OS MasterMap

Highways Network

Paths

Ordnance Survey

OS MasterMap® Highways Network
Version 2.2

Paths
Technical specification

Contents

V2.2 – 10/2017

Introduction

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If you are unfamiliar with any words or terms used and require clarification please refer to the glossary at the end of the document.

Chapter 1　　Introduction

The OS MasterMap® Highways Network is the authoritative highway network for Great Britain. It brings together Ordnance Survey's large scale roads and paths content, the National Street Gazetteer (NSG) and the Trunk Road Street Gazetteer (TRSG). The current release of the product will only contain NSG and TRSG data for England and Wales.

OS MasterMap Highways Network is made up of four product schemas; Linear Highway Network, Highways Dedication, Routing and Asset Management and Highways Water Transport Network (Figure 1). These four schemas create three products which are a part of the OS MasterMap Highways Network family:

- OS MasterMap Highways Network - Roads
- OS MasterMap Highways Network - Roads and Routing and Asset Management
- OS MasterMap Highways Network - Paths.

This technical specification will cover the OS MasterMap Highways Network - Paths (from here referred to as Path Network) product specification, for further details on Roads or Routing and Asset Management product specification please see their Technical Specifications.
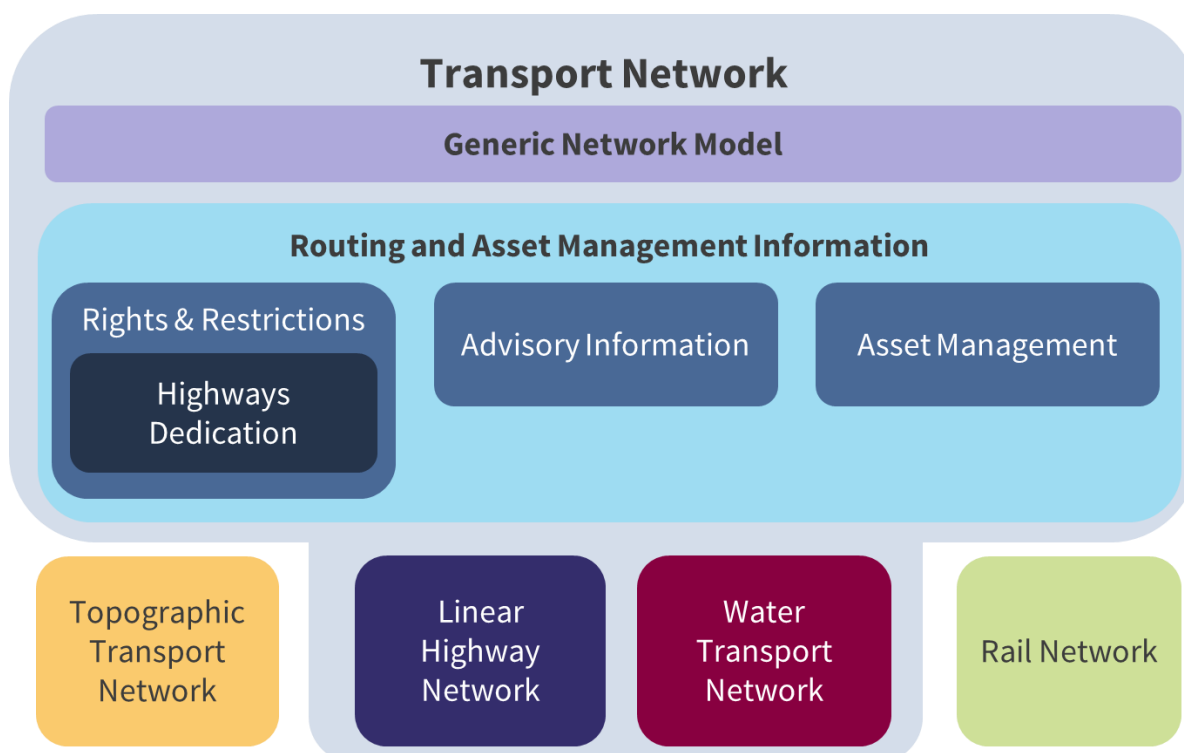
Figure 1: The conceptual INSPIRE Transport Network Model. OS MasterMap Highways will include the Linear Network, Routing and Asset Management Information and the Water Transport Network within the Generic Network Model.

Identifiers

All features that comprise the OS MasterMap Highways Network – will be assigned a persistent identifier, in most instances this is an Ordnance Survey TOID. For features which have originated from the National Street Gazetteer the persistent identifier will be either a Unique Street Reference Number (USRN) for Street features or a unique ID for Maintenance, Reinstatement, Special Designation and Highway Dedication.

Identifiers shall be encoded in three properties in the data:
1. gml:id – this is feature identifier comprised of the shorthand prefix namespace and local identifier which is used to uniquely identify and reference the feature within the dataset. Example: osgb4000000009461245
2. gml:identifier – this is a global feature identifier and can be used to identify and reference the feature within other datasets. Example: http://data.os.uk/id/4000000009461245

3. inspireID – this is a complex property made up of a localId, namespace and versionId which uniquely identifies the feature and version within an INSPIRE dataset. The versionId will not be populated in the OS MasterMap Highways Network products.

```
<highway:Road gml:id="osgb4000000009461245">
 <gml:identifier codeSpace="http://inspire.jrc.ec.europa.eu/ids">http://data.os.uk/id/4000000009461245</gml:identifier>
 <net:beginLifespanVersion>2010-04-01T00:00:00.000</net:beginLifespanVersion>
 <net:inspireId>
  <base:Identifier>
   <base:localId>4000000009461245</base:localId>
   <base:namespace>http://data.os.uk/</base:namespace>
   <base:versionId>16</base:versionId>
  </base:Identifier>
 </net:inspireId>
```

Where features have come from OS MasterMap ITN Layer the identifier will be persistent and correspond to the same feature in ITN.

The gml:id is used throughout the OS MasterMap Highways Network products as the identifier used to reference to other features.

TOIDs

TOIDs are strings of up to twenty characters which are comprised as two parts:
- Namespace: this is either a HTTP URI (http://data.os.uk/) or shorthand prefix ('osgb')
- Local identifier: 16-digit numeric string (0-9)

Identifiers that are TOIDs manifest themselves as the following in the product:
- **gml:id** – 'osgb4000000009461245'
- **localId** – '4000000009461245'
- **identifier** - 'http://data.os.uk/4000000009461245'

USRNs

USRNs are strings of up to twelve characters which are comprised of two parts:
- Namespace: this is either a HTTP URI (http://data.os.uk/) or shorthand prefix ('usrn')
- Local identifier: up to an 8-digit numeric string (0-9)

Identifiers that are USRNs manifest themselves as the following in the product:
- **gml:id** – 'usrn82101225'
- **localId** – '82101225'
- **identifier** - 'http://data.os.uk/82101225'

Although the gml:id is the identifier used for referencing to features in OS MasterMap Highways Network products the localId is the identifier used by the National Street Gazetteer, National Land and Property Gazetteer and the OS AddressBase® family of products.

Unique IDs

Unique IDs for Maintenance, Reinstatement, Special Designation are strings of up to seventeen characters which are comprised of two parts:
- Namespace: this is either a HTTP URI (http://data.os.uk/) or shorthand prefix ('id_')
- Local identifier: 14 alpha numeric string

The ID for HighwayDedication is a string of up to 25 charactes comprised of the characters "esu" followed by three parts separated by "_":
- LHA authority code
- ESU it references
- dedication code in the NSG

e.g. esu4720_4280330430163_8, esu4720_4280340431456_11

Identifiers that are Unique IDs manifest themselves as the following in the product (examples given for both unique ID formats):

- **gml:id** – 'id_3700MA01862142' or 'esu4720_4280330430163_8'
- **localId** – '3700MA01862142' or 'esu4720_4280330430163_8'
- **identifier** - 'http://data.os.uk/3700MA01862142' or 'https://data.os.uk/id/ esu4720_4280330430163_8'

Available Formats

OS MasterMap Highways Network is supplied in GML 3.2.1.

