



Joint Council for
Qualifications^{CIC}



JCQ^{CIC} A2C Data Standards Specification

Appendix 4

Data Architecture Diagrams

2022 Version

28th February 2022

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1 Entity Relationship Diagram Notation

The notation that has been used for the A2C Business Data Architecture diagrams is the notation associated with the Entity Relationship Diagram (ERD). The specific type of notation is that utilised in the data modelling software tool Erwin.

1.1 Entities

An entity is anything in the real world about which the A2C system is required to hold data about in order to support the specified business activities. For example: Learner, Centre, Awarding Organisation and Qualification Element. All entities have a definition. An Entity on the diagram is denoted by a box (green fill) with the name clearly above the box. Entities that are independent of other entities for their existence are depicted with square corners, whereas associative entities that have a dependency on other entities for their existence are depicted with rounded corners.

Different types of entity are coloured as:

Super-type	cyan
Sub-type	straw
Controlled list	red
Reference data	orange
Other	green

1.2 Attributes

An attribute is a specific single valued property of an entity. An attribute may be optional or mandatory. An attribute is considered as mandatory if it is required for uniquely identifying an instance of an entity. Ideally attributes should not contain any embedded logic, but where this was not possible the definition for the attribute includes a relevant statement. An example of embedded logic would be, for example, where the first two characters of a Centre identifier are used to indicate the country of location. Attributes for an entity are shown as a list within the entity box, those above the horizontal line are part of the unique identifier for the entity and those below the line are regarded as optional.

1.3 Primary Keys

A primary key is the attribute or group of attributes that uniquely identifies an instance of an entity. The primary key on a diagram is denoted by a horizontal line across the entity and attribute(s) that comprise the primary key are shown above this line.

1.4 Super and Subtype Entities

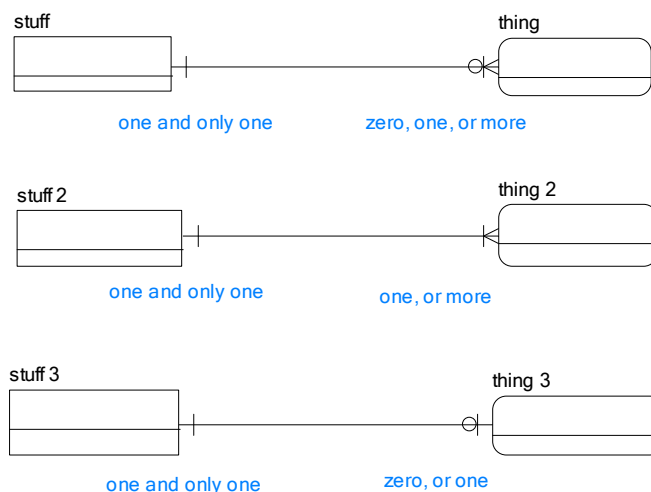
An entity may have a logical subset that is defined by one or more specific properties (attributes), or by a specific relationship to another entity. A super and subtype construct is used and the inherent relationship between a super type and a subtype is always hierarchical (parent, child). The subtype inherits all the properties of the super type, but in addition will have attributes of its own. A super type subtype is denoted on a diagram as a box (yellow fill) with rounded corners, whereas the super type entity box has a cyan fill. A semi-circle with a cross inside it denotes the existence of subtypes and has a label that indicates the attribute(s) that distinguish a subtype.

1.5 Relationships

A relationship indicates two entities are related to each other in the real world, which may be reflective of a specific business rule. A relationship is denoted on a diagram by a line joining two entities and the nature of the relationship may be specified by text associated with the line. The line may be depicted as solid (identifying - the parent primary key attribute(s) are part of the child entity primary key), or dotted (non-identifying - the parent primary key attribute(s) are optional attributes of the child entity).

Relationship lines on a diagram can also indicate if the relationship is optional at either end of the line (zero occurrences) and the cardinality (numeric relationship of 1 or many).

Examples are:



A recursive relationship is an instance of a hierarchical relationship where instances of an entity are related to instances of the same entity.



1.6 Foreign Keys

Support for relationships on a data model requires additional attribute(s) to be added to the child entity of a relationship between 2 entities. The child entity is represented by the many end of a one (or zero, one) to many relationship. The additional attribute(s) are those that comprise the primary key of the parent entity in the relationship (one end). Attributes within an entity that are implementing a foreign key are denoted by a suffix of (FK).

1.7 A2C Domain

For clarity controlled lists are not shown on the domain diagram.

