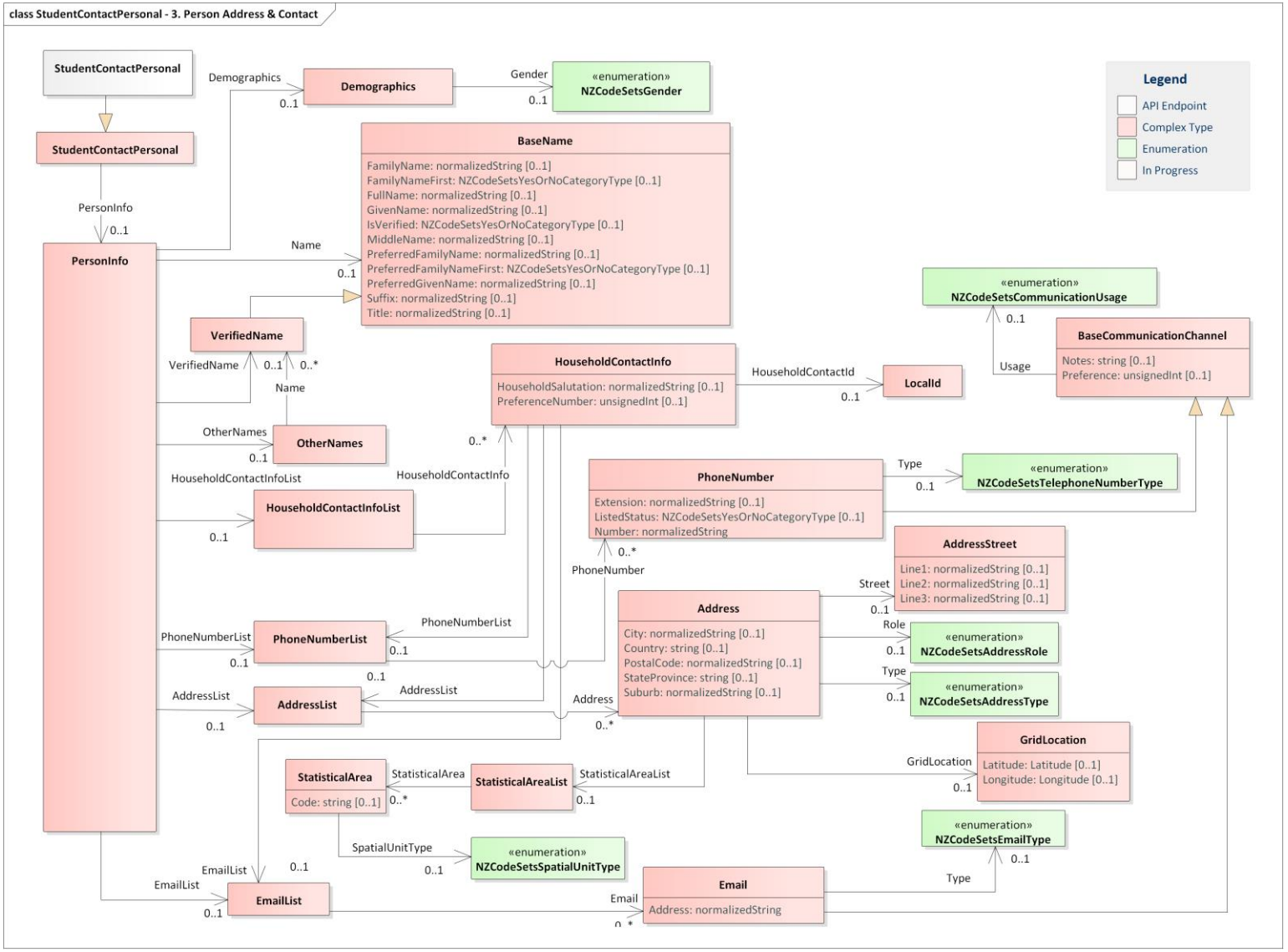


*Figure 14: Student Contact Personal Details*

## 4.2 Healthcare Providers and Practitioners

Details of a Student's healthcare providers and practitioners are recorded in the StudentContactPersonal data object, using the HealthcareServiceInfo complex type that has been added to the StudentContactPersonal object in the SIF NZ Data Model.