Adherence to Standards

OS MasterMap Highways Network extends the INSPIRE Transport Networks (Road and Water) Technical Specification (version 3.2).

OS MasterMap Generic Network model extends the INSPIRE Base Models - Generic Network Model (version 3.0rc3)

Extending INSPIRE Specification

OS MasterMap Highways Network extends the INSPIRE specification to include the additional properties required by BS 7666-1:2006 defined within the National Street Gazetteer (NSG) Data Transfer Format (DTF) and Scottish DTF (SDTF) to ensure that conformance to both INSPIRE and BS7666-1:2006 can be achieved.

Notation

UML Diagram and Table Conventions

The data structure is described by means of UML class diagrams and accompanying data dictionary tables. The specification conforms to the rules for application schema specified in ISO 19103 Conceptual schema language and ISO 19109 Rules for application schema, as adopted by INSPIRE.
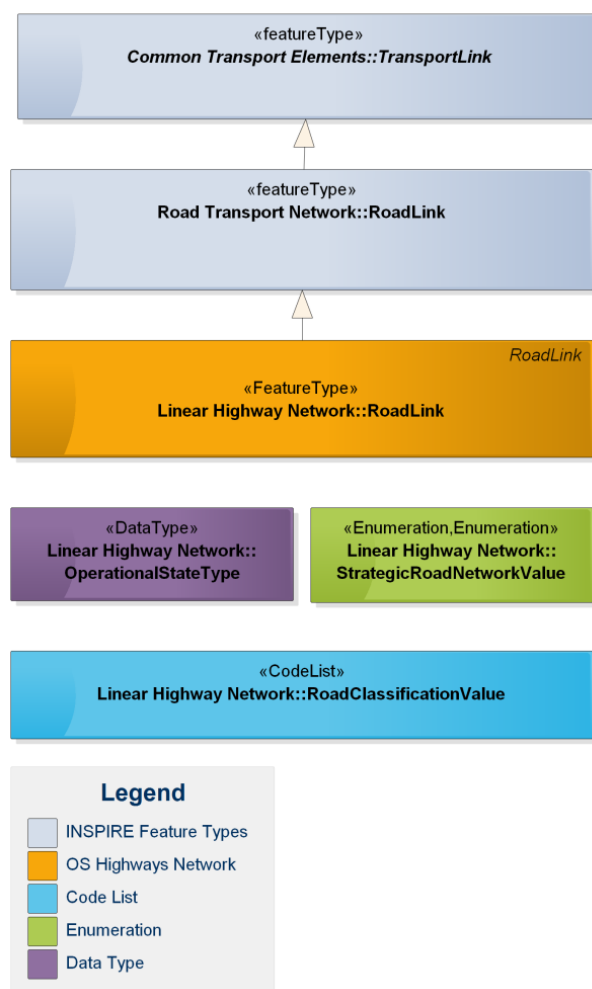
Figure 2 Colour conventions used in the UML diagrams within this Technical Specification

Colour conventions have been used in the diagrams and tables to allow users to easily distinguish the INSPIRE feature classes (coloured grey) from the Ordnance Survey feature classes which extends the INSPIRE specifications (coloured orange). All code lists classes are coloured blue, enumeration classes are green and data types/union classes are purple (Figure 2).

The data dictionary tables use orange for a feature type; blue for a code list; green for enumerations and purple for data types.

Lexical Conventions

- Class names are conceptually meaningful names (singular noun) in UpperCamelCase
- Class names end in "Value" where the class is assigned the stereotype <<CodeList>> or

  <<Enumeration>>
- Class names shall end in "Type" where the class is assigned the stereotype <<DataType>>
- Property names (attributes and associations) are in lowerCamelCase

Constraints

Constraints are defined on the Class using human readable language only. Constraints are displayed on class diagrams (Figure 3). These constraints are used to define co-constraints or restrict INSPIRE properties only.
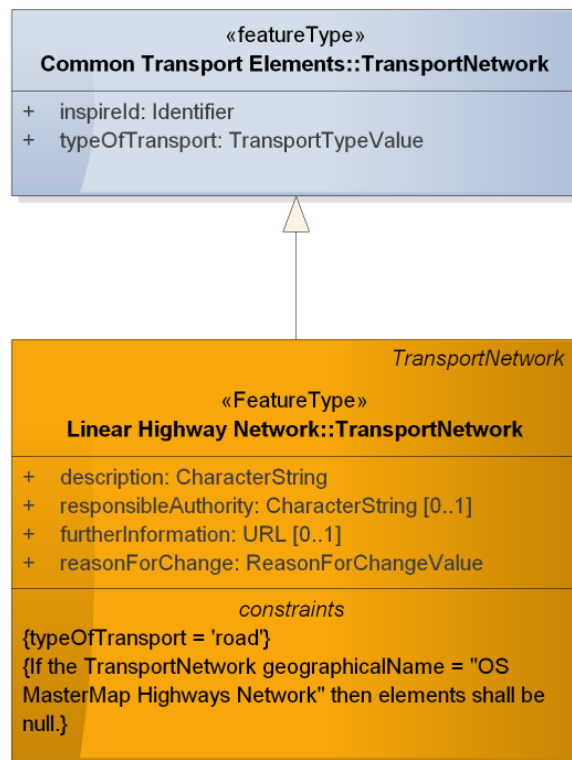
Figure 3: Diagram to show how constraints will be shown in the UML diagrams in this Technical Specification

Stereotypes

The following stereotypes are used on UML elements:

Stereotype	UML Element	Description
<<ApplicationSchema>>	Package	Parent package containing sub-packages and elements that comprise part of the modular specification
<<FeatureType>>	Class	A spatial object type. [ISO 19136].
<<Type>>	Class	A structured data type with identity
<<DataType>>	Class	A structured data type without identity. [ISO/TS 19103]
<<Union>>	Class	A structured data type without identity where exactly one of the properties of the type is present in any instance.
<<Enumeration>>	Class	A fixed controlled set of values for a free text data type.
<<CodeList>>	Class	A controlled set of values for a free text data type that may be extended.
<<Voidable>>	Property	A property that is required but is either not currently captured (unknown) or is partially populated (unpopulated).
<<LifecycleInfo>>	Property	Property considered part of the life cycle information.

Relationships and Associations

There are 3 key types of relationship defined between classes (Figure 4):

- **Generalisation/Specialisation:** this is used to denote either:

- o An extension relationship: where the target class represents the same real world entity and is extending it to include additional properties not defined on the parent class. NOTE this class shall the same name as the class it is extending.

- o A sub typing relationship. The target class defined a specialised sub-type of parent feature. For example, *TransportNode* is a specialised sub-type of a generic *Node* class.

- **Directed Association:** used to denote relationships between features. These relationships are encoded as references to the related feature via the identifier assigned in the gml:id. The directed end shall be assigned a name which describes the relationship between the two features and a multiplicity.