2 A2C Domain

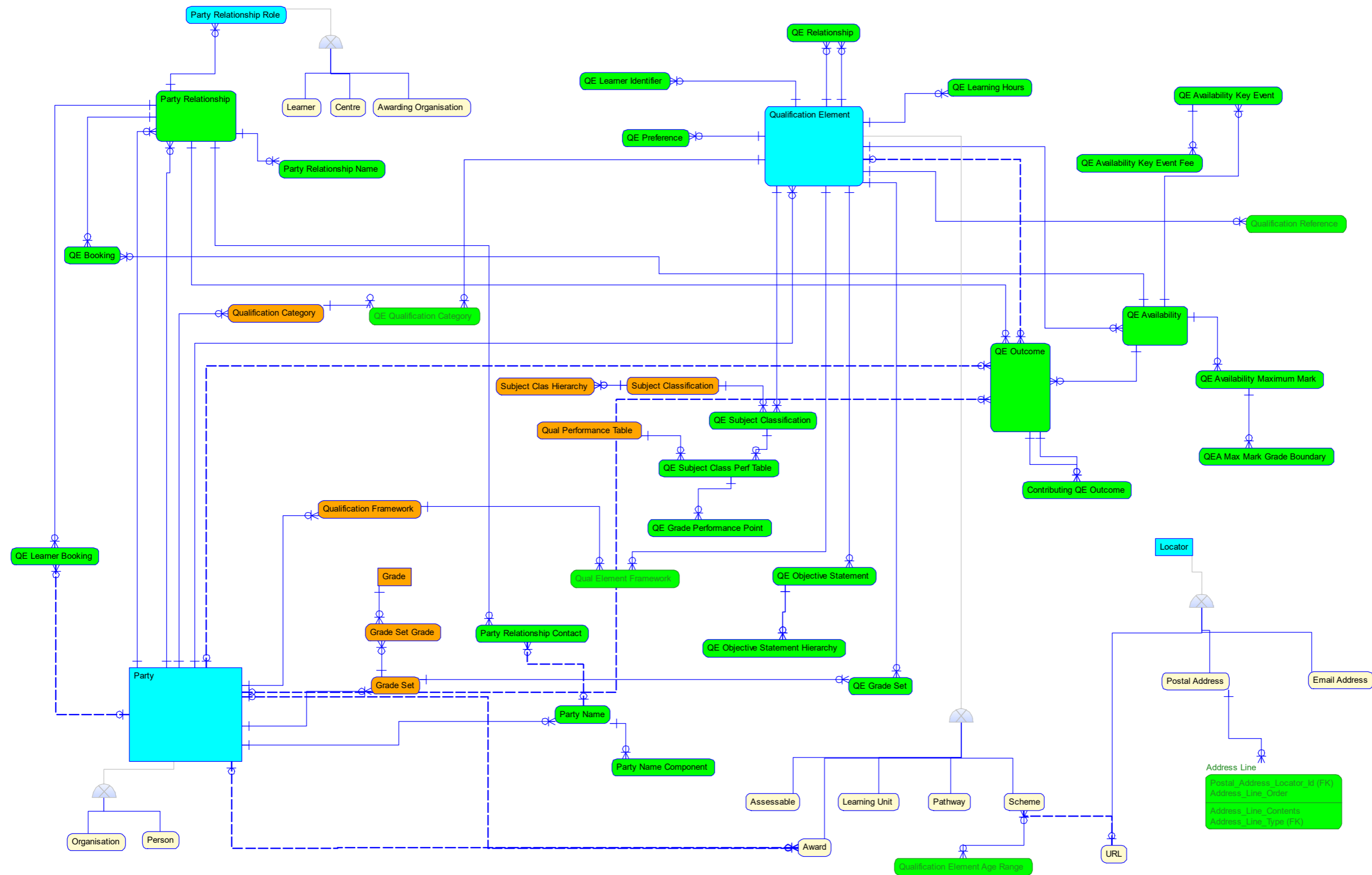


Figure 1 A2C Domain

3 Data Block Diagrams

3.1 Locator Data Block

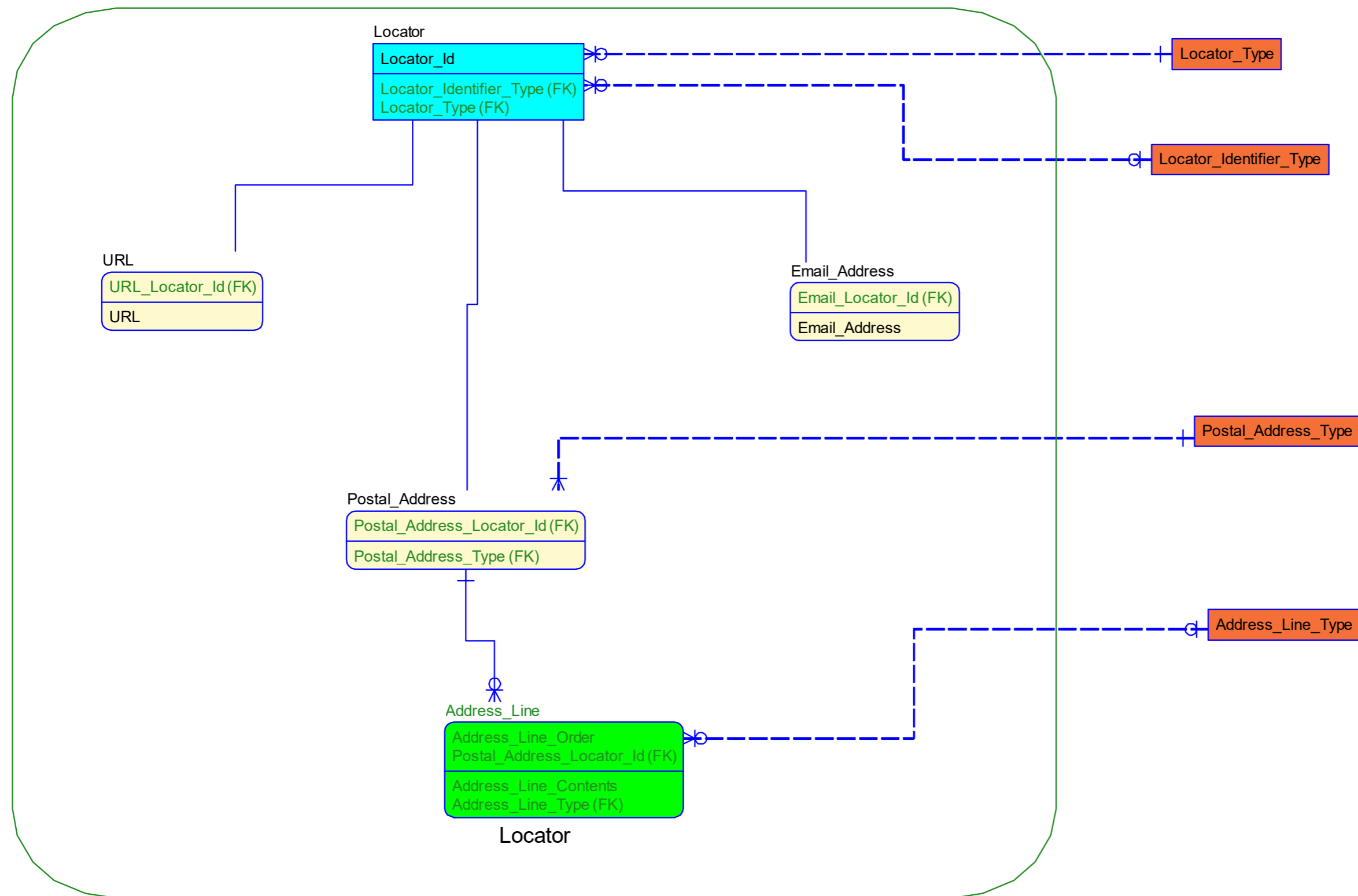


Figure 2 Locator Data Block

3.2 Party Data Block

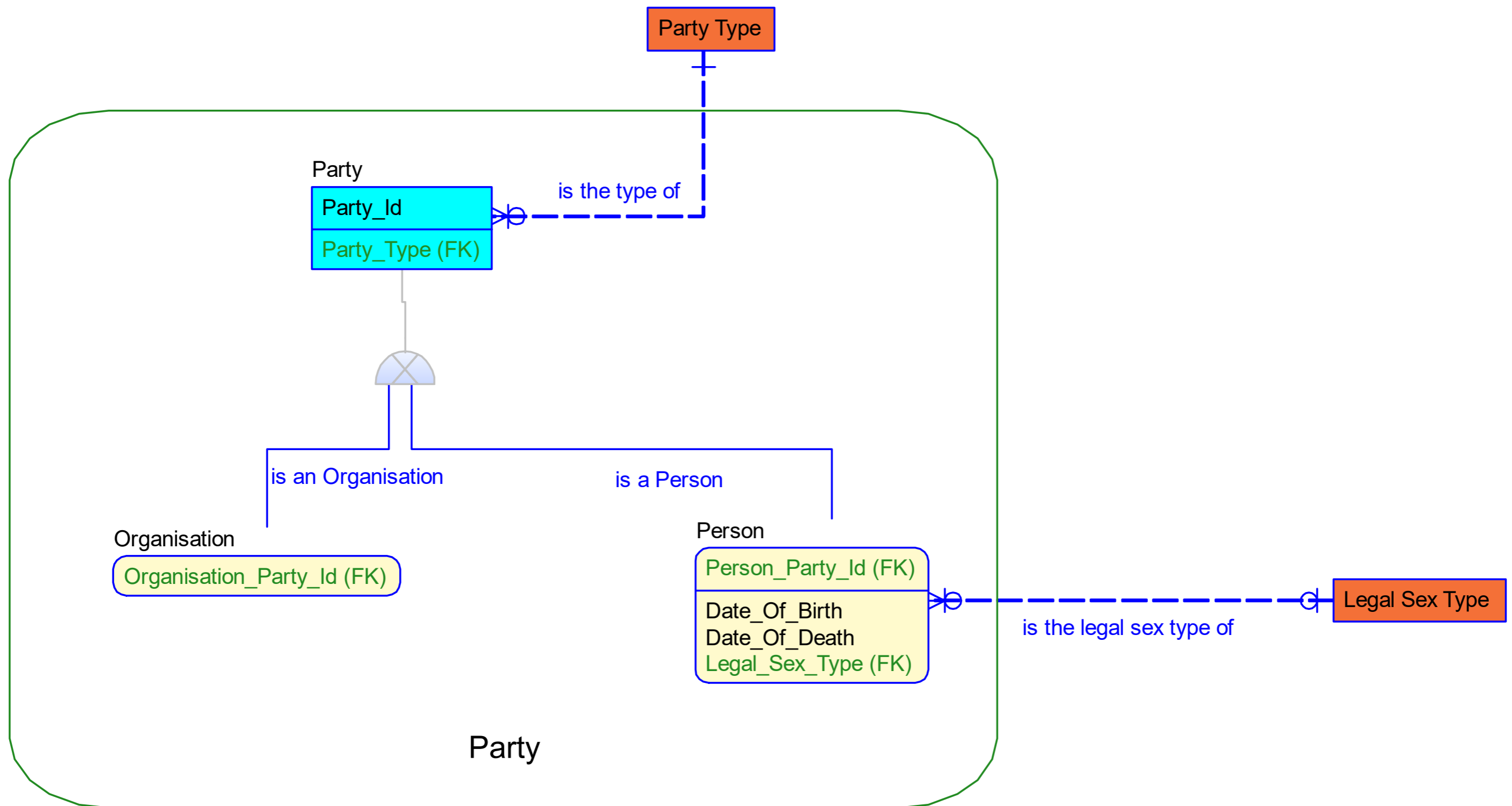


Figure 3 Party Data Block

3.3 Party Name Data Block

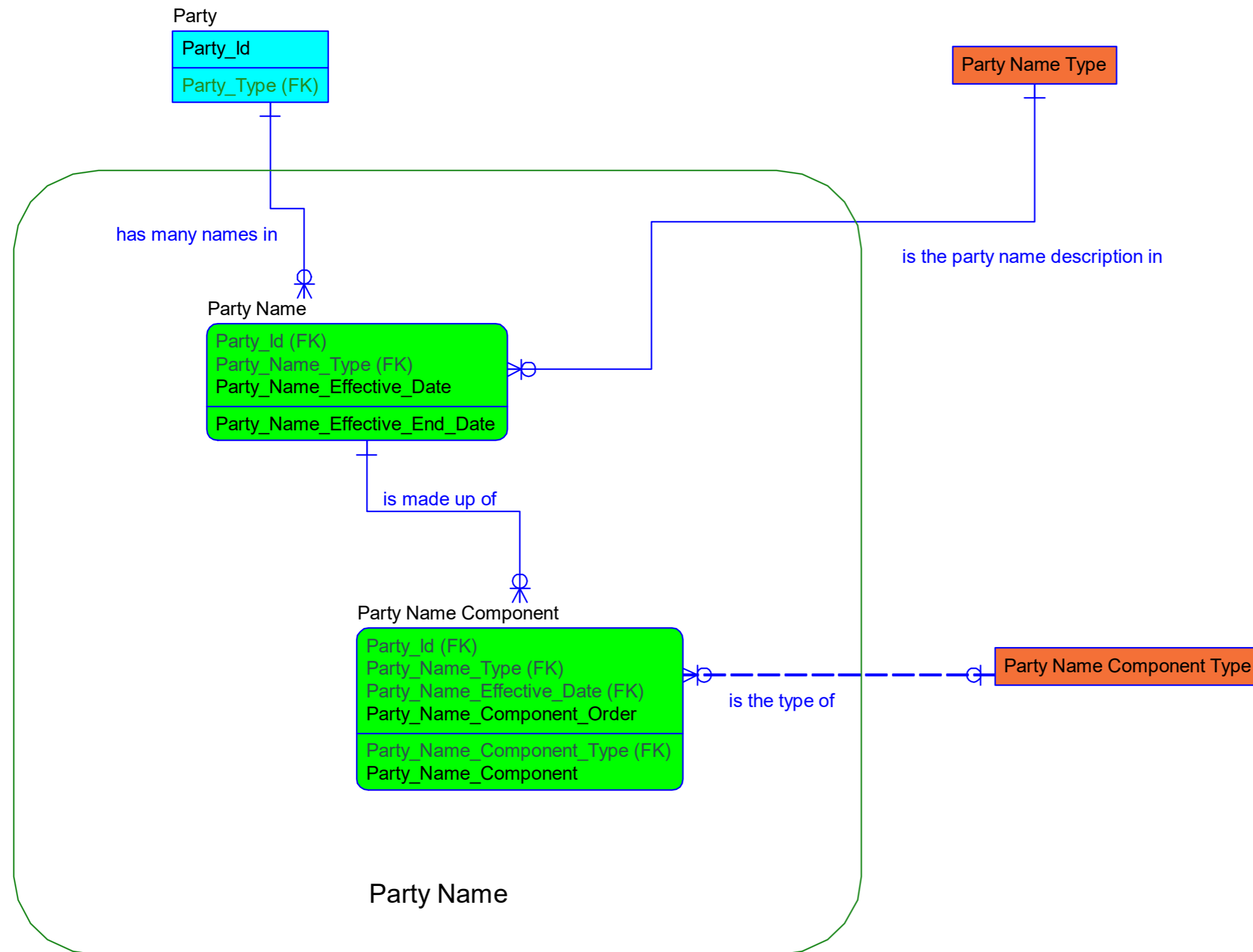


Figure 4 Party Name Data Block

3.4 Party Relationship Data Block

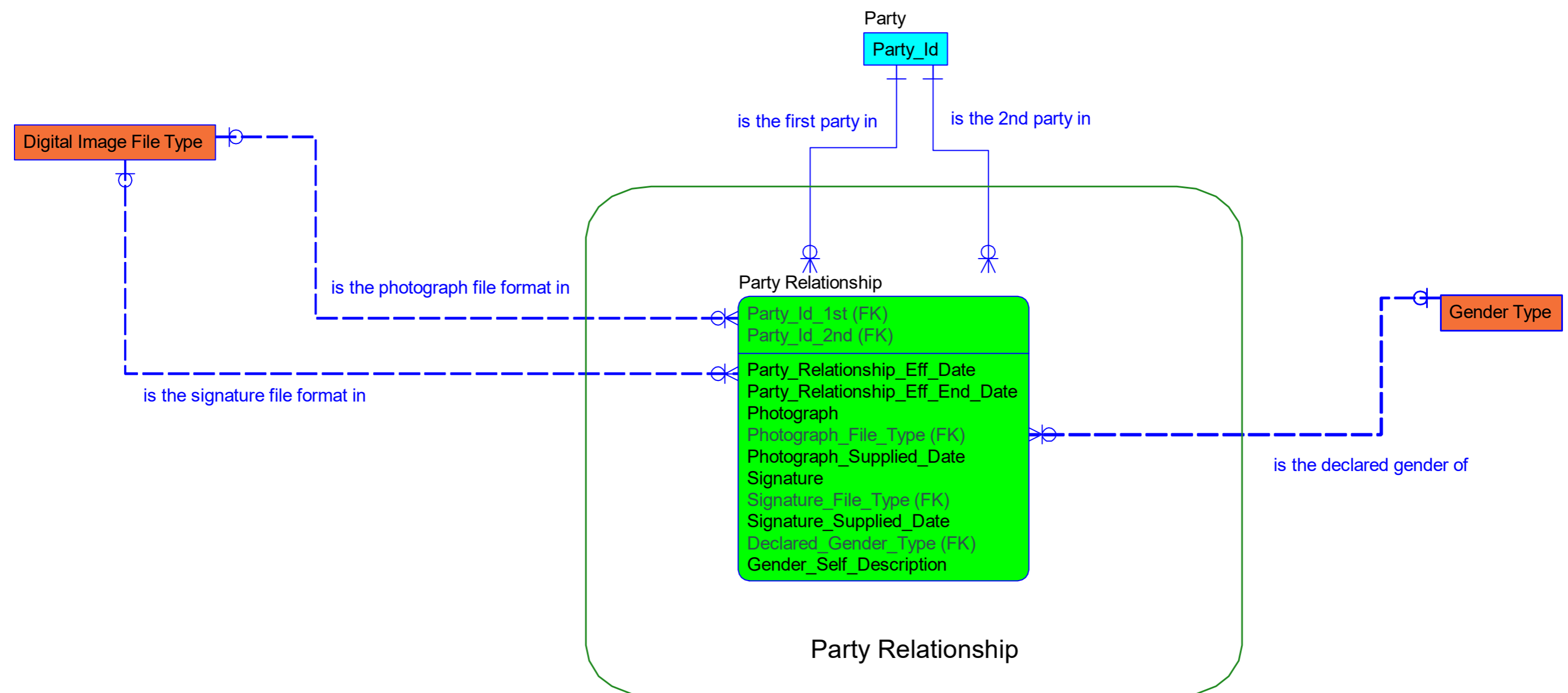


Figure 5 Party Relationship Data Block

3.5 Party Relationship Role Data Block

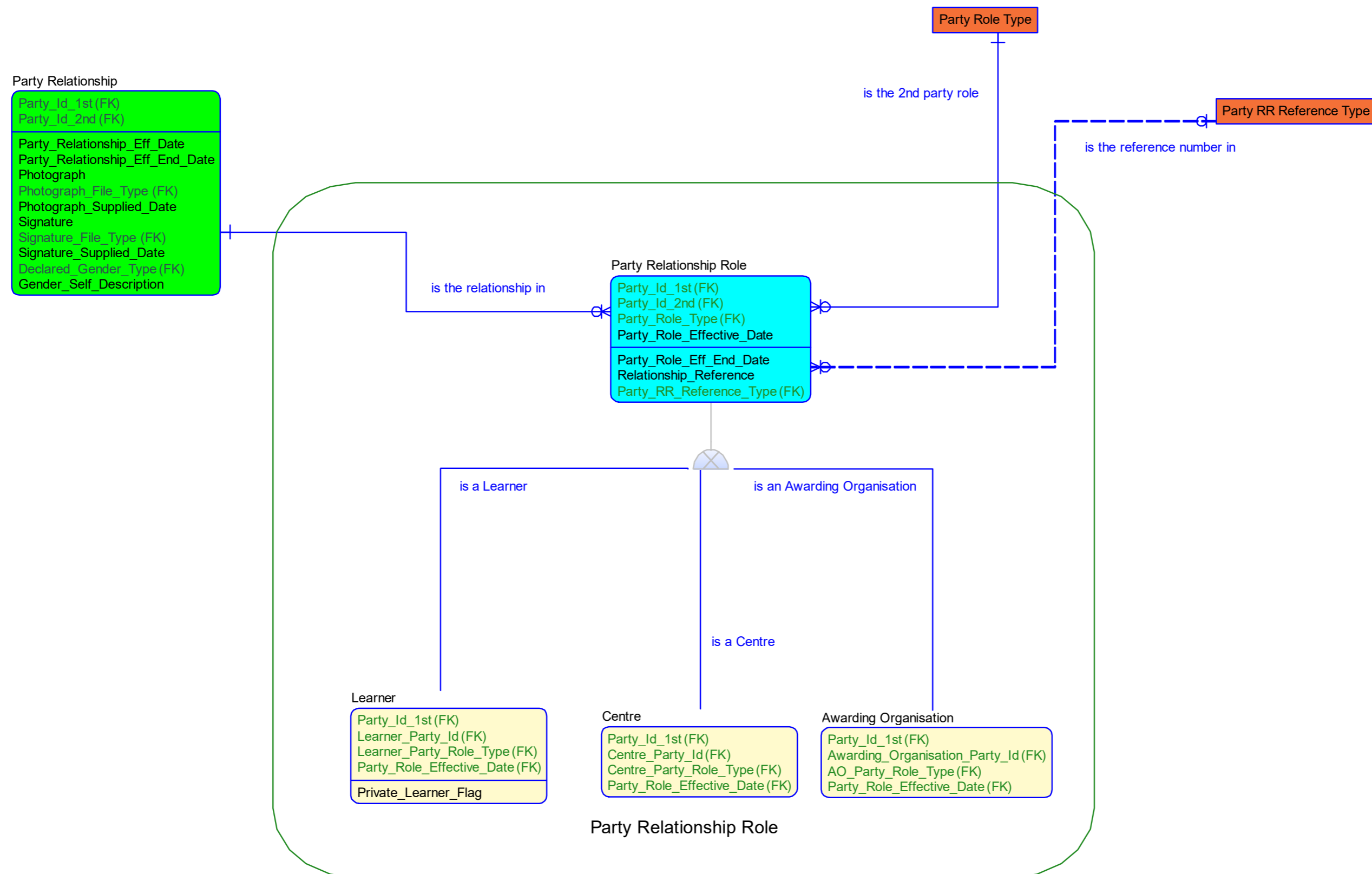


Figure 6 Party Relationship Role Data Block

3.6 Party Relationship Contact Data Block

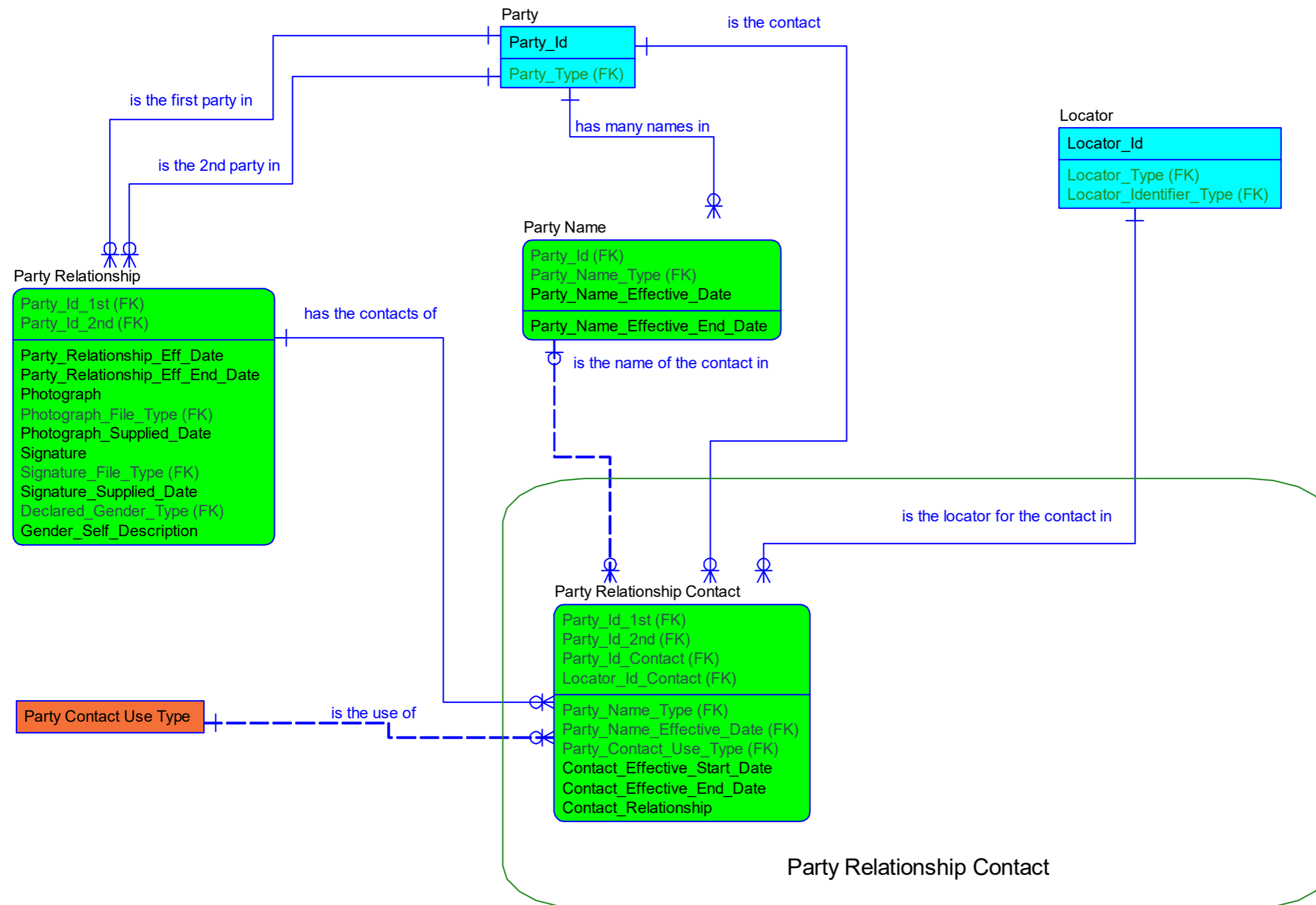


Figure 7 Party Relationship Contact Data Block

3.7 Party Relationship Name Data Block