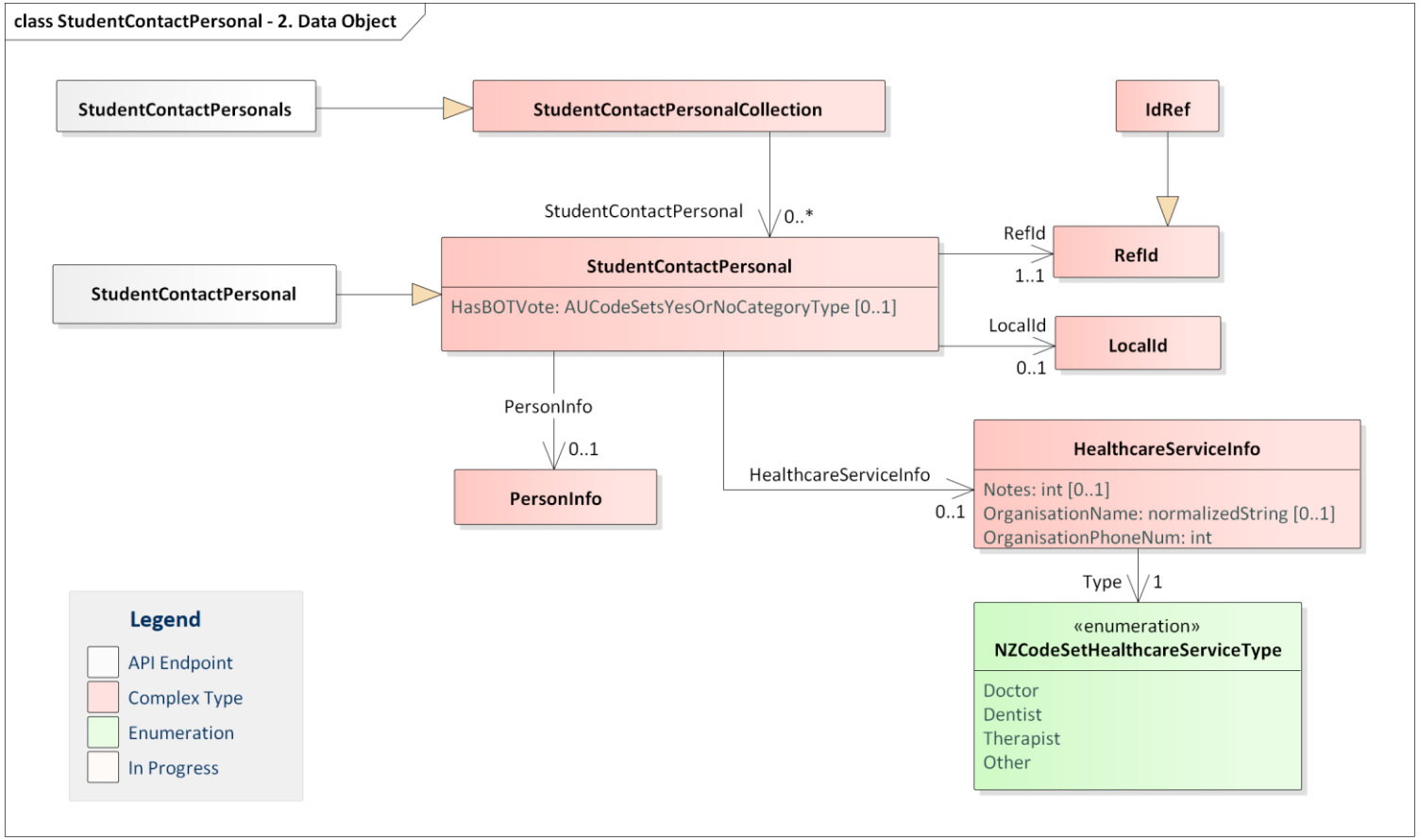


*Figure 15: Healthcare Practitioner Details*

# 5 Student Contact Relationship Data Object

The relationships between Students and their whānau members are recorded using the StudentContactRelationship data objects (with matching API end points).