- **Aggregation:** these denote part-of relationships. Aggregations are used to describe loose part-of relationships. If the parent feature ceases to exist then the part feature can continue to exist. For example, a Road Name may cease to exist but the Road will still exist.
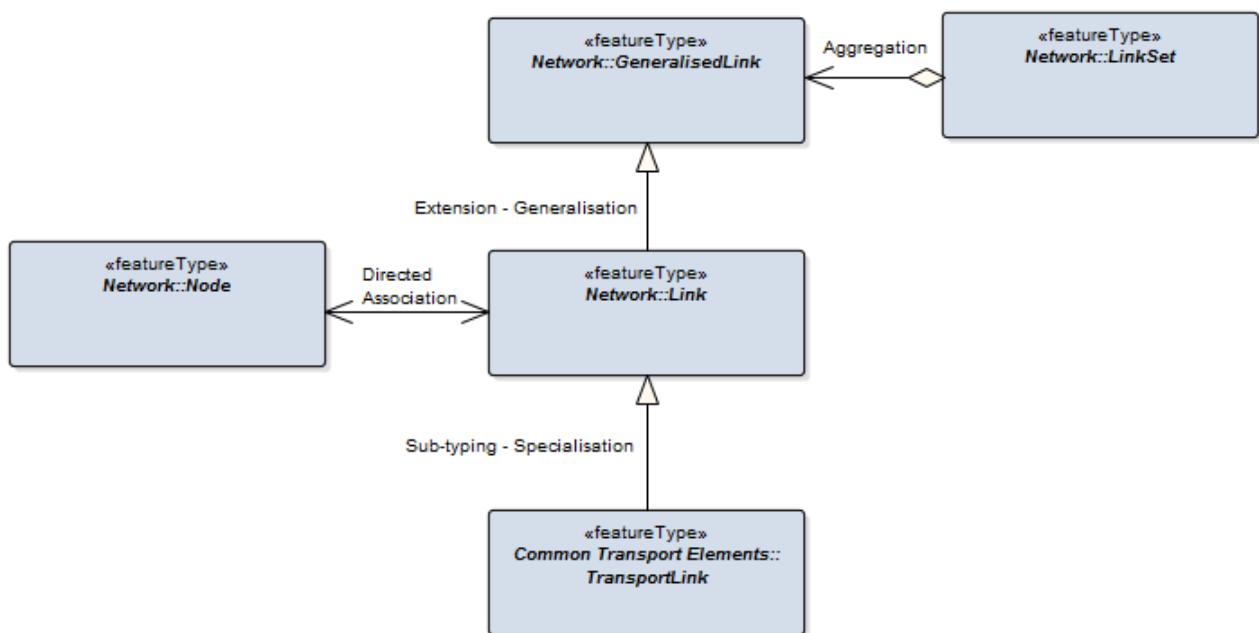
Figure 4: Relationships between Feature Types which will be used on the UML diagrams throughout this Technical Specification

Chapter 2   Specification Changes

There have been small enhancements to the OS MasterMap Highways Network Version 2 to enable the release of new attributes and the capability to release change only update. This chapter will outline the main changes to the Path Network product. For changes to the Road or Routing and Asset Management products, please see the respective Technical Specifications.

Features

- PathLink and PathNode z values have been enhanced to reduce discrepancies when the path passes over a structure, for example a bridge.
- Added new feature type "HighwayDedication" to denote dedications of highways as defined in the Highway Act 1980 and Countryside and Rights of Way Act 2000.
- As a result, there is a new code list, "DedicationValue".

Code Lists, Data Types and Enumerations

- The "OperationalState" attribute on the Street features has introduced a new value "Addressing Only" into the "OperationalStateValue" codelist. The "NetworkReferenceLocation" has been further extended to accept additional geometry types, lines and polygons, in addition to start and end points. This affects "Maintenance", "Reinstatement" and "Special Designation" and the information provided on their location for partial records.The "SpecialDesignationTypeValue" code list has been updated with multiple new values added.The "MaintenanceValue" enumeration has been updated with two values added.

Schema changes

- v2.1 Routing and Asset Management schema is being released which will enable the code list and enumerations described above to be brought through

- v1.0 Highways Dedication schema has been introduced which defines the Highways Dedication feature.

Chapter 3   OS MasterMap Highways Network - Paths

The Path Network is a topologically structured link and node network made up of the following feature types:

1. **PathLink** – A line segment representing the general alignment of the path.

2. **PathNode** – A node connecting to at least one PathLink, providing network connectivity.

3. **ConnectingLink** – A logical indicator of the connection between the Path network and the Road network.

4. **ConnectingNode** - A node which connects the Road network to the Path Network. The ConnectingNode does not cause a break in the RoadLink but it will be snapped to a point along a RoadLink.

5. **Path** – A Path defines the complete collection of references to PathLink features which share the same path named for example, Three Brooks Walk.

6. **Street** – A Street defines a collection of references to PathLink features that are contained within a single authority and are unique to a location (town/locality).

7. **FerryLink -** A feature which represents a ferry route between two FerryNode's.

8. **Ferrynode -** A feature representing the point at which a pedestrian ferry route or section of ferry route starts or ends.

9. **FerryTerminal -** A feature representing the point at which pedestrians transfer from the ferry network to the path network or vice versa.

10. **Maintenance –** Identifies what the maintenance status is of a Street.

11. **Reinstatement –** A feature which identifies how a Street should be re-instated after street works.

12. **Special Designation –** A feature which identifies if there is additional information about the Street.

13. **Highway Dedication –** A feature which identifies the type of Highway user that has access to that particular section of the Highway
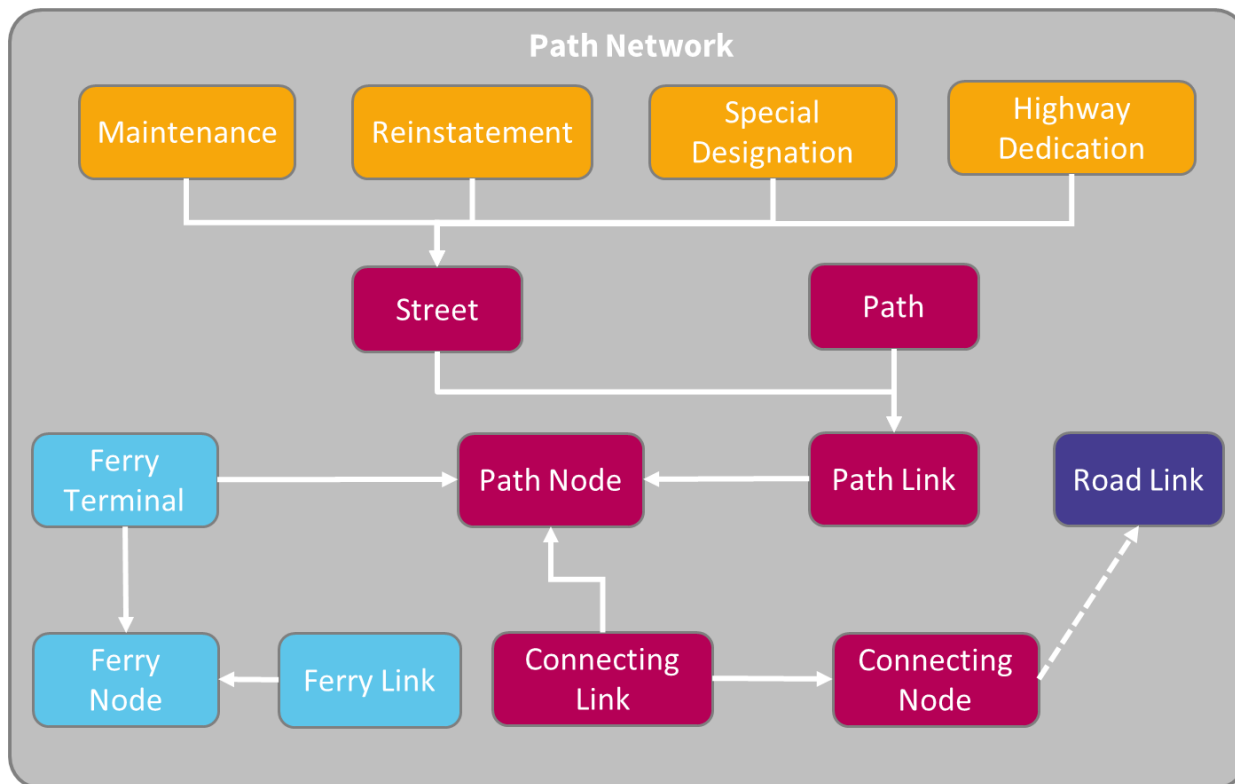
Figure 5: Illustration to show how the Path Network feature types relate to one another.