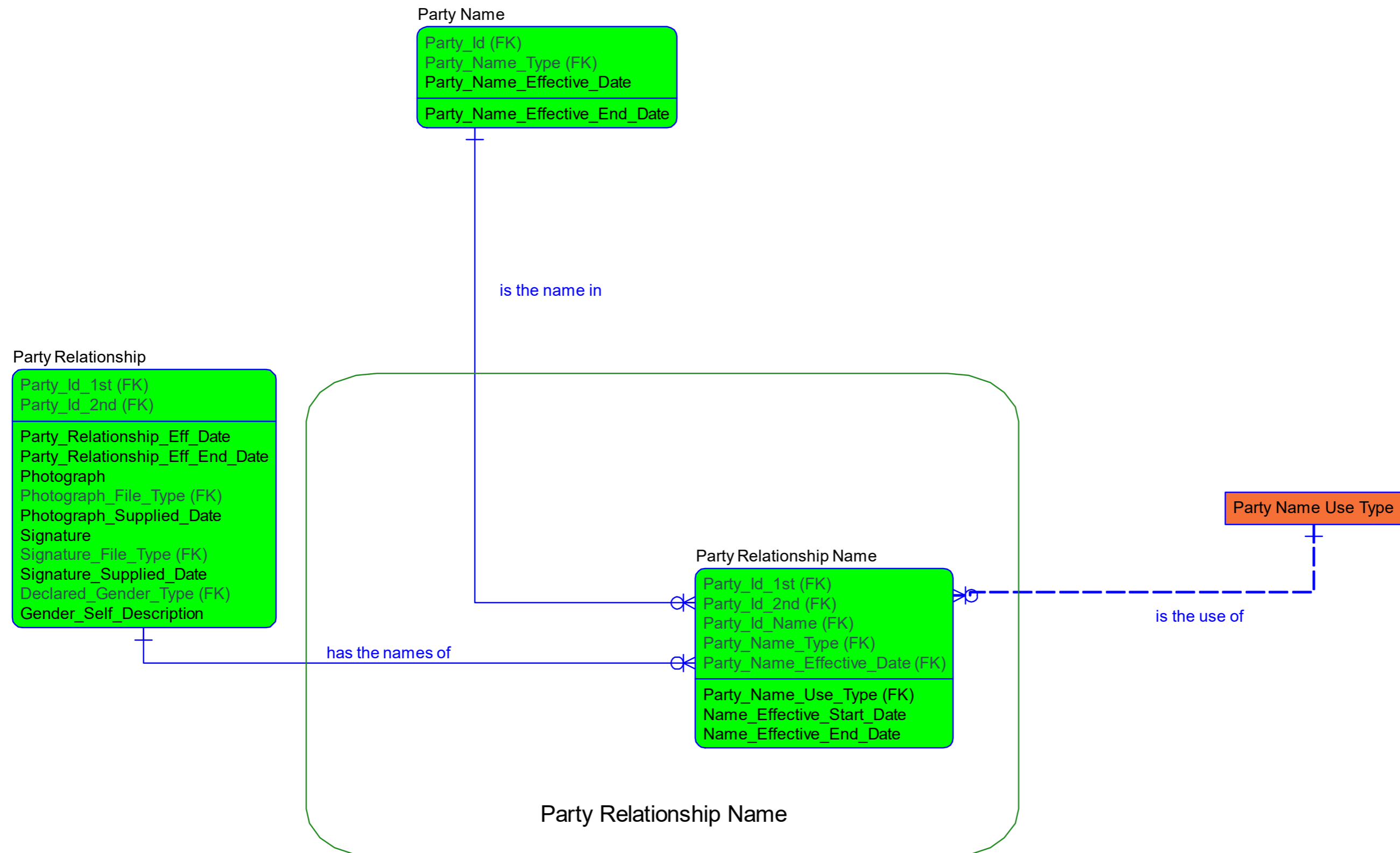


Figure 8 Party Relationship Name Data Block

3.9 QE Learner Identifier Data Block

Qualification Element

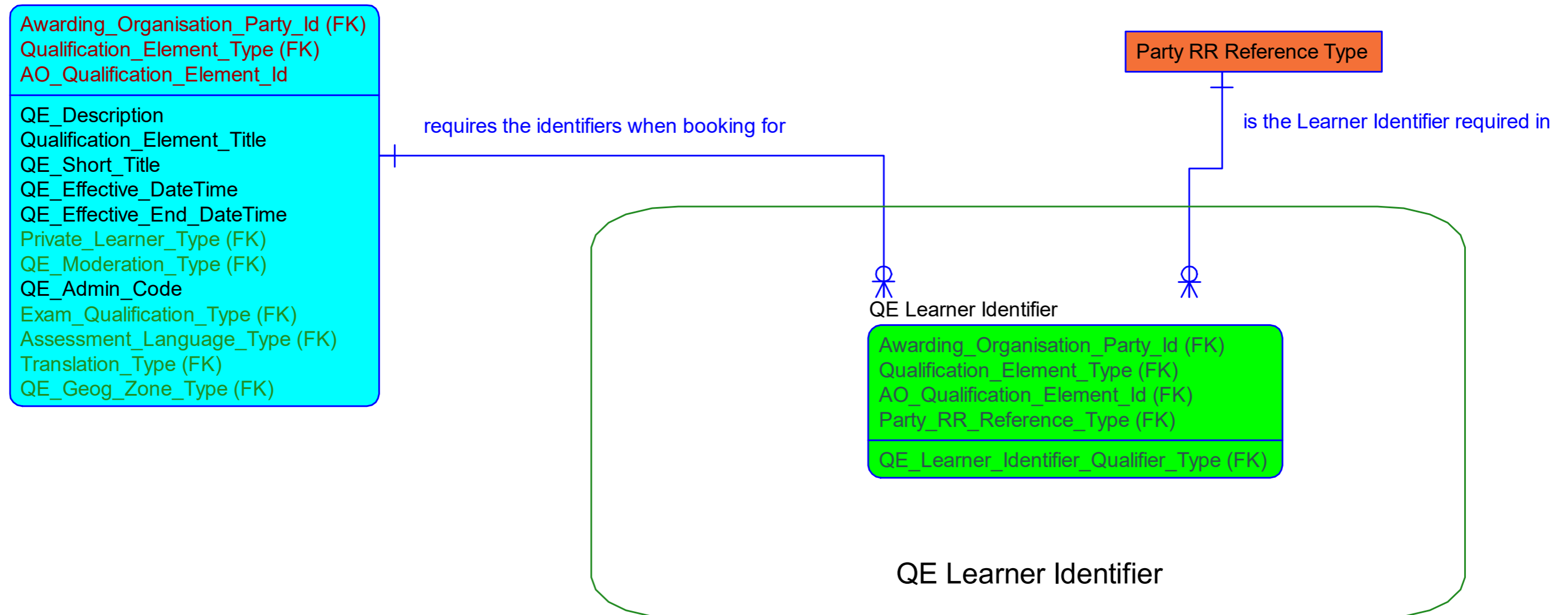


Figure 10 QE Learner Identifier Data Block

3.10Qualification Reference Data Block

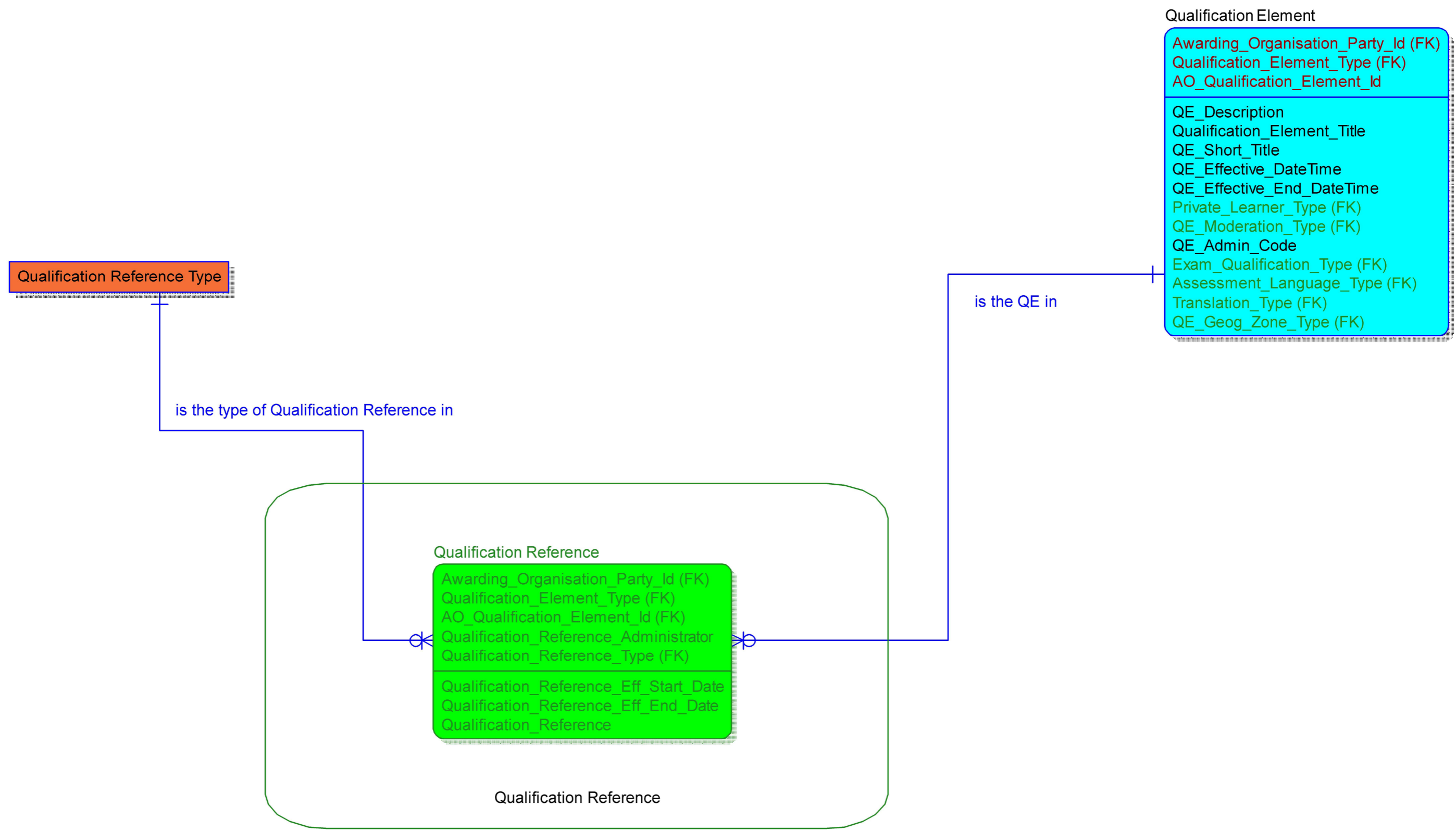


Figure 11 Qualification Reference Data Block

3.11 Qualification Element Age Range Data Block

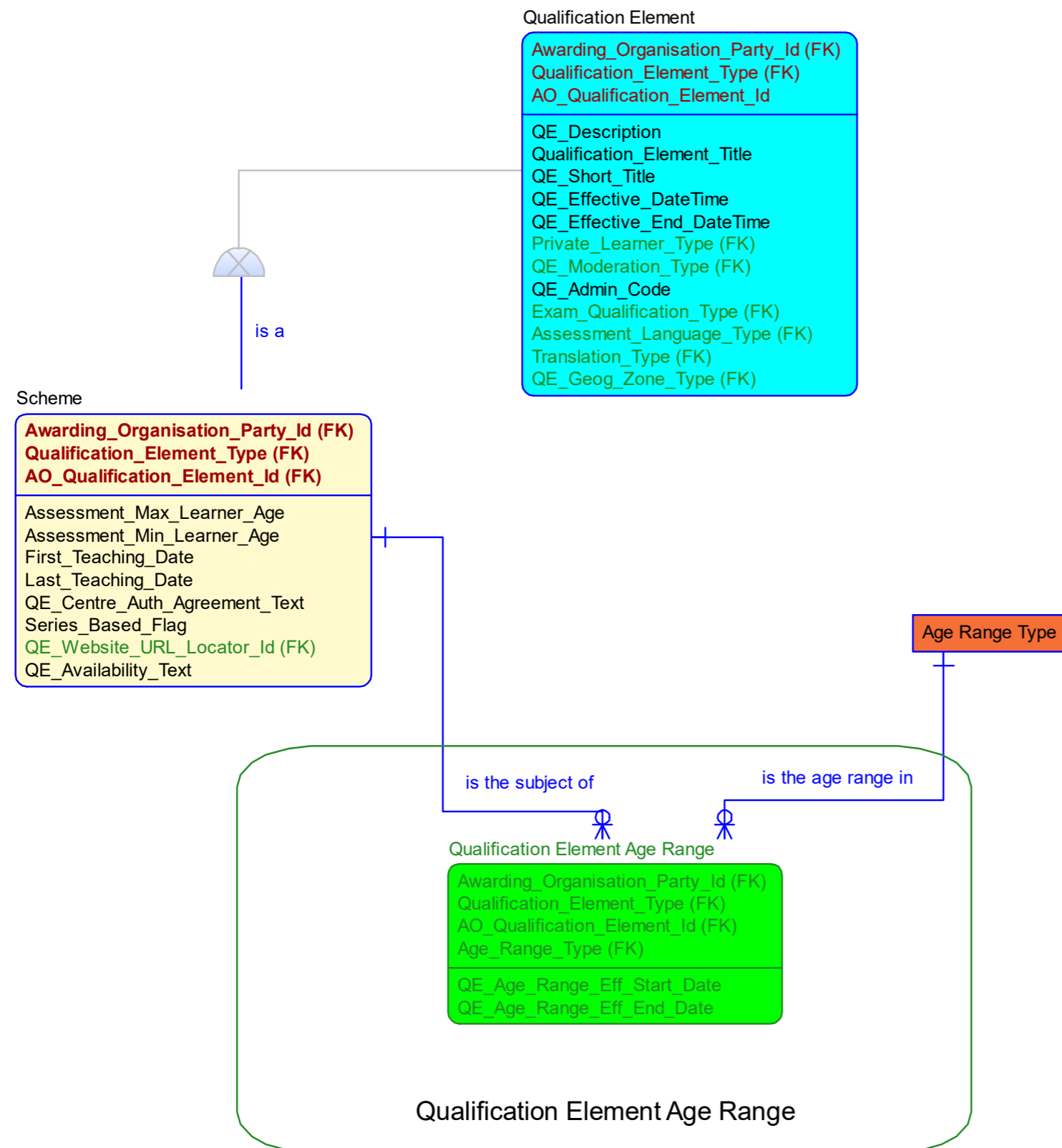


Figure 12 Qualification Element Age Range Data Block

3.12 Qualification Element Framework Data Block

Qualification Element

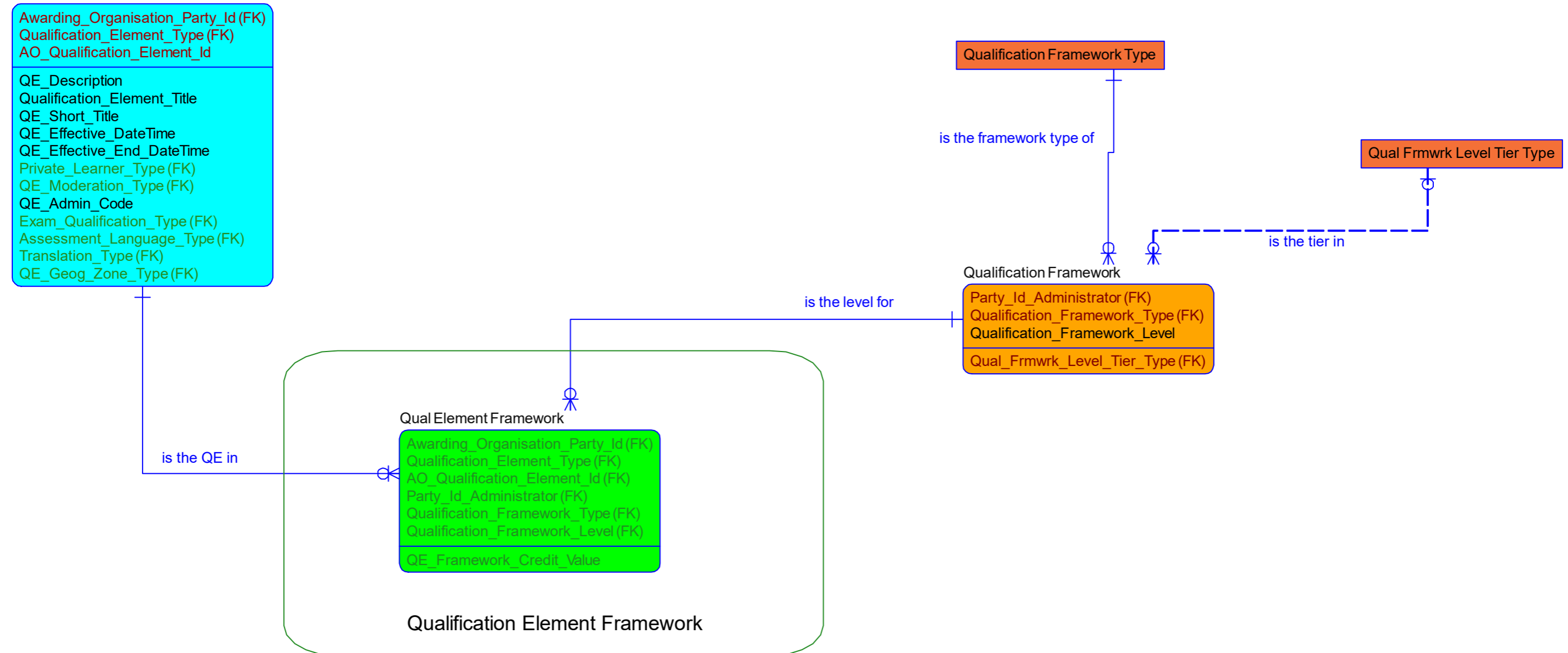


Figure 13 Qualification Element Framework Data Block

3.13QE Availability Data Block

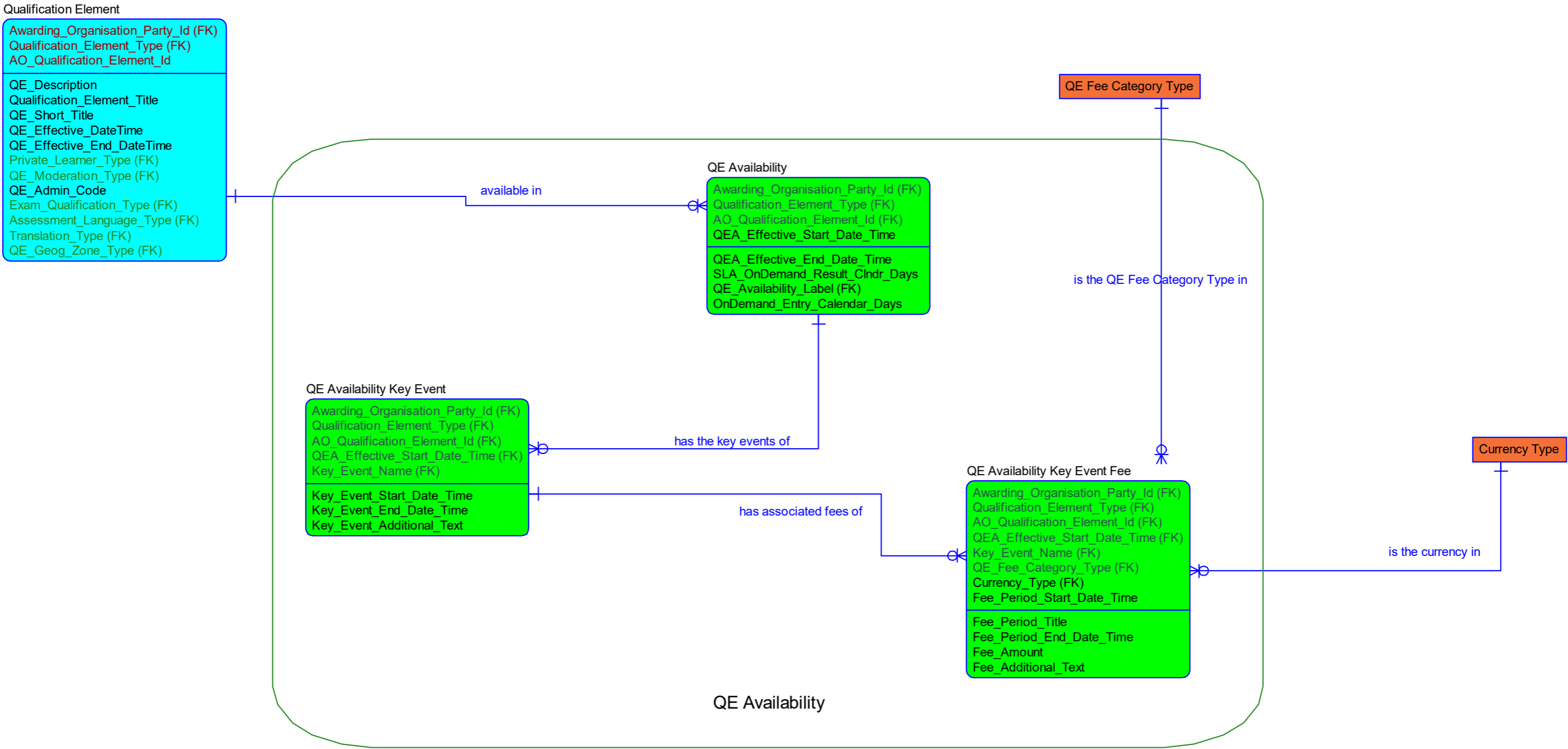


Figure 14 QE Availability Data Block