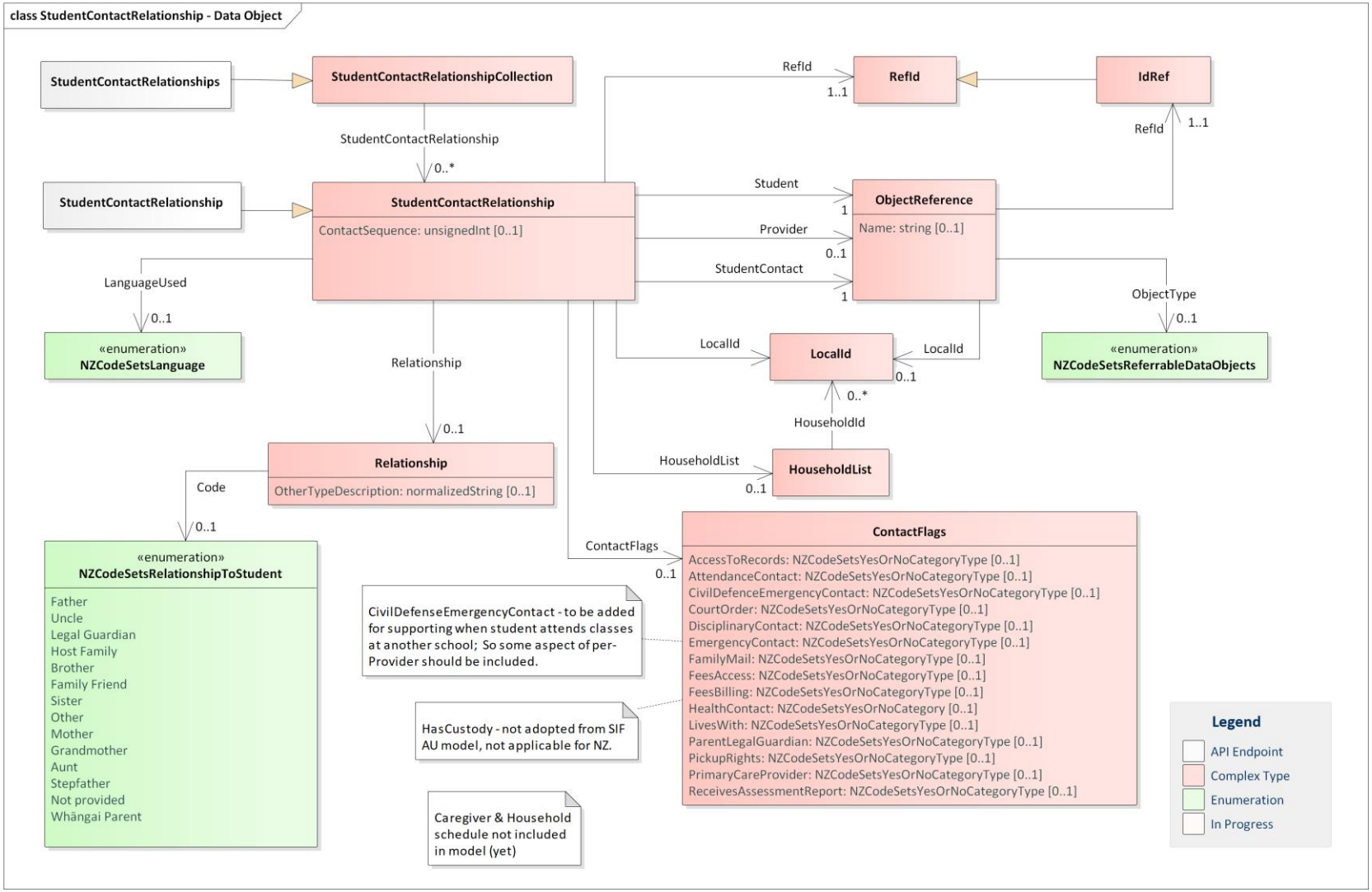


*Figure 16: Student Contact Relationship Data Object*

# 6 Staff Personal Data Object

Staff members details are recorded using the StaffPersonal data object (with API endpoints):