The Road and Path Network have not been topologically structured together. Therefore, the ConnectingLinks and ConnectingNodes have been introduced to enable a connection between the Road Network and the Path Network without splitting the Road Network. ConnectingLinks are logical connections between the Path Network and the Road Network. They do not represent a feature in the real world. A ConnectingNode is a feature which indicates where the Path will intersect with the Road Network. The ConnectingLink feature will reference the PathNode and ConnectingNode that it connects with, whilst the ConnectingNode will reference the RoadLink that it intersects.

Common Attribution

Each feature within the OS MasterMap Highways Network will have the following common attribution:

- gml:id, gml:identifier and inspireId
- beginLifespanVersion
- inNetwork – this shall always be set to "*OSHighwayNetwork*"
- reasonForChange
- validFrom (Note: this is assigned a nilReason value "*unknown*" for most features)

In addition, many of the attributes which have been inherited from the INSPIRE Transport Network model have a stereotype of 'voidable', for example "beginLifespanVersion". Where these attributes have not been populated then there is a requirement to give a reason for this. This will be specified in the GML through an attribute called "nilReason".

Network Referencing

The Asset Management features of the Path Network product relate back to the Path Network features using Network Referencing, through the networkRef attribute. All Routing and Asset Management Information features extend the INSPIRE NetworkProperty class (Figure 6). In the Path Network product only one type of Network Reference is used which is the INSPIRE NetworkProperty class. This class has been extended in cases where the feature only partially references the network feature.
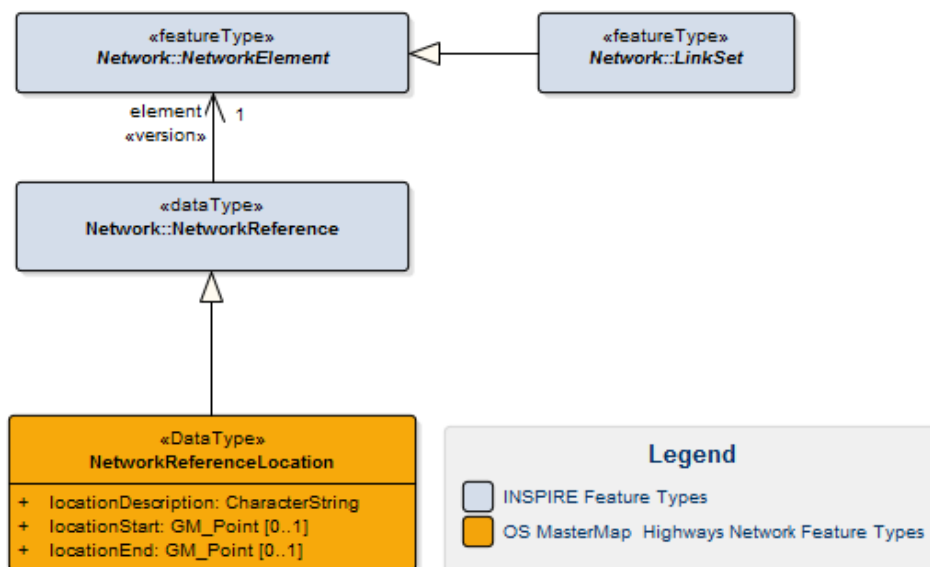
Figure 6: INSPIRE Network Referencing Model

In the INSPIRE specification, the networkRef is a voidable field. For all features in the OS MasterMap Highways Network the networkRef will never be voided.

Network Reference

The Network Reference references the feature back to the network element. The Network Reference has been extended and the asset management feature types solely use Network Referencing are Maintenance, Reinstatement, Special Designation and Highways Dedication. These features will all reference back to the id of the Street feature, the USRN. Geometry will not be provided. However, where these features do not reference an entire Street feature, and are a partial reference, they will provide a Network Reference Location. This is made up of a locationDescription which provides a textual description of where the feature relates to which will be populated directly from the NSG.

The feature types which use the Network Reference Location are Maintenance, Reinstatement, Highways Dedication and Special Designation.

«DataType» NetworkReferenceLocation		
Attribute: element		
Definition: The identifier of the feature being referenced; this will always be the gml:id .		
Multiplicity: [1]	**Size**: 20	
Attribute: locationDescription		
Definition: Textual description of the location extent of the referenced property when the feature partially references the network.		
Type: CharacterString	**Multiplicity**: [1]	**Size:** 250
Attribute: locationStart		
Definition: The geometry of where the feature starts.		
Type: GM_Point	**Multiplicity**: [0..1]	
Attribute: locationEnd		
Definition: The geometry of where the feature ends.		
Type: GM_Point	**Multiplicity**: [0..1]	
Attribute: locationLine		
Definition: A linear representation of the feature.		
Type: GM_MultiCurve	**Multiplicity**: [0..1]	
Attribute: locationArea		
Definition: An area representation of the feature.		
Type: GM_MultiSurface	**Multiplicity**: [0..1]	

Temporal Properties

The Special Designation and Highways Dedication features contains information on restrictions which apply to a temporal period. The different temporal properties have been categorised and the different categories are detailed below. In addition, they have been given a hierarchy within the Routing and Asset Management product which is illustrated in Figure 7.

Named Date

A Named Date would be when a restriction applies to a specified date which is named. For example, All Year or January. There are no further sub categories of a Named Date.

Date Range

A Date Range is provided when a restriction applies between two dates and there will always be a start date and an end date. These two dates can be specified using two different data types; either StartDate and EndDate or StartMonthDay or EndMonthDay.

The StartDate and EndDate will always be used for Date Ranges for Special Designation features. These are formatted as YYYY-MM-DD for example 2016-09-20.

Day Period

A Day period would be a restriction which applies on a specified day. A Day Period is made up of the following properties:

- Named Day –A restriction which applies to a specified day which is named for example Monday or Weekends

- Named Period – A restriction which applies to a specified period which is named for example School Holidays.