3.14QE Subject Classification Data Block

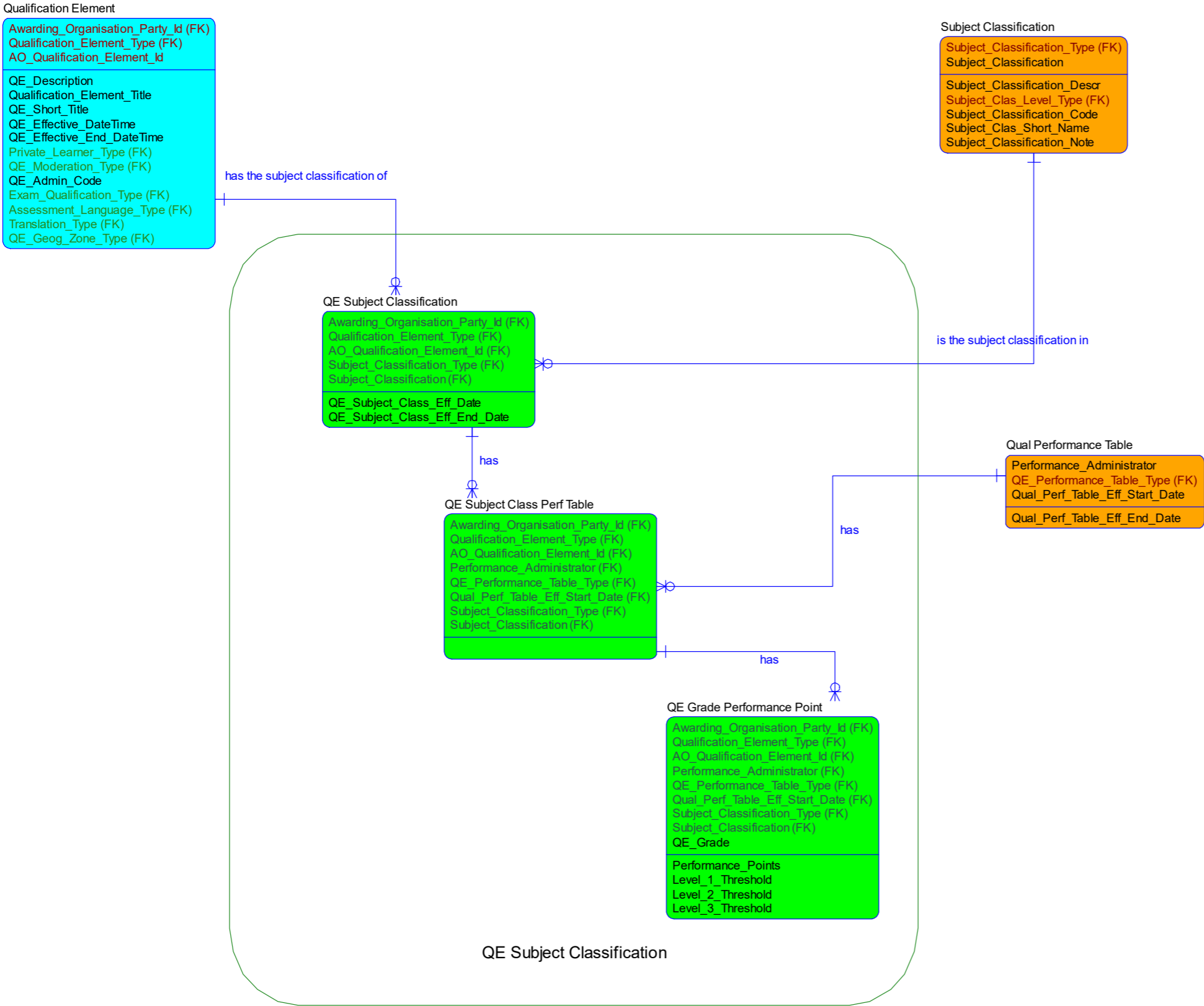


Figure 15 QE Subject Classification Data Block

3.15 QE Booking Data Block

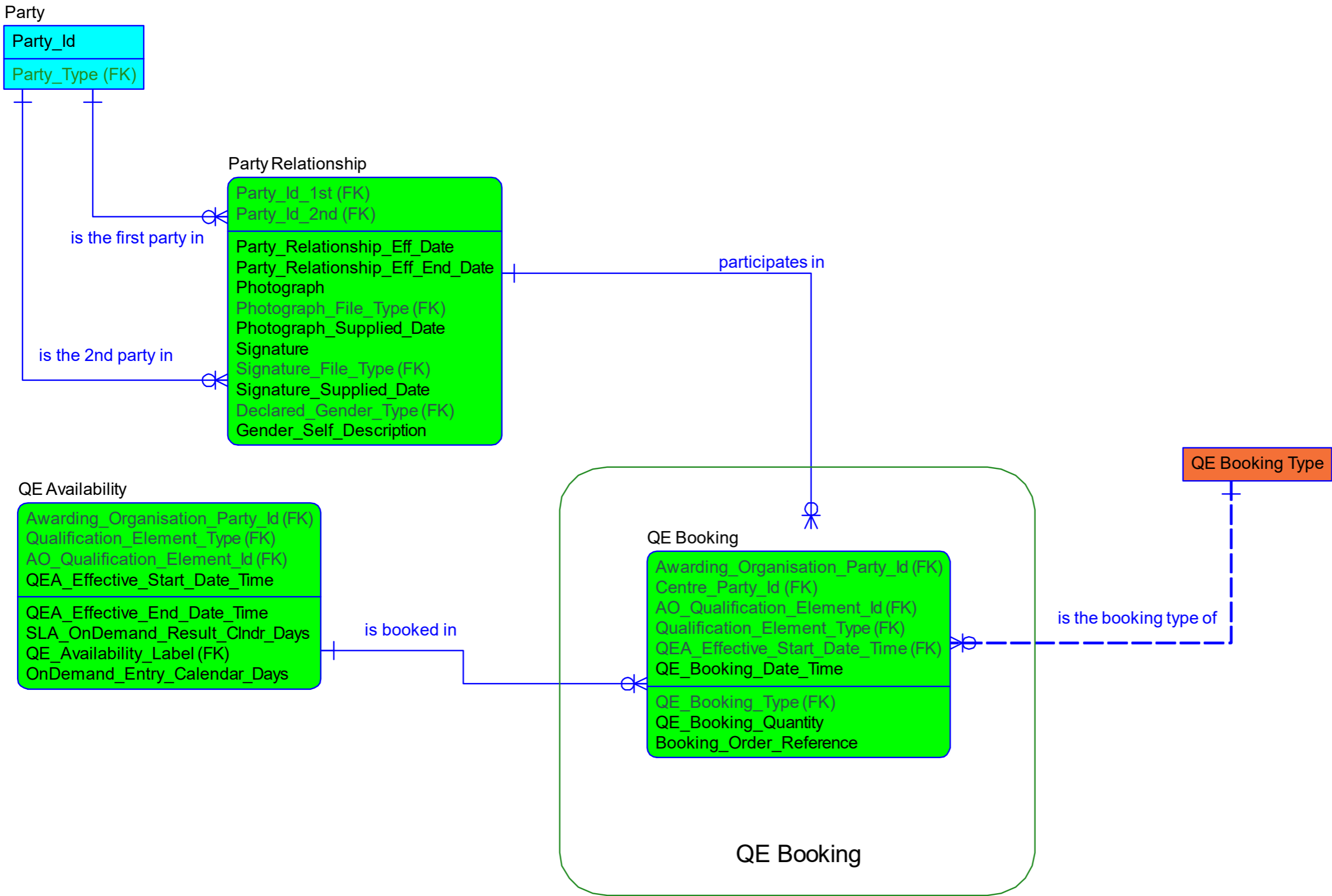


Figure 16 QE Booking Data Block

3.16 QE Learner Booking Data Block

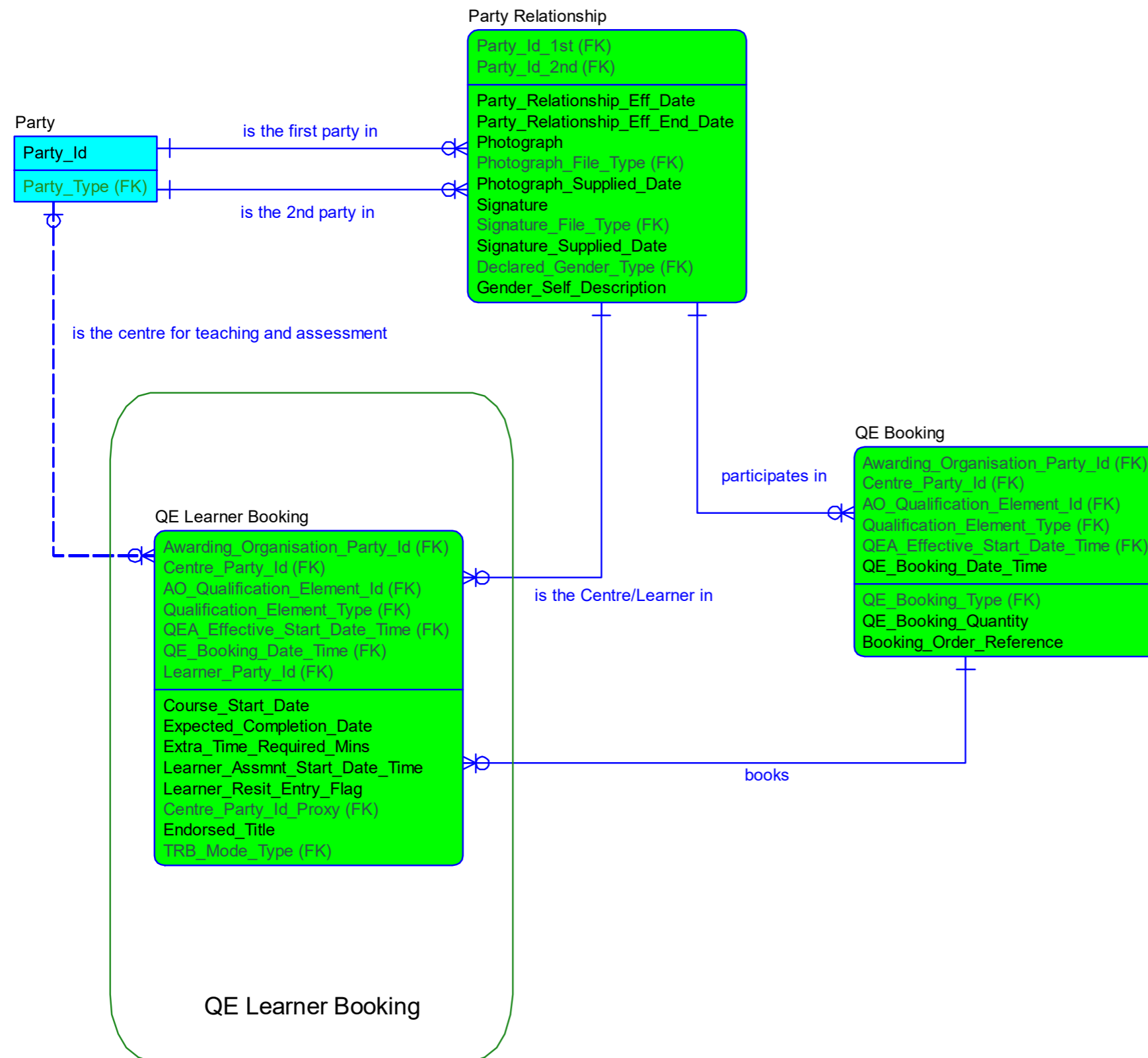


Figure 17 QE Learner Booking Data Block

3.17QE Outcome Data Block

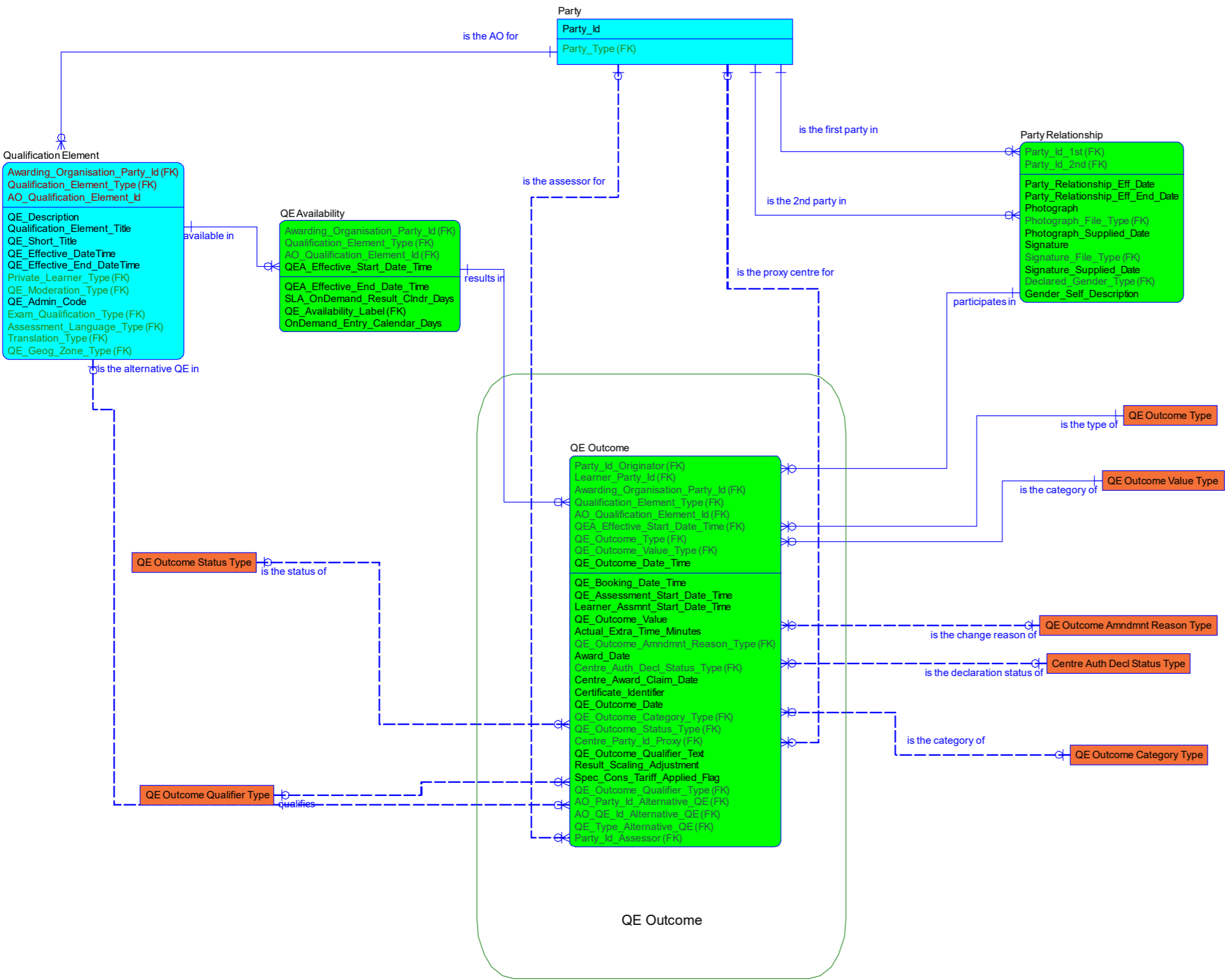


Figure 18 QE Outcome Data Block

3.18 QE Grade Set Data Block

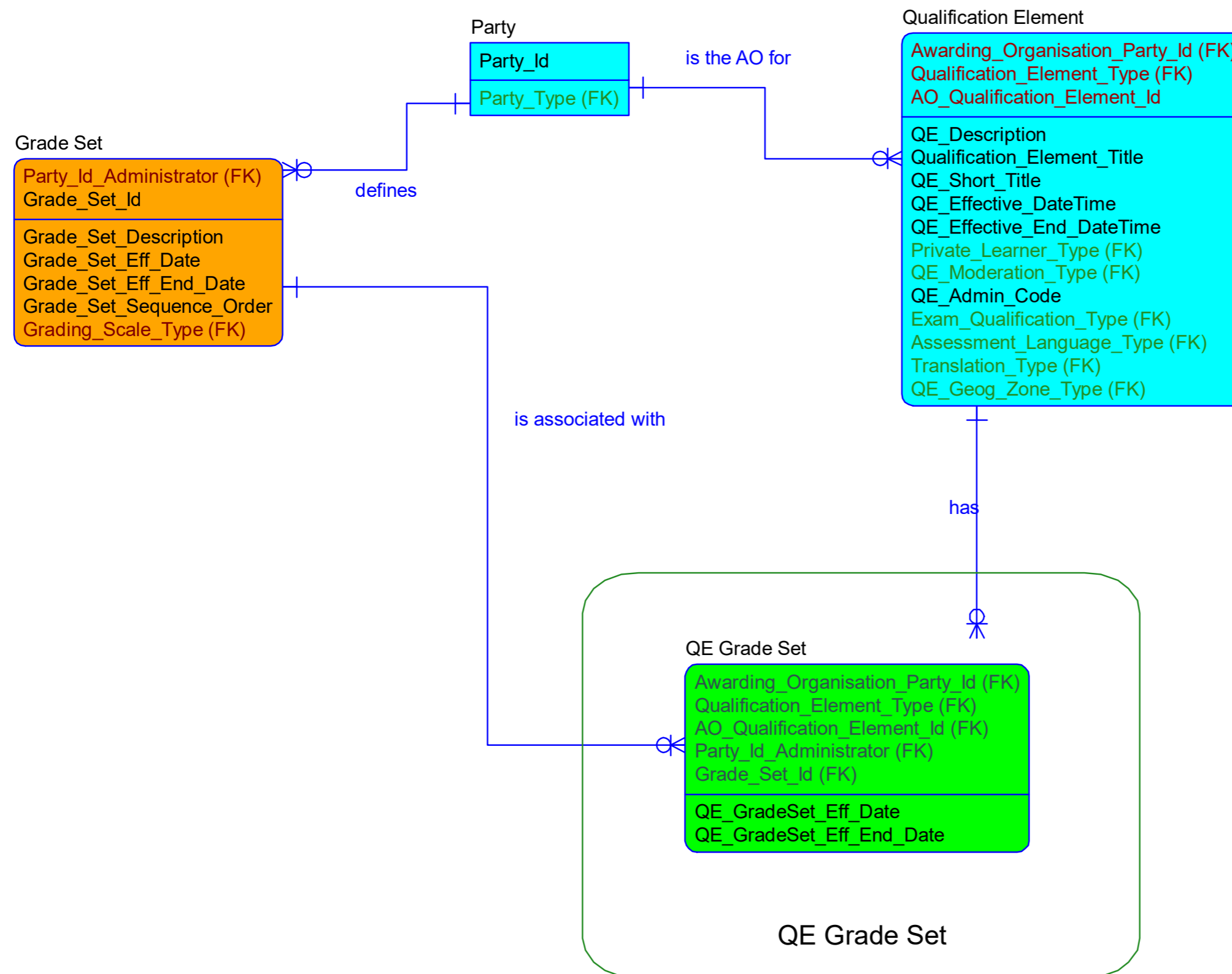


Figure 19 QE Grade Set Data Block

3.19 Contributing QE Outcome Data Block

QE Outcome

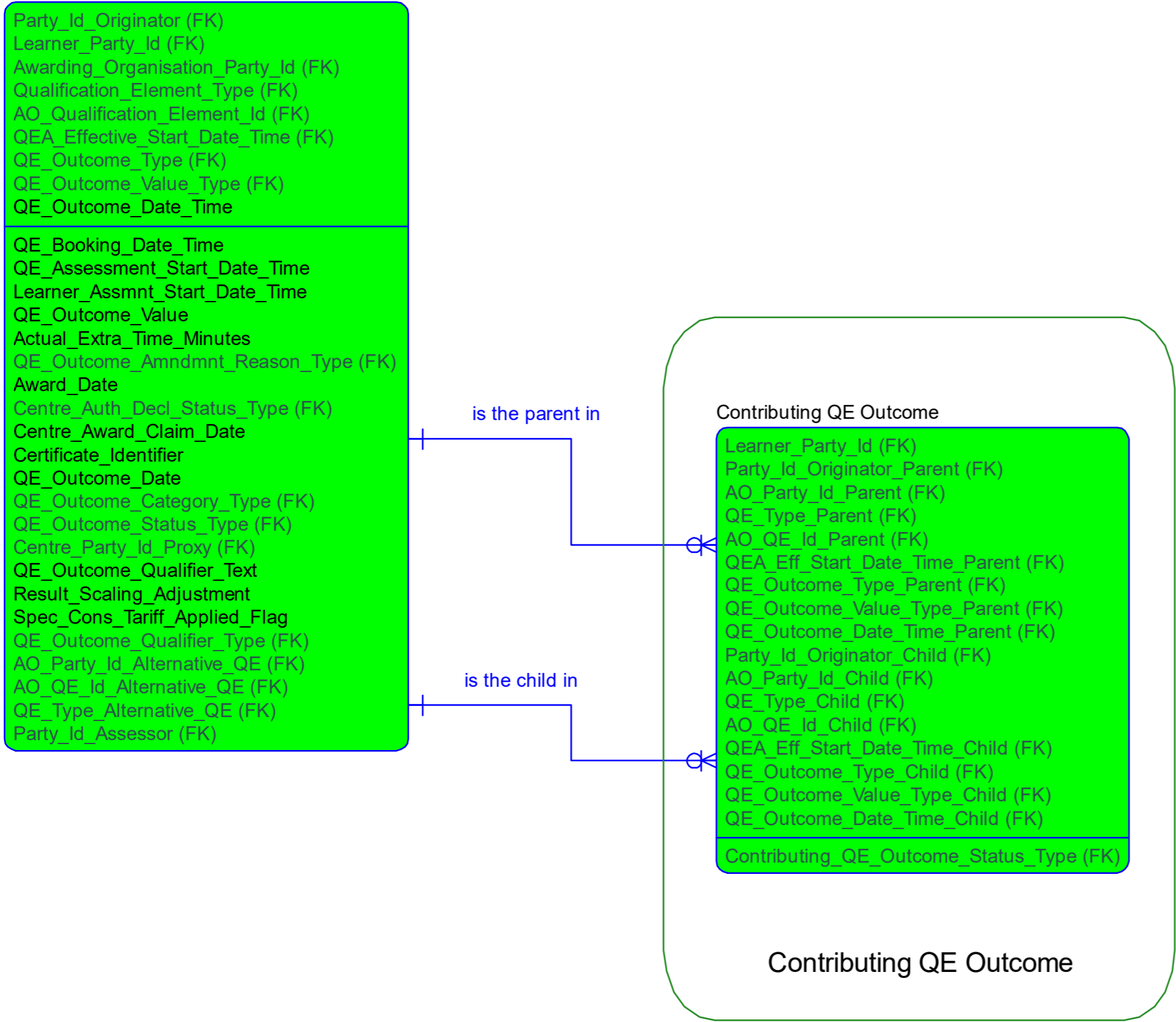


Figure 20 Contributing QE Outcome Data Block

3.20 QE Availability Grade Boundary Data Block

QE Availability