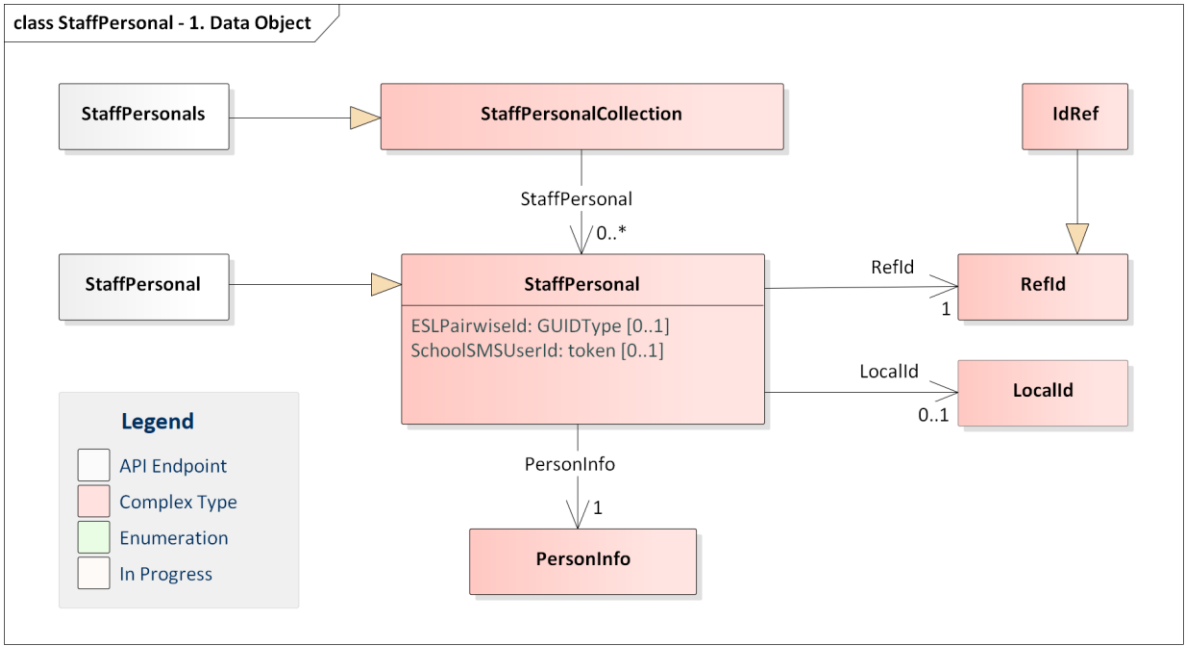


*Figure 17: Staff Personal Data Object*

## 6.1 Staff Personal Details

Complexity around multiple names may be recorded about staff members:

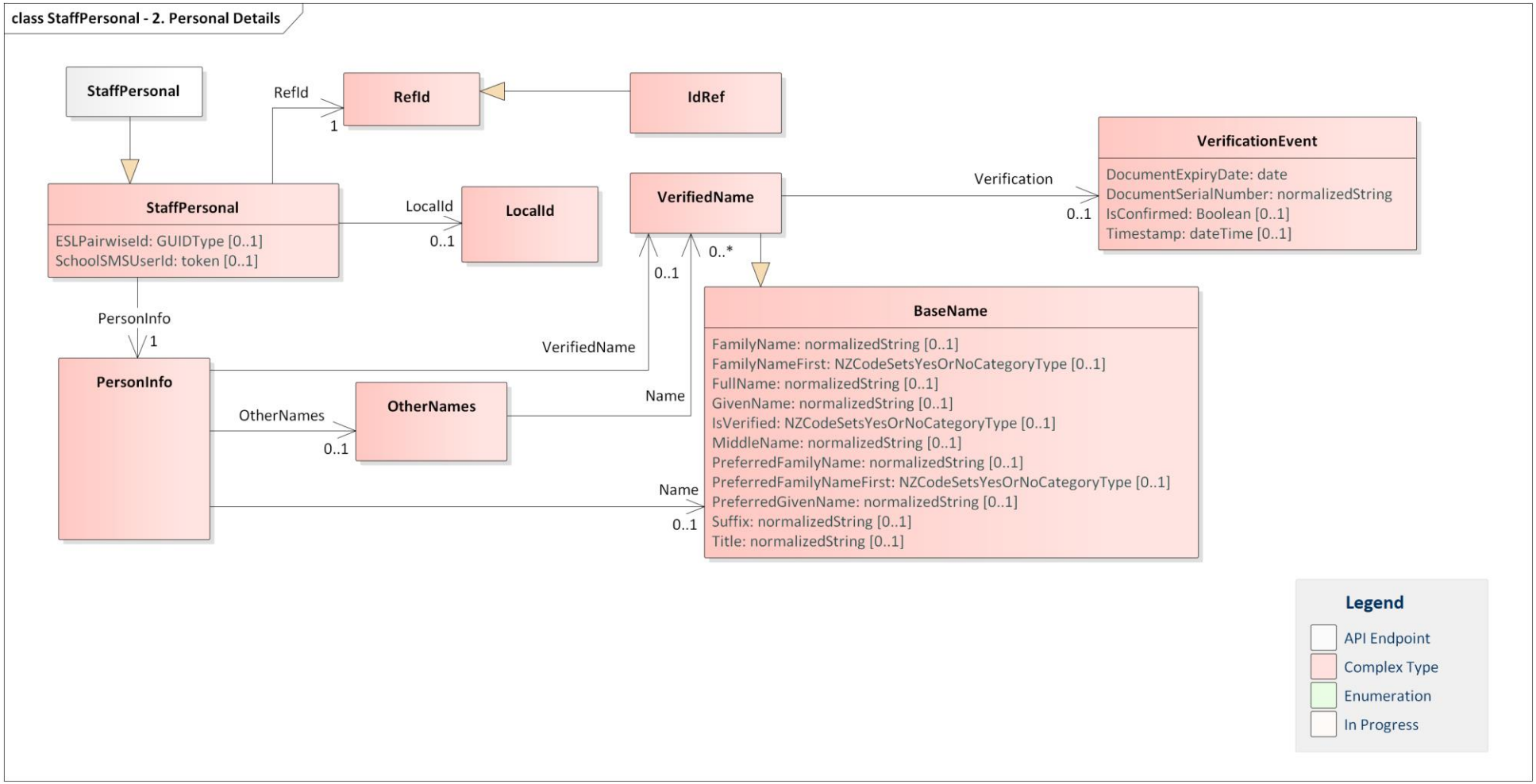


*Figure 18: Staff Personal Details*

# 7 Staff Assignment Data Object

Assignment of staff members to roles within Schools (and other Providers) as well as general Education Organisations (such as Kāhui Ako) are recorded in the StaffAssignment data object (with API endpoints).