- Time Period – A time period is made up of a further two properties:
  - Named Time - A restriction which applies to a specified time period which is named. That do not necessarily relate to the same time each day consistently across the country, for example Peak Time.
  - Time Range – When a restriction applies between two specified times which will always have a start time and an end time. These data types are formatted as HH:MM:SS and will use the 24hr clock for example 16:30:00.
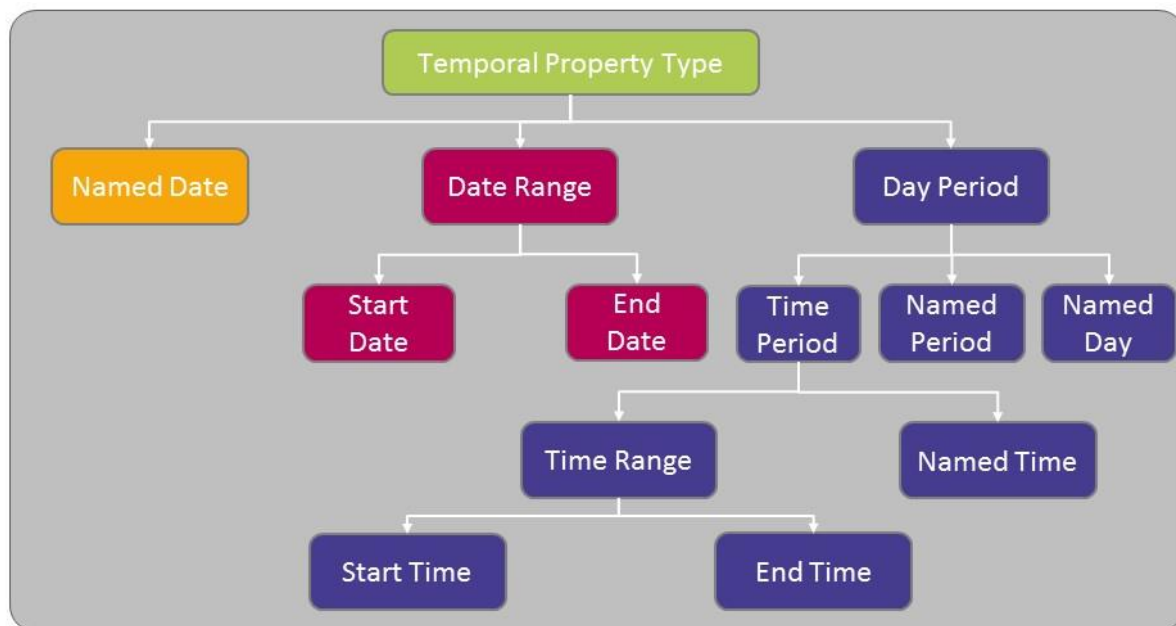
Figure 7: Structure of the Temporal Property data type

PathLink

Overview

A PathLink is a linear spatial object that defines the geometry and connectivity of the path network between two points in the network. PathLinks will be split for connectivity purposes (for example at junctions) and PathNodes will connect the PathLinks together. Each PathLink will provide a reference to the PathNodes at the start and end of the PathLink.

A PathLink will be captured where:

- They provide a route that cannot be inferred from the Road Network

- They provide connectivity between road networks
- There is a canal path or tow path
- There are paths over footbridges and under subways

PathLinks will not be captured where:

- They run parallel to the Road Network, for example a pavement/
- They are connected to a Motorway
- There is a physical obstruction which prevents connectivity

PathLinks will split where two PathLinks cross over or under one another when there is no connectivity, for example at bridges and flyovers. Therefore, the attributes "startGradeSeparation" and "endGradeSeparation" have been populated on the PathLink. The Grade Separation attribute will indicate where there is or is not a physical connection between the paths in the real world. Grade Separation will determine if a PathLink is above another; if the two PathLinks, when referencing the same PathNode, have different value then it is not possible to move between them at that point. However, where a PathLink crosses a RoadLink at a different level (for example a footbridge over a road) the PathLink will not be split and there will be no indication of which link is above the other.

The context diagram (Figure 8) shows how the PathLink has been inherited from INSPIRE and the attribution held on the PathLink.
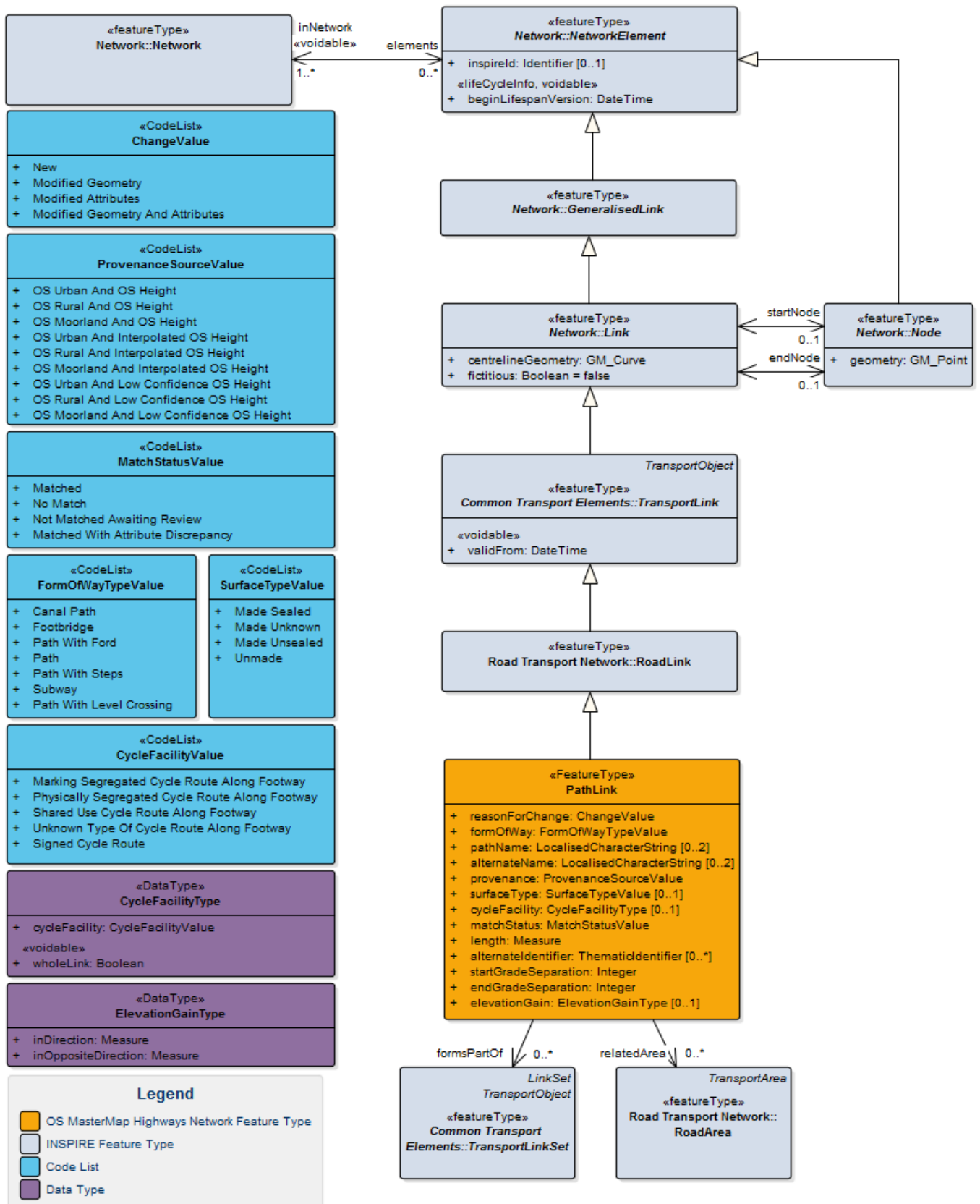
Figure 8: Context Diagram: Path Link