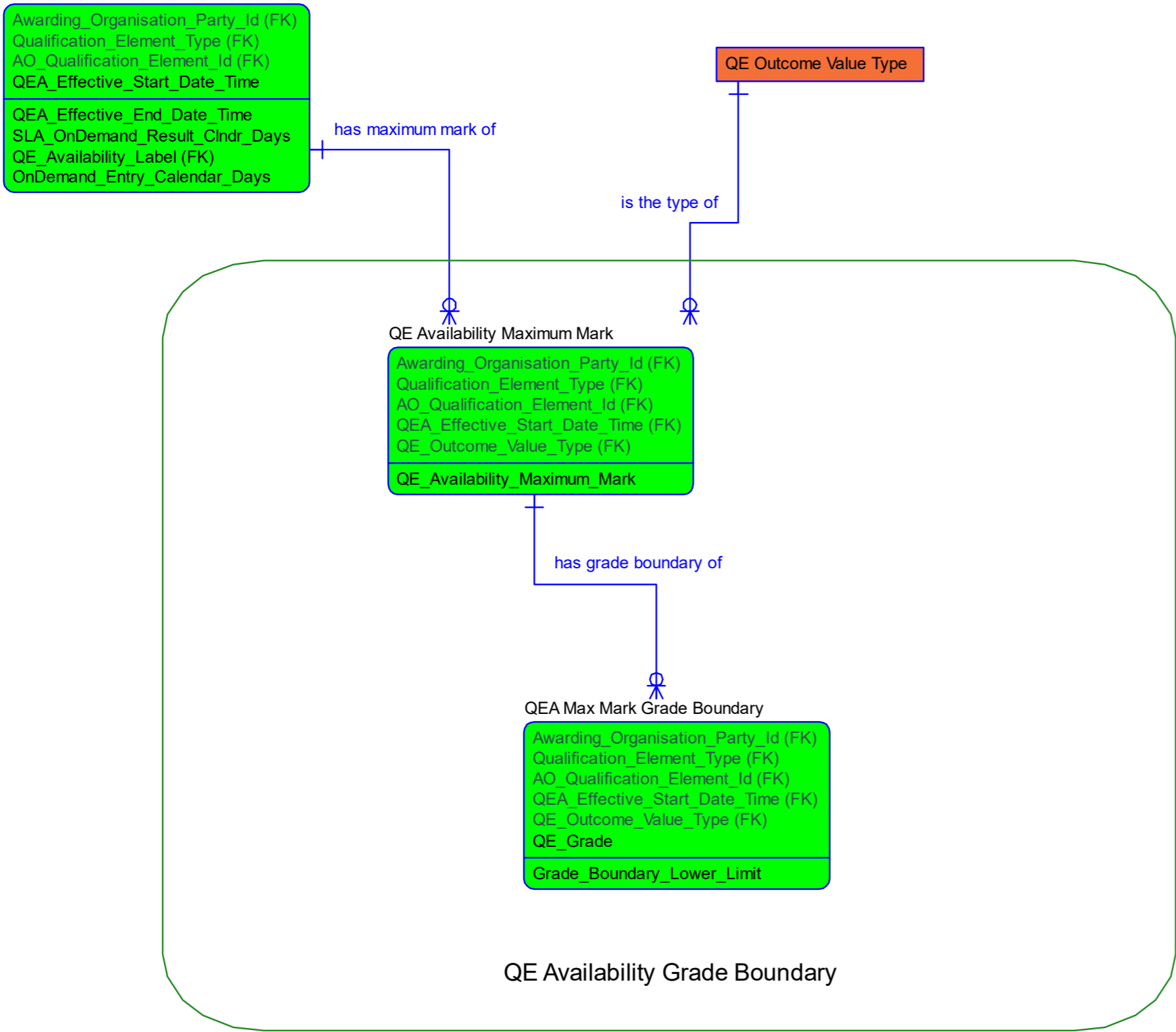


Figure 21 QE Availability Grade Boundary Data Block

3.21 QE Preference Data Block

Qualification Element

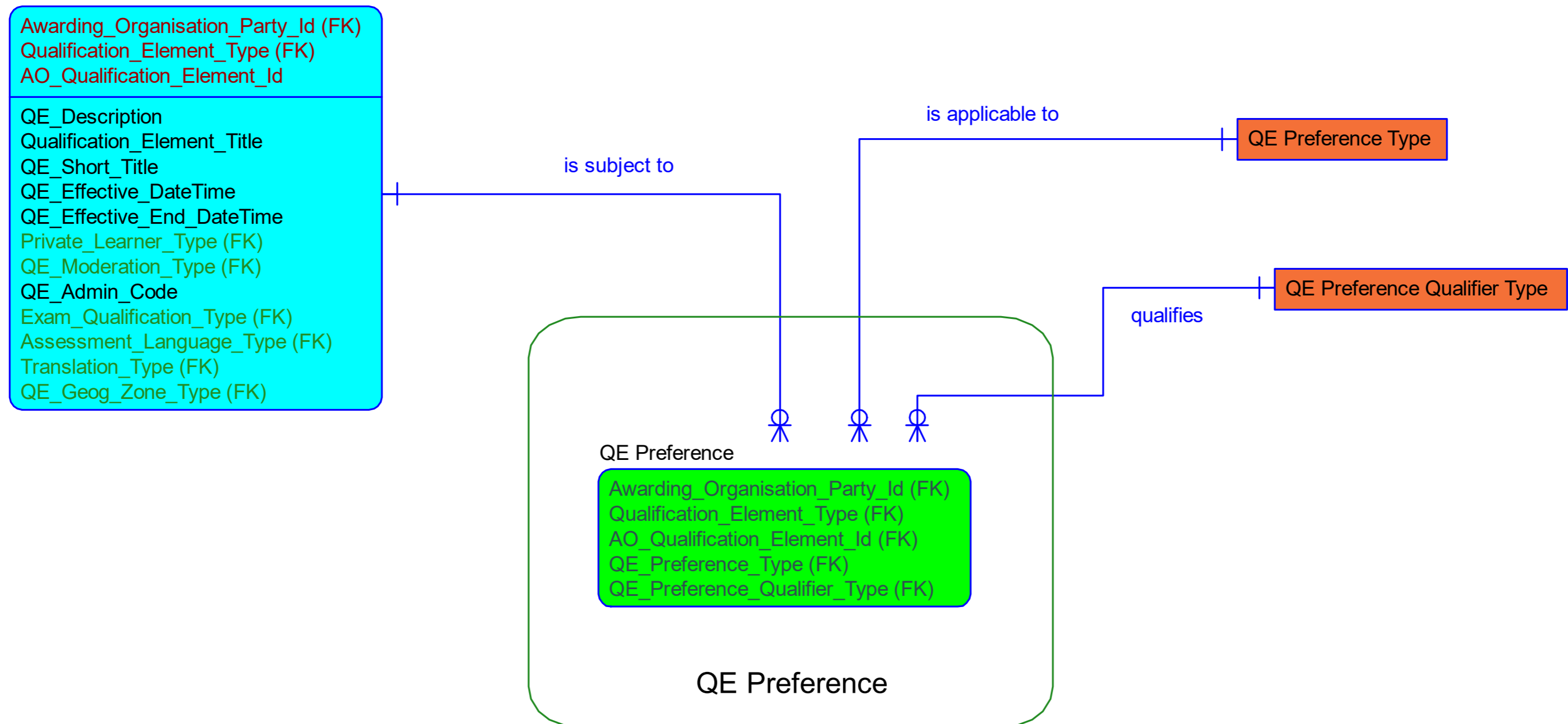


Figure 22 QE Preference Data Block

3.22 QE Qualification Category Data Block

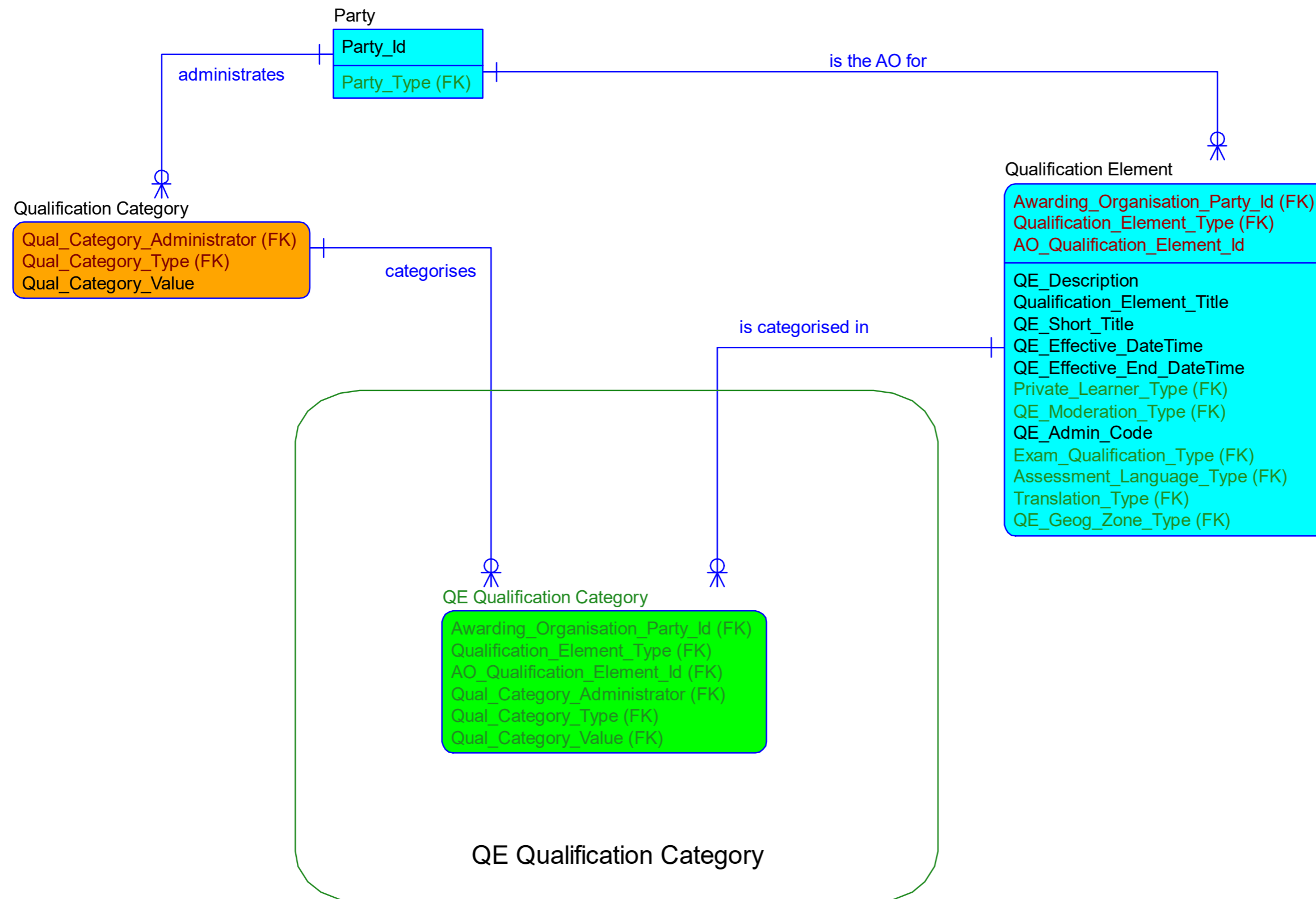


Figure 23 QE Qualification Category Data Block

3.23 QE Learning Hours Data Block

Qualification Element

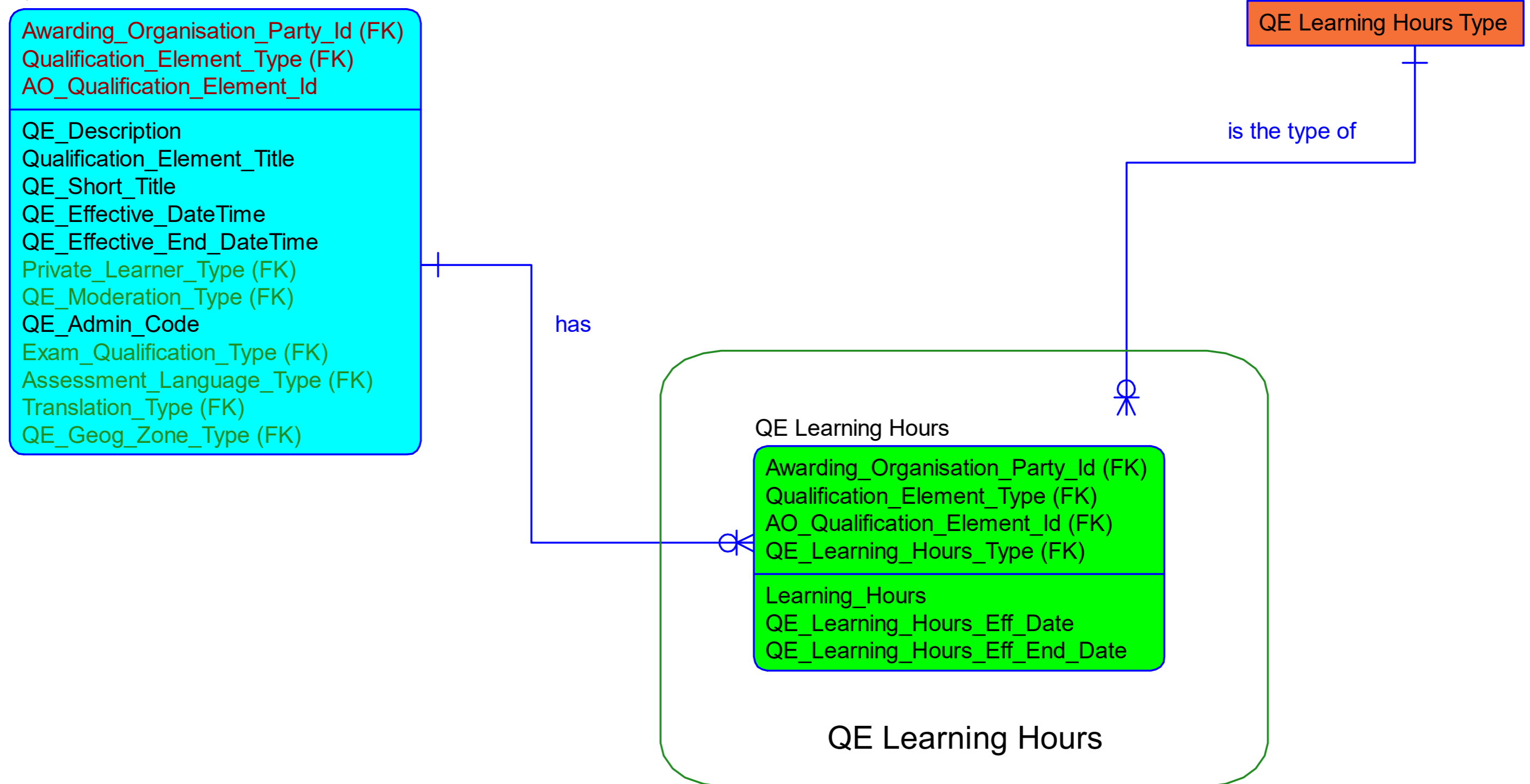


Figure 24 QE Learning Hours Data Block

3.24QE Objective Statement Data Block

Qualification Element

Awarding_Organisation_Party_Id (FK)
Qualification_Element_Type (FK)
AO_Qualification_Element_Id
QE_Description
Qualification_Element_Title
QE_Short_Title
QE_Effective_DateTime
QE_Effective_End_DateTime
Private_Learner_Type (FK)
QE_Moderation_Type (FK)
QE_Admin_Code
Exam_Qualification_Type (FK)
Assessment_Language_Type (FK)
Translation_Type (FK)
QE_Geog_Zone_Type (FK)

is the objective of

QE Objective Statement

Awarding_Organisation_Party_Id (FK)
Qualification_Element_Type (FK)
AO_Qualification_Element_Id (FK)
QE_Objective_Statement_Name
QE_Objective_Statement_Text
QE_Objctv_Stmnt_Level_Seq_Num
QE_Objective_Statement_Level
QE_Objective_Statement_Descr
QE_Objctv_Stmnt_Eff_Date
QE_Objctv_Stmnt_Eff_End_Date

is the first in

is the second in

QE Objective Statement Hierarchy

AO_Party_Id_First (FK)
QE_Type_First (FK)
AO_QE_Id_First (FK)
QE_Objctv_Stmnt_Name_First (FK)
AO_Party_Id_Second (FK)
QE_Type_Second (FK)
AO_QE_Id_Second (FK)
QE_Objctv_Stmnt_Name_Second (FK)
QE_Objctv_Stmnt_Hierarchy_Eff_Date
QE_Objctv_Stmnt_Hierarchy_Eff_End_Date

QE Objective Statement

Figure 25 QE Objective Statement Data Block

4 Reference Data

4.1 Controlled Lists

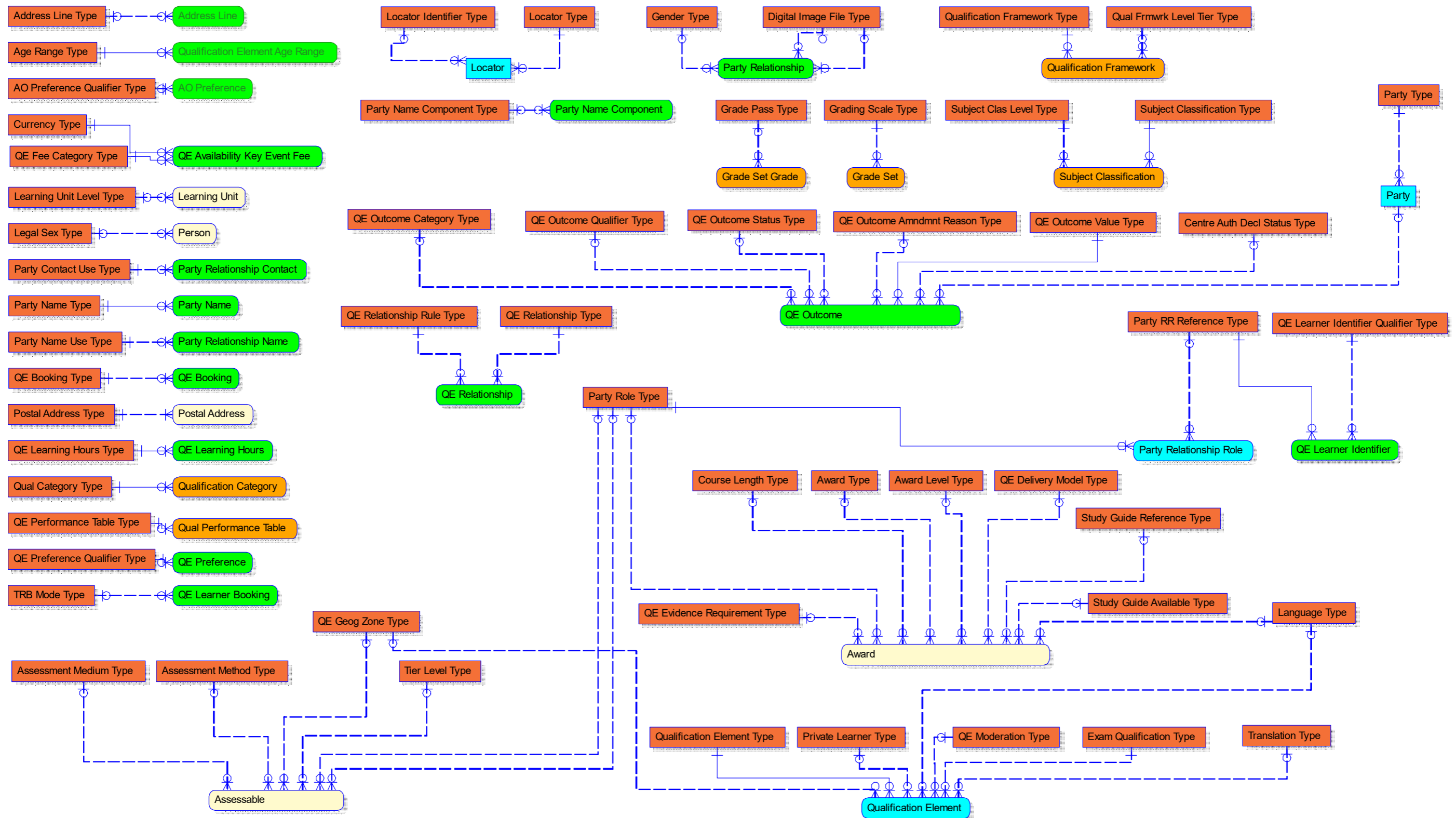


Figure 26 Controlled Lists

5 Subject Area Diagrams

5.1 Parties

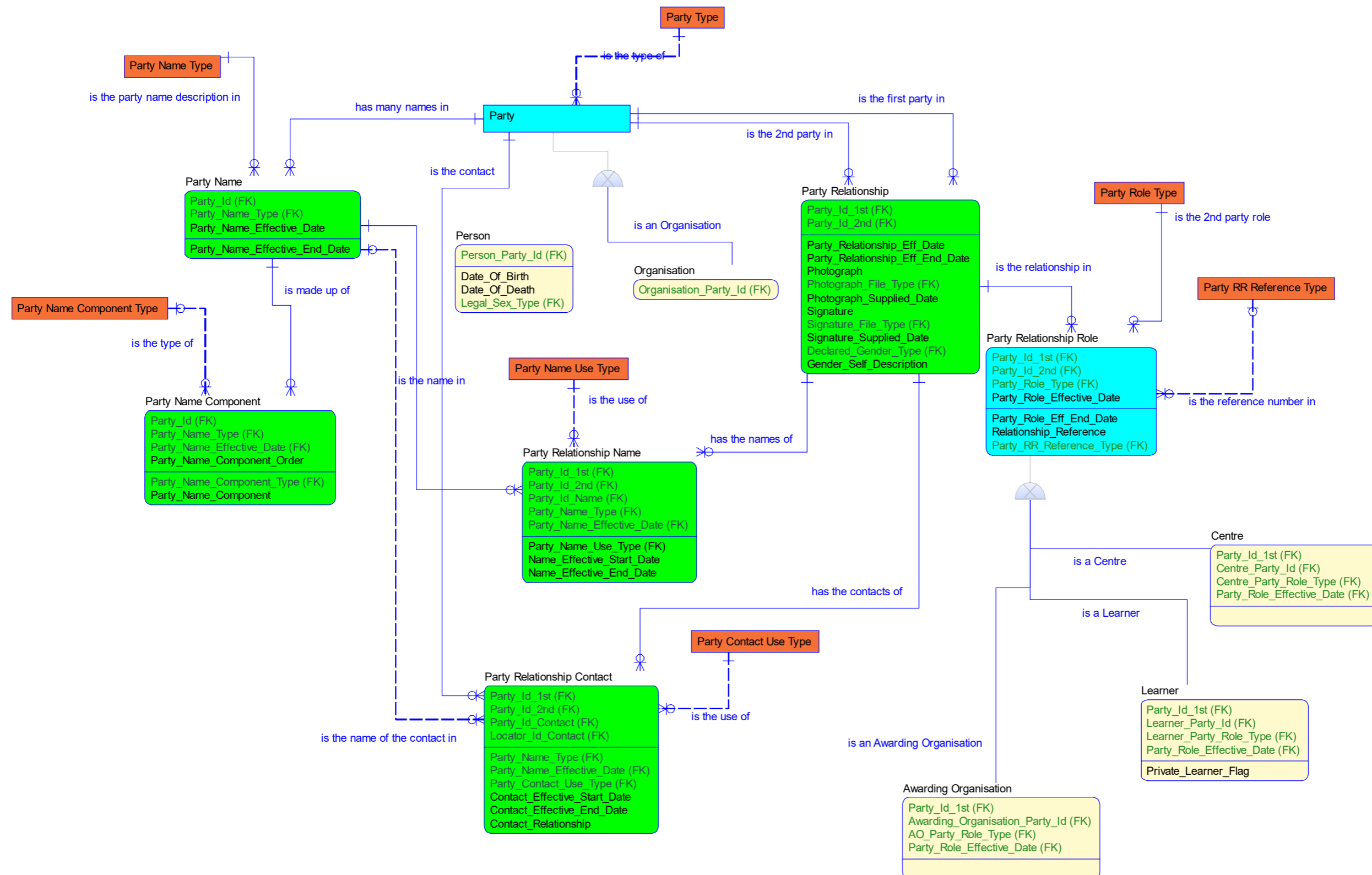


Figure 27 Parties

5.2 Booking and Outcome

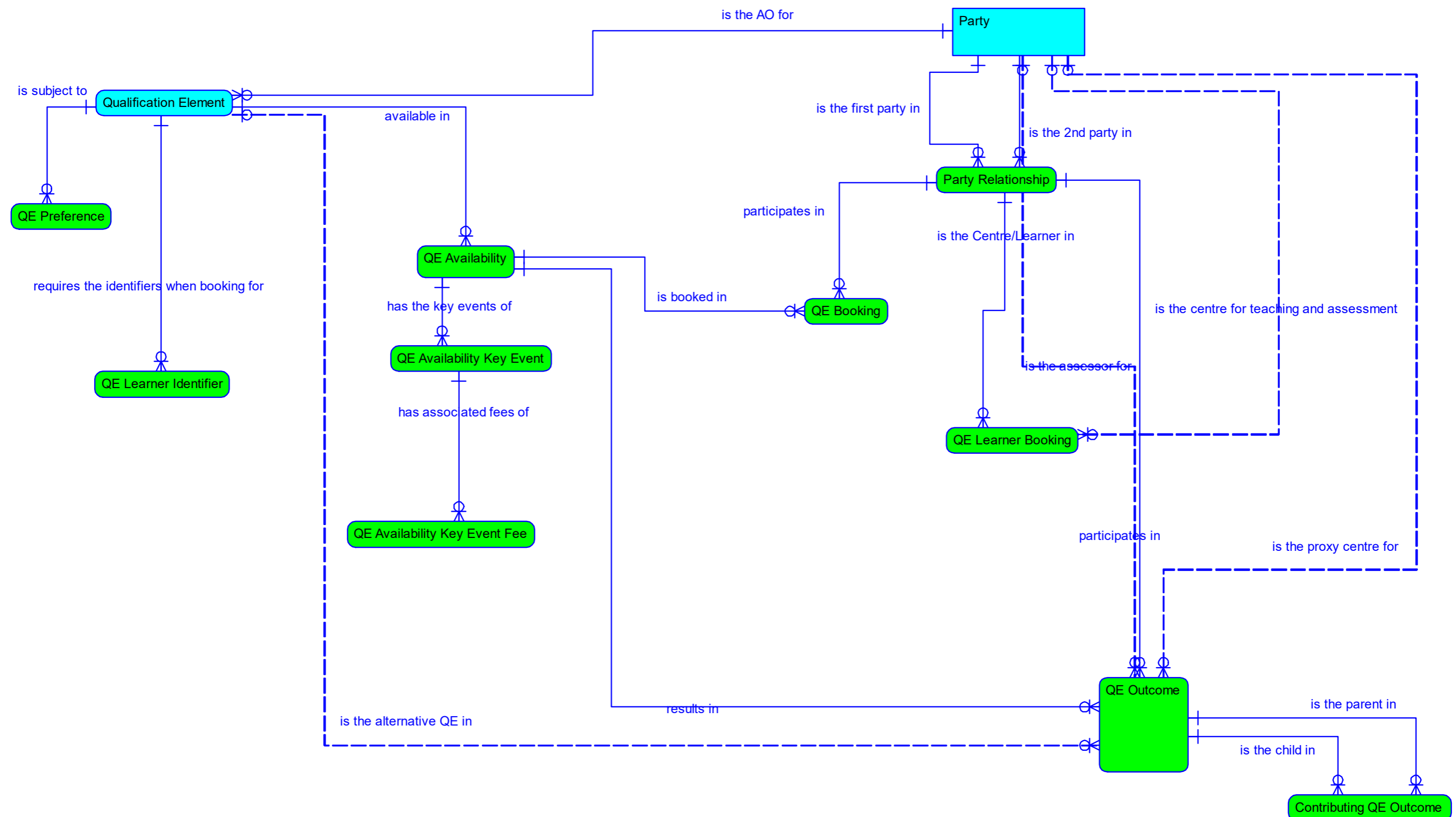


Figure 28 Booking and Outcome

5.3 Contact Location

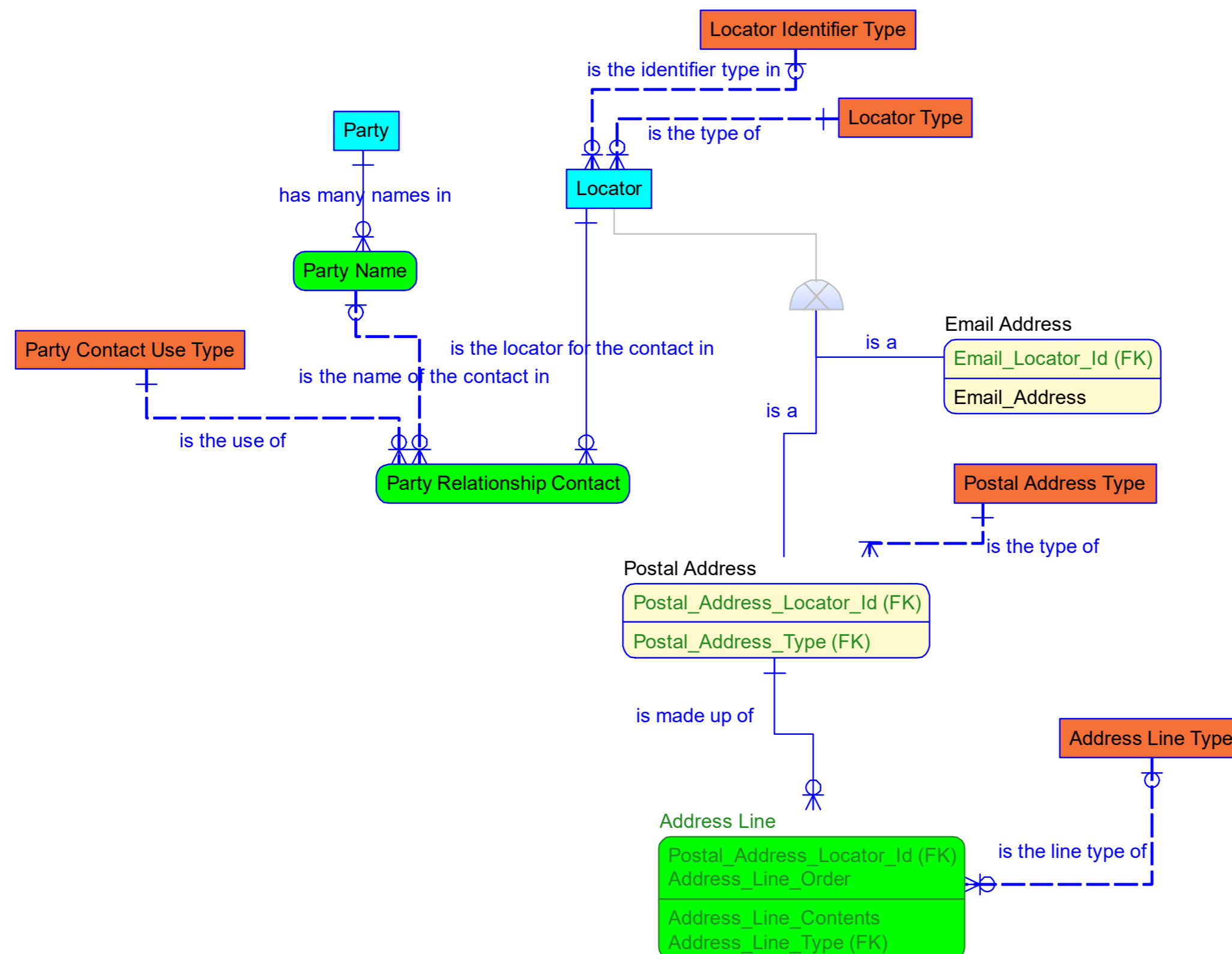


Figure 29 Contact Location

5.4 Fees