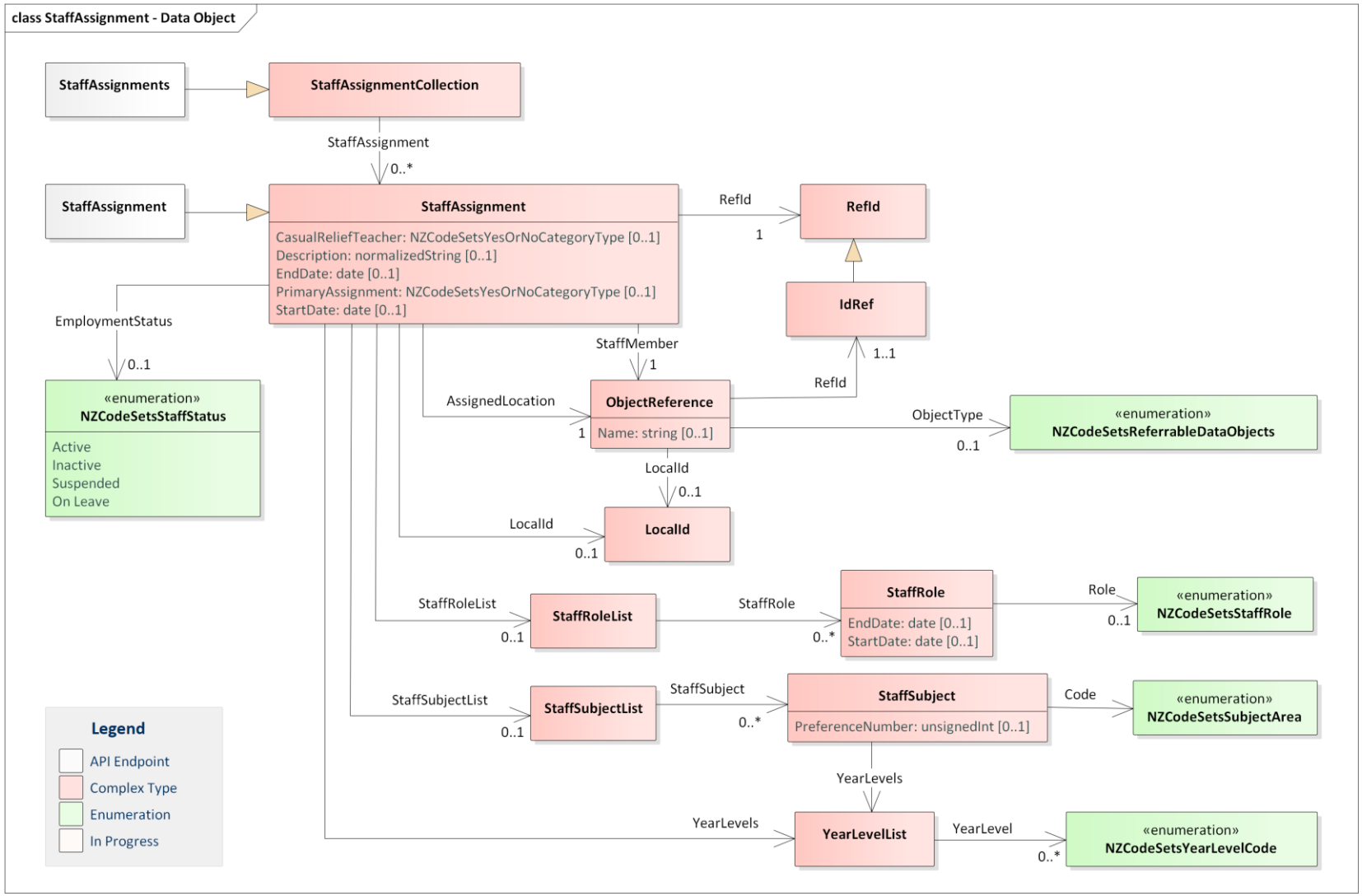


*Figure 19: Staff Assignment Data Object*

# 8 Staff Teaching Group Assignment Data Object

Assignment of staff members to roles with respect to particular TeachingGroups are recorded in the StaffTeachingGroupAssignment data object (with API endpoints).