Attributes

«FeatureType» PathLink		
Definition: A linear feature that represents the general alignment of a route used by pedestrians.		
Attribute: id		
Definition: Unique identifier, for PathLink this is a TOID		
Type: CharacterString	**Size**: 20	**Multiplicity**: [1]
Attribute: identifier		
Definition: Uniform Resource Identifier		
Type: CharacterString	**Size**: 37	**Multiplicity**: [1]
Attribute: inspireId		INSPIRE
Definition: External object identifier of the spatial object.		
Type: Identifier		**Multiplicity**: [0..1]
Attribute: beginLifespanVersion «voidable» «lifeCycleInfo»		INSPIRE
Definition: Date and time at which this version of the spatial object was inserted or changed in the spatial data set.		
Note: The time part is always set to zero.		
Type: DateTime		**Multiplicity**: [1]
Attribute: centrelineGeometry		INSPIRE
Definition: The three dimensional geometry that represents the alignment of the path.		
Type: GM_Curve		**Multiplicity**: [1]
Attribute: fictitious		INSPIRE
Definition: Indicator that the centreline geometry of the link is a straight line with no intermediate control points – unless the straight line represents the geography in the resolution of the data set appropriately.		
Type: Boolean	**Size:** 5	**Multiplicity**: [1]
Attribute: validFrom «voidable»		INSPIRE
Definition: The time when the transport link started to exist in the real world.		
Note: The time part is always set to zero.		
Type: DateTime		**Multiplicity**: [1]
Attribute: reasonForChange		
Definition: The reason for a change made to a feature.		
Type: ChangeValue	**Size**: 32	**Multiplicity**: [1]
Attribute: formOfWay		
Definition: A description of the PathLink based on its nature or use.		
Type: FormOfWayTypeValue	**Size**: 42	**Multiplicity**: [1]
Attribute: pathName		
Definition: The name of the path the feature is part of, when a PathLink is referenced by a Street with a streetStateType of Designated Street Name this is the name used else the name is from Path.		
Note: Where a feature has more than one name, the language of each name is provided as a 3-digit ISO 639-2 code ('eng', 'cym', 'gla').		
Type: LocalisedCharacterString	**Size**: 255	**Multiplicity**: [0..2]
Attribute: alternateName		
Definition: Another name for the path the feature is part of, this is populated with the name captured by		

Ordnance Survey when it differs from that in Street.

Note: Where a feature has more than one name, the language of each name is provided as a 3-digit ISO 639-2 code ('eng', 'cym', 'gla').

Type: LocalisedCharacterString	**Size**: 255	**Multiplicity**: [0..2]

Attribute: provenance		
Definition: The origin and derivation of the three dimensional geometry of the PathLink.		
Type: ProvenanceSourceValue	**Size**: 23	**Multiplicity**: [1]

Attribute: surfaceType		
Definition: Nature of the material that the path is made up of.		
Type: SurfaceTypeValue	**Size:** 13	**Multiplicity**: [0..1]

Attribute: cycleFacility		
Definition: Identifies if the PathLink has facilities for a cyclist.		
Type: CycleFacilityType	**Multiplicity**: [0..1]	

Attribute: matchStatus		
Definition: Indication whether the feature has been matched to a feature in the NSG		
Type: MatchStatusValue	**Size**: 39	**Multiplicity**: [1]

Attribute: length		
Definition: The calculated two dimensional length of the PathLink in metres.		
Note: A Unit of Measure (uom) is provided as part of the attribute which will always be 'm'.		
Type: Measure	**Size**: 7,2	**Multiplicity**: [1]

Attribute: alternateIdentifier		
Definition: Identifier(s) of the Elementary Street Unit from NSG or TRSG		
Type: ThematicIdentifier	**Size**: 20	**Multiplicity**: [0..*]

Attribute: startGradeSeparation		
Definition: The relative level of the link at the startNode.		
Type: Integer		**Multiplicity**: [1]

Attribute: endGradeSeparation		
Definition: The relative level of the link at the endNode.		
Type: Integer		**Multiplicity**: [1]

Attribute: elevationGain		
Definition: The elevation gain is calculated from three-dimensional geometry to define the total ascent experienced when passing along a PathLink feature. The value is expressed both with and against the direction of digitising.		
Type: ElevationGainType		**Multiplicity**: [0..1]

Association: formsPartOf	
Definition: Identifier of the Path or Street to which the PathLink forms part of.	
Multiplicity: 0..*	**Size**: 20

Association: startNode	INSPIRE
Definition: The node coincident with the first vertex of the geometry attribute.	
Multiplicity: 0..1	**Size**: 20

Association: endNode	INSPIRE
Definition: The node coincident with the last vertex of the geometry attribute.	
Multiplicity: 0..1	**Size**: 20

Association: relatedRoadArea
Definition: Reference to the topographic representation(s) of the same part of the path.
Multiplicity: 1..* · Size: 20

PathNode

Overview

A point spatial object that is used to break up the path network for connectivity. The PathNode extends the RoadNode feature in the INSPIRE Transport Network (roads) model. The path network splits for the following circumstances:

- The location where an attribute changes
- The intersection or crossing of PathLink's
- The start/end of a PathLink

The context diagram (Figure 9) shows how the PathNode has been inherited from INSPIRE and the attribution held on the PathNode.
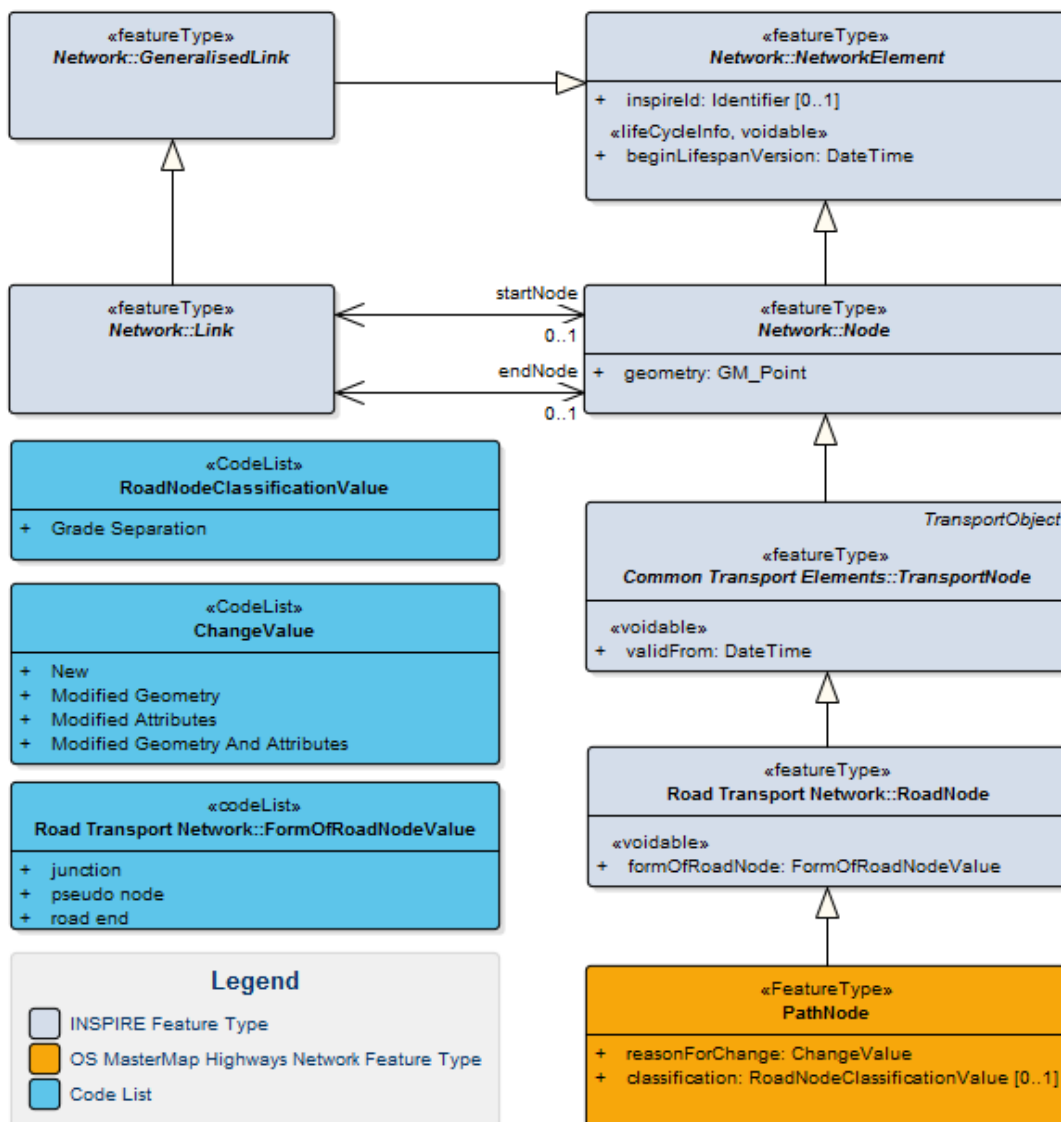
Figure 9: Context Diagram: PathNode

Attributes

«FeatureType» PathNode		
Definition: A point representing either the start/end of a path, the connectivity between two or more paths or where one of the recorded attributes changes.		

Attribute: id		
Definition: Unique identifier, for PathNode this is a TOID		
Type: CharacterString	**Size**: 20	**Multiplicity**: [1]

Attribute: identifier		
Definition: Uniform Resource Identifier		
Type: CharacterString	**Size**: 37	**Multiplicity**: [1]

Attribute: inspireId		INSPIRE
Definition: External object identifier of the spatial object.		
Type: Identifier		**Multiplicity**: [0..1]

Attribute: beginLifespanVersion «lifeCycleInfo» «voidable»		INSPIRE
Definition: Date and time at which this version of the spatial object was inserted or changed in the spatial data set.		
Note: The time part is always set to zero.		
Type:DateTime		**Multiplicity**: [1]

Attribute: geometry		INSPIRE
Definition: The location of the node.		
Type:GM_Point		**Multiplicity**: [1]

Attribute: validFrom «voidable»		INSPIRE
Definition: The time when the transport node started to exist in the real world.		
Note: The time part is always set to zero.		
Type:DateTime		**Multiplicity**: [1]

Attribute: formOfRoadNode «voidable»		INSPIRE
Definition: Description of the function of a path node in the road transport network.		
Type:FormOfRoadNodeValue	**Size**: 21	**Multiplicity**: [1]

Attribute: reasonForChange		
Definition: The reason for a change made to a feature.		
Type: ChangeValue	**Size**: 32	**Multiplicity**: [1]

Attribute: classification		
Definition: Further specialisation of the form of path node		
Type: RoadNodeClassificationValue	**Size**: 19	**Multiplicity**: [0..1]

ConnectingLink

Overview

The Road and Path Network are not topologically structured together. ConnectingLinks have been introduced to enable a connection between the Road Network and the Path Network without splitting the Road Network. A ConnectingLink feature is a linear spatial object which represents a logical connection between the Path Network and the Road Network and they do represent a feature in the real world. A ConnectingLink will always reference a PathNode and a ConnectingNode. The context diagram (Figure 10) shows how the ConnectingLink relates to PathNodes and ConnectingNodes.

Three dimensional geometry has been given to ConnectingLink features. This is to facilitate routing that requires coincidence of co-ordinates, given the nature of connecting feature this geometry is for connectivity purposes only.

Attributes

«FeatureType» ConnectingLink		
Definition: A ConnectingLink is not a representation of a real world object. It is a logical indicator of the connection between the Path network and the Road network		
Attribute: id		
Definition: Unique identifier, for ConnectingLink this is a TOID		
Type: CharacterString	**Size**: 20	**Multiplicity**: [1]
Attribute: identifier		
Definition: Uniform Resource Identifier		
Type: CharacterString	**Size**: 37	**Multiplicity**: [1]
Attribute: inspireId		INSPIRE
Definition: External object identifier of the spatial object.		
Type:Identifier		**Multiplicity**: [0..1]
Attribute: beginLifespanVersion		INSPIRE
Definition: Date and time at which this version of the spatial object was inserted or changed in the spatial data set.		
Note: The time part is always set to zero.		
Type:DateTime		**Multiplicity**: [1]
Attribute: reasonForChange		
Definition: The reason for a change made to a feature.		
Type: ChangeValue	**Size:** 32	**Multiplicity**: [1]
Attribute: geometry		
Definition: The implied connection between the RoadLink and the PathLink. Note, this is represented as a three dimensional geometry to facilitate connectivity but it is a logical connection not a physical alignment.		
Type: GM_Curve		**Multiplicity**: [1]
Attribute: fictitious		
Definition: Indicator that the geometry of the link is a straight line with no intermediate control points – unless the straight line represents the geography in the resolution of the data set appropriately.		
Type: Boolean	**Size:** 5	**Multiplicity**: [1]
Association: connectingNode		
Definition: A reference to the ConnectingNode which the ConnectingLink references.		
Multiplicity: 1		**Size:** 20
Association: pathNode		

Definition: A reference to the PathNode which the ConnectingLink references.	
Multiplicity: 1	**Size:** 20

ConnectingNode

Overview

A ConnectingNode is a point feature that identifies the point along the RoadLink which the PathLink connects to. The ConnectingNode has been snapped to a vertex along the RoadLink and provides a reference to the RoadLink it has been snapped to. The RoadLink is not split at the location of the ConnectingNode. The ConnectingNode is referenced by a ConnectingLink.

The context diagram (Figure 10) shows how the ConnectingNode relates to the RoadLink.

Three dimensional geometry has been applied to ConnectingNode features. This is to facilitate routing that requires coincidence of co-ordinates, given the nature of connecting feature this geometry is for connectivity purposes only.

Attributes

«FeatureType» ConnectingNode		
Definition: A point which connects the Road network to the Path Network. The ConnectingNode does not cause a break in the RoadLink but it will be snapped to a vertex along a RoadLink.		
Attribute: id		
Definition: Unique identifier, for ConnectingNode this is a TOID		
Type: CharacterString	**Size**: 20	**Multiplicity**: [1]
Attribute: identifier		
Definition: Uniform Resource Identifier		
Type: CharacterString	**Size**: 37	**Multiplicity**: [1]
Attribute: inspireId		
Definition: External object identifier of the spatial object.		
Type:Identifier		**Multiplicity**: [0..1]
Attribute: beginLifespanVersion		
Definition: Date and time at which this version of the spatial object was inserted or changed in the spatial data set.		
Note: The time part is always set to zero.		
Type:DateTime		**Multiplicity**: [1]
Attribute: reasonForChange		
Definition: The reason for a change made to a feature.		
Type: ChangeValue	**Size:** 32	**Multiplicity**: [1]
Attribute: geometry		
Definition: The location of the node which indicates where the Path network connects to the Road network		
Type: GM_Point		**Multiplicity**: [1]
Association: roadLink «voidable»		
Definition: A reference to the RoadLink which the ConnectingNode has been snapped to.		
Multiplicity: 1		**Size:** 20
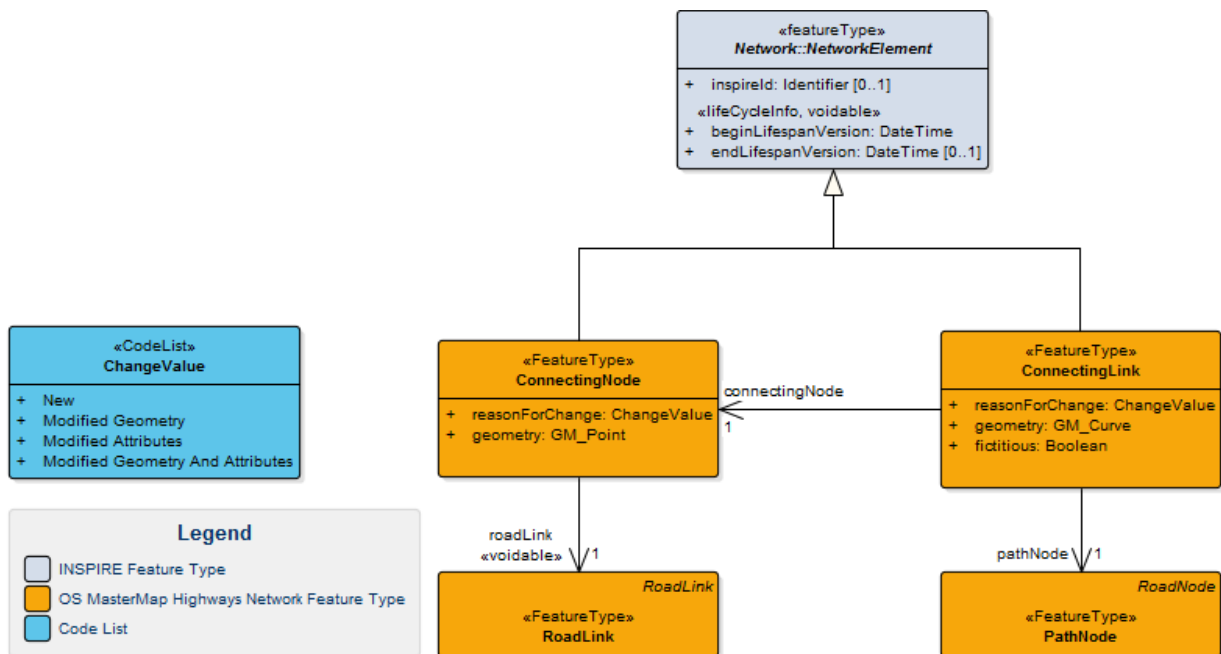
Figure 10: Context Diagram: ConnectingLink and ConnectingNode

Path

Overview

A Path feature is a link set which represents a collection of PathLink features that share the same name (e.g. Church Walk). A Path will reference the complete collection of RoadLink features irrespective of which authority boundary it falls within. A PathLink feature may be referenced by multiple Path features.

The context diagram (Figure 11) shows how the Path feature has been inherited from INSPIRE and the attribution held on the Path.

Figure 11 Context Diagram: Path

Attributes

«FeatureType» Path		
Definition: A compound feature that represents a path with a name. This references a collection of PathLinks.		
Attribute: id		
Definition: Unique identifier, for Path this is a TOID		
Type: CharacterString	**Size**: 20	**Multiplicity**: [1]
Attribute: identifier		
Definition: Uniform Resource Identifier		
Type: CharacterString	**Size**: 37	**Multiplicity**: [1]
Attribute: inspireId		INSPIRE
Definition: External object identifier of the spatial object.		
Type: Identifier		**Multiplicity**: [0..1]
Attribute: beginLifespanVersion «lideCycleInfo» «voidable»		INSPIRE
Definition: Date and time at which this version of the spatial object was inserted or changed in the spatial data		

set.		
Note: The time part is always set to zero.		
Type: DateTime		**Multiplicity**: [1]
Attribute: validFrom «voidable»		INSPIRE
Definition: The time when the transport link set started to exist in the real world.		
Note: The time part is always set to zero.		
Type: DateTime		**Multiplicity**: [1]
Attribute: reasonForChange		
Definition: The reason for a change made to a feature.		
Type: ChangeValue	**Size**: 32	**Multiplicity**: [1]
Attribute: pathName		
Definition: The name assigned to the feature which all the referenced links have in common.		
Note: Where a feature has more than one name, the language of each name is provided as a 3-digit ISO 639-2 code ('eng', 'cym', 'gla').		
Type: LocalisedCharacterString	**Size:** 255	**Multiplicity**: [1..2]
Aggregation: link		INSPIRE
Definition: The reference to the PathLink features which builds up the Path feature.		
Multiplicity: 1..*		**Size**: 20

Street

Overview

A Street feature extends and specialises the Road feature (Figure 12) and in the Path Network product they will only represent Streets made up of PathLinks. A Street feature is populated from the National Street Gazetteer and will exist where their Elementary Street Unit geometry has been matched too only PathLinks. They will represent either the complete Street or a section of a Street within an Administrative Unit, Town, or Locality and provides additional information about who is responsible for its naming and or numbering. A PathLink can be referenced by multiple Street features.

The Street extends the Road feature to provide the additional attribution required to adhere to BS 7666

- **USRN**: the identifier of a Street is being assigned by the Street Naming and Numbering authority who shall assign the Street a Unique Street Reference Number (USRN)

- **Street Type**: The type of Gazetteer record for which the USRN relates.

- **Operational State**: indicates whether the Street is proposed, under construction, open, or closed (permanently or temporarily)

- **Responsible Authority:** reference to the authority who performs an administrative function – notably naming and numbering

A Street will split when it crosses the boundary of an Administrative Area where the local maintenance responsibility changes. A Street could also split at a town or locality boundary to allow properties to be located uniquely upon a street via a geographic identifier (i.e. USRN).

«featureType»
Road Transport Network::Road

TransportLinkSet

«voidable»
+ localRoadCode: CharacterString [0..1]
+ nationalRoadCode: CharacterString [0..1]

«FeatureType»
Road

+ descriptor: LocalisedCharacterString [0..2]
+ designatedName: DesignatedNameType [0..2]
+ localName: LocalisedCharacterString [0..2]
+ reasonForChange: ChangeValue
+ roadClassification: RoadClassificationValue [0..1]

«FeatureType»
Street

+ administrativeArea: LocalisedCharacterString [1..2]
+ geometry: GM_MultiCurve
+ geometryProvenance: ProvenanceSourceValue
+ locality: LocalisedCharacterString [0..2]
+ operationalState: OperationalStateType [0..1]
+ responsibleAuthority: ResponsibleAuthority
+ streetType: StreetTypeValue
+ town: LocalisedCharacterString [0..2]

constraints
{A Street shall have at least one of designatedName (Type 1), descriptor (Type 2), nationalRoadCode (Type 3), localRoadCode (Type 3), or localName (Type 4).}
{If a Street has a descriptor, it shall not have a designatedName}
{If geometryProvenance does not = "Ordnance Survey" then 'link' shall be null.}
{If the roadClassification = "Motorway" or "A Road" or "B Road" then the nationalRoadCode shall not be null.}

+gssCode → **«featureType»** *Statistical Units Base::StatisticalUnit* 0..2

«CodeList»
StreetTypeValue

+ Designated Street Name
+ Numbered Street
+ Officially Described Street
+ Unofficial Street Name

«CodeList»
RoadClassificationValue

+ A Road
+ B Road
+ Classified Unnumbered
+ Motorway
+ Not Classified
+ Unclassified
+ Unknown

Legend

- INSPIRE Feature Type
- OS MasterMap Highways Network Feature Type
- Other Feature Type
- Code List
- Data Type

«CodeList»
ChangeValue

+ End Of Life
+ Modified Attributes
+ Modified Geometry
+ Modified Geometry And Attributes
+ New

«CodeList»
OperationalStateValue

+ Addressing Only
+ Open
+ Permanently Closed
+ Prospective
+ Under Construction

«CodeList»
ProvenanceSourceValue

+ Highways England
+ Local Highway Authority
+ Ordnance Survey
+ Transport Scotland
+ Welsh Government

«DataType»
ResponsibleAuthority

+ authorityName: CharacterString
+ identifier: CharacterString

«DataType»
OperationalStateType

+ reason: CharacterString [0..1]
+ state: OperationalStateValue
+ validTime: TM_Period [0..1]

«DataType»
DesignatedNameType

+ name: LocalisedCharacterString