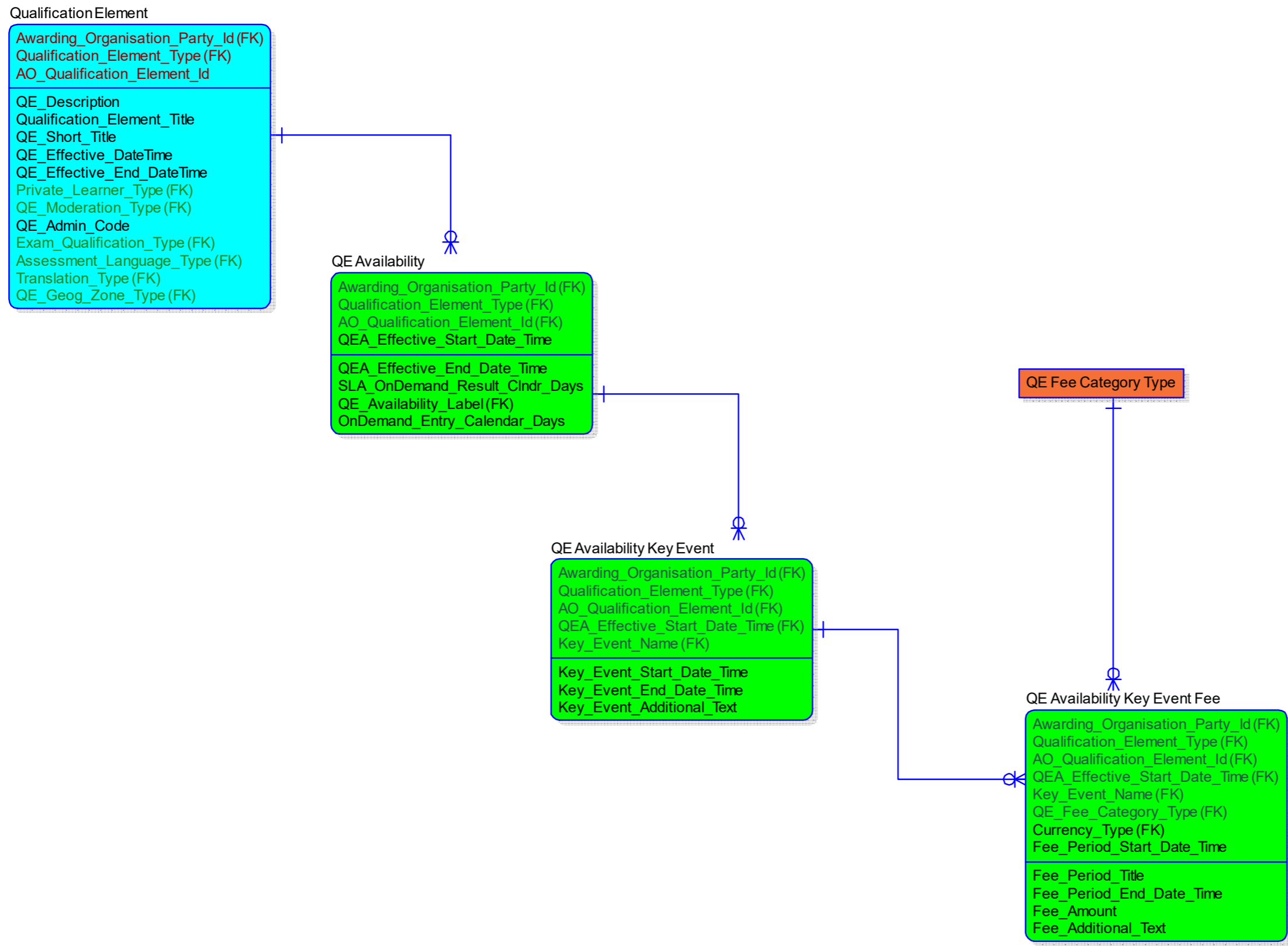


Figure 30 Fees

5.5 QE Grade Sets, Performance Points and Grade Boundaries

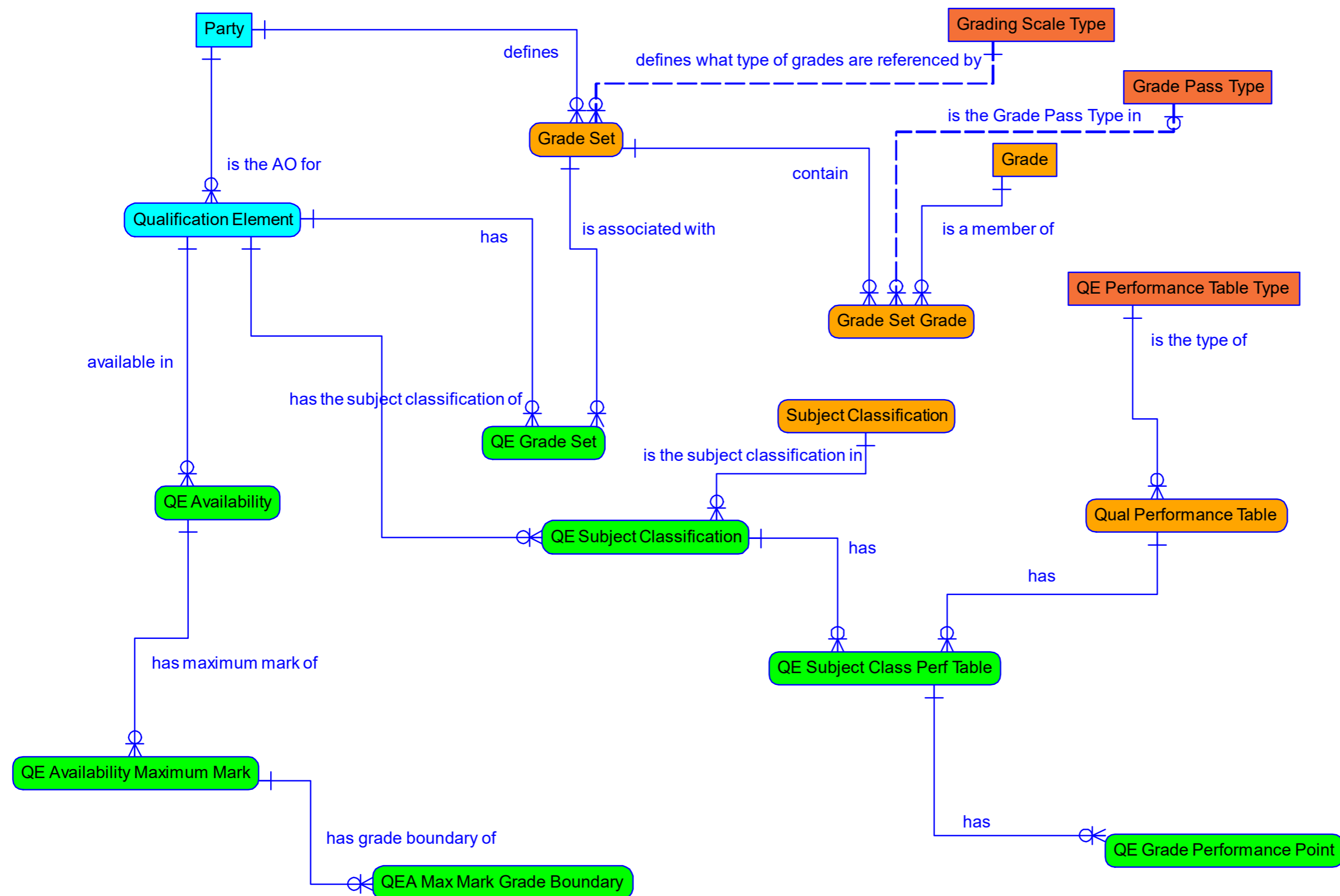


Figure 31 QE Grade Sets, Performance Points and Grade Boundaries

5.6 Subject Classification

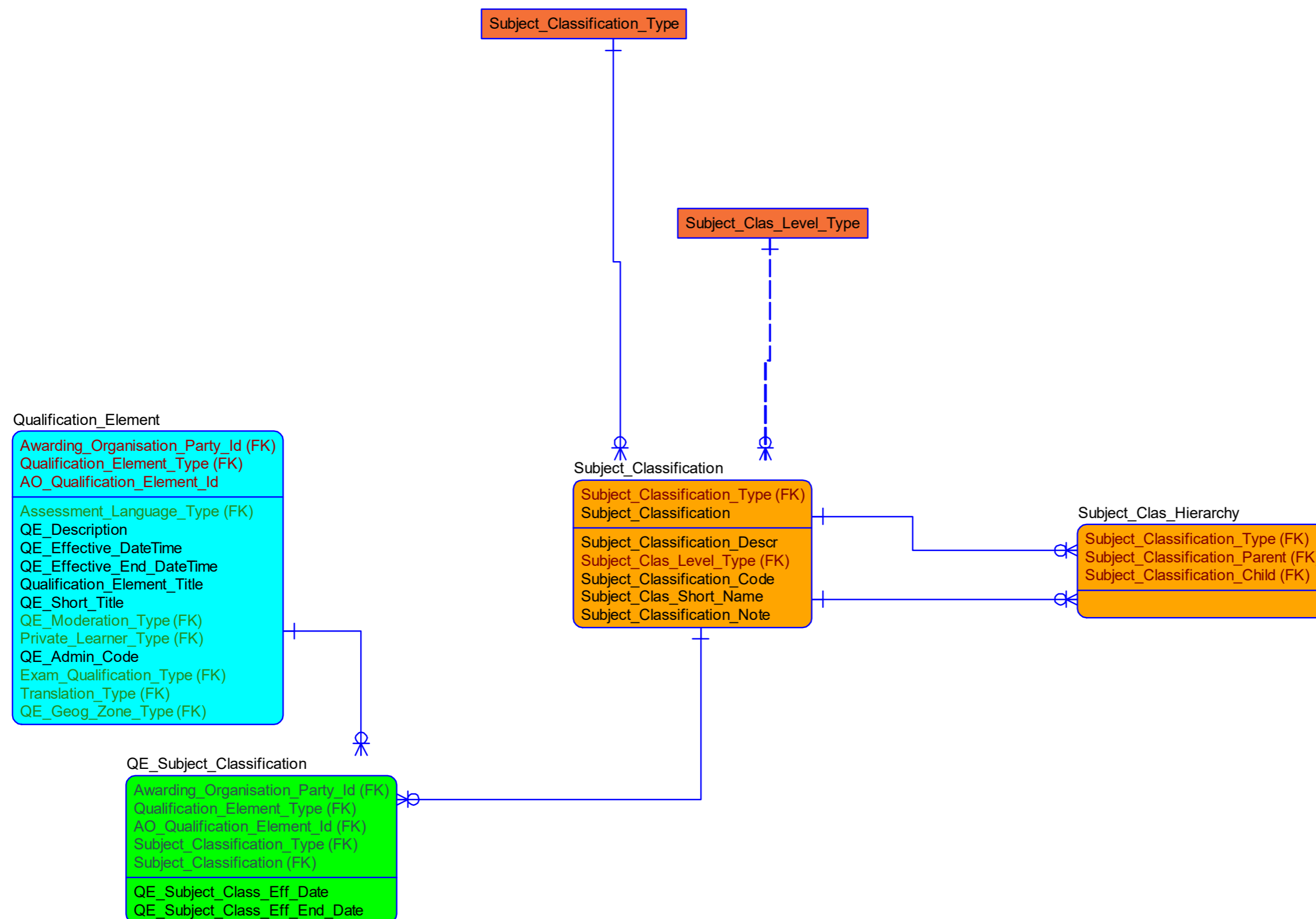


Figure 32 Subject Classification

5.7 Grades

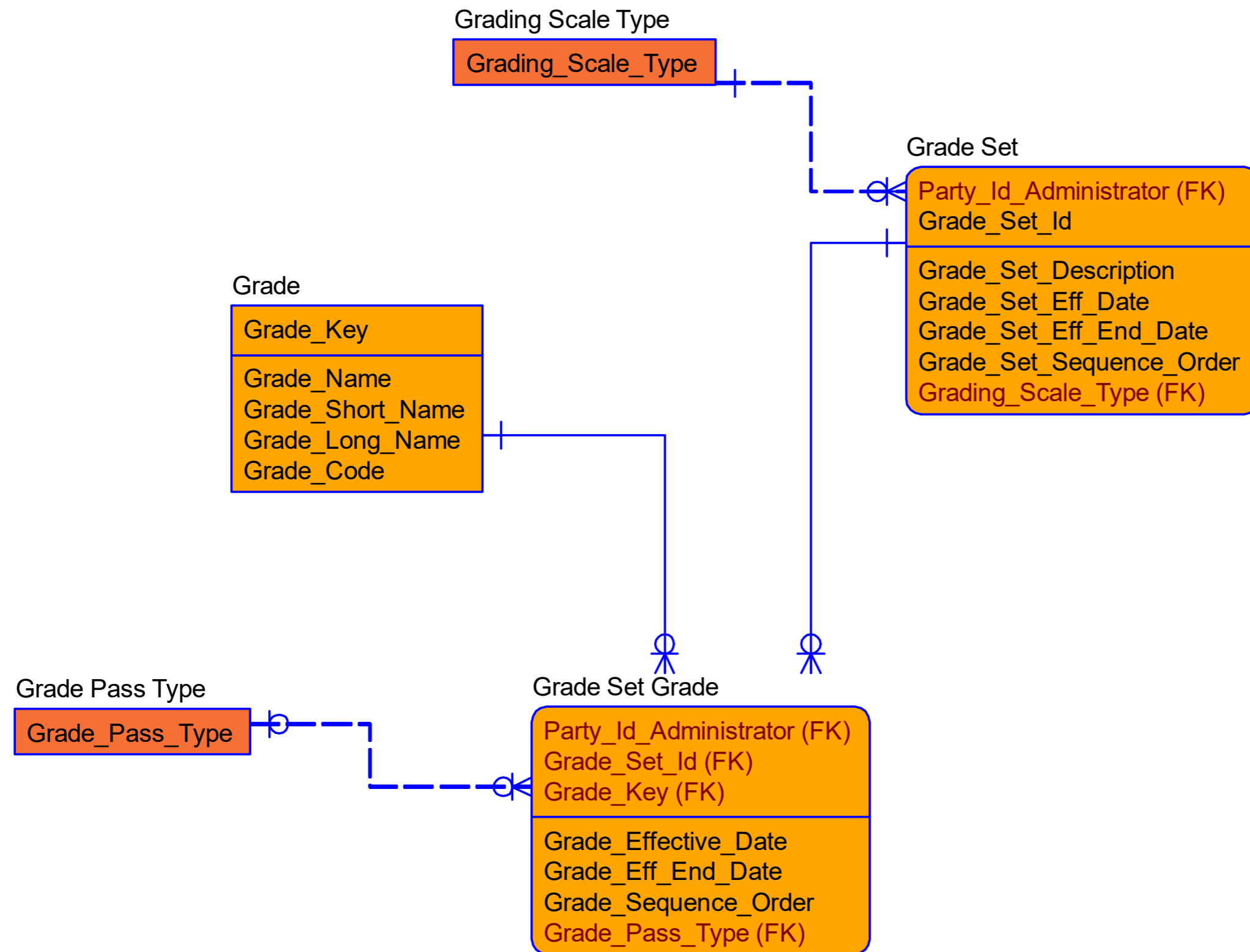


Figure 33 Grades

5.8 AO Preferences

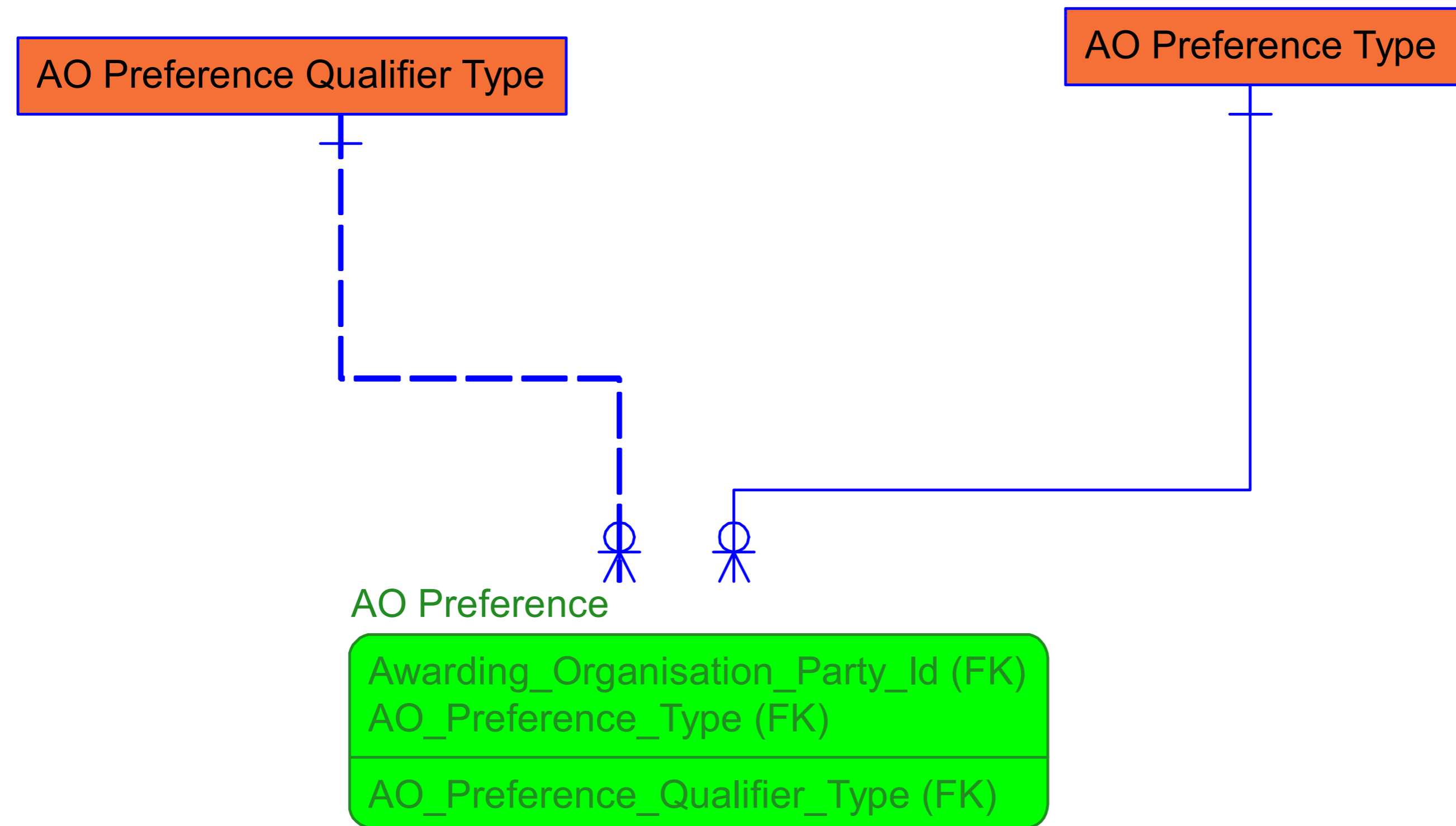


Figure 34 AO Preferences