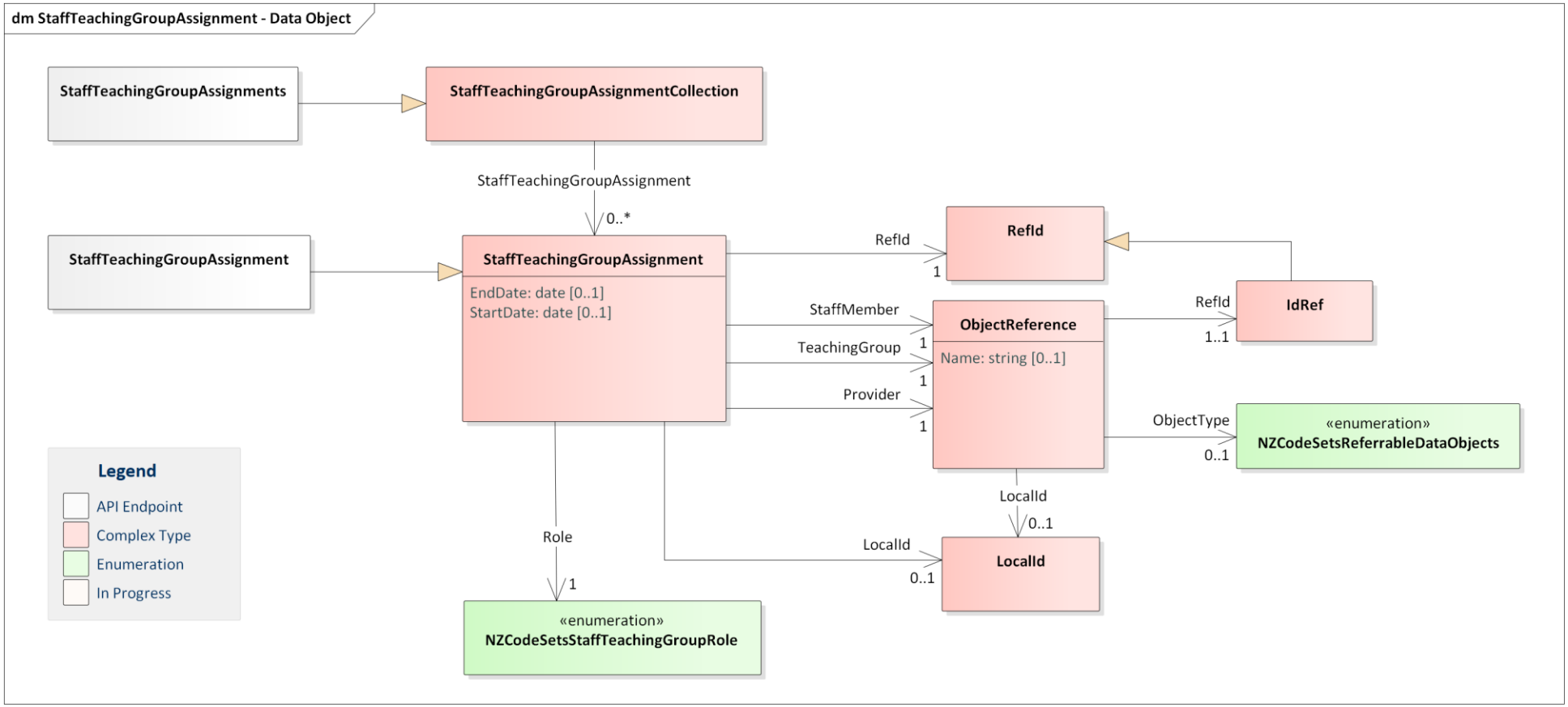


*Figure 20: Staff Teaching Group Assignment*

# 9 Document Control

## 9.1 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 | 29 Jun 2018 |
| 0.2 | Added HealthcareServiceInfo complex type to StudentContactPersonal data object. | Stuart McGrigor | 19 Jul 2018 |
| 0.3 | Identity, Citizenship and Eligibility verification processes have source attributes recording details of a source document, or the Principal exercising their discretion, in the verification process. | Stuart McGrigor | 30 Jul 2018 |
| 0.4 | PersonInfo and BasePersonInfo recombined back to just PersonInfo. | Stuart McGrigor | 31 Jul 2018 |
| 0.5 | Added StaffAssignment data object, to record assignment of staff members to roles at Providers and EducationOrganisations. | Stuart McGrigor | 7 Sep 2018 |
| 0.6 | Added diagram on person contact details via households; particularly for Students. | Stuart McGrigor | 30 Oct 2018 |
| 1.0 | Added StaffTeachingGroupAssignment data object; Using generic object references; update to match SIF NZ v3 (rc1); | Stuart McGrigor | 4 Jul 2019 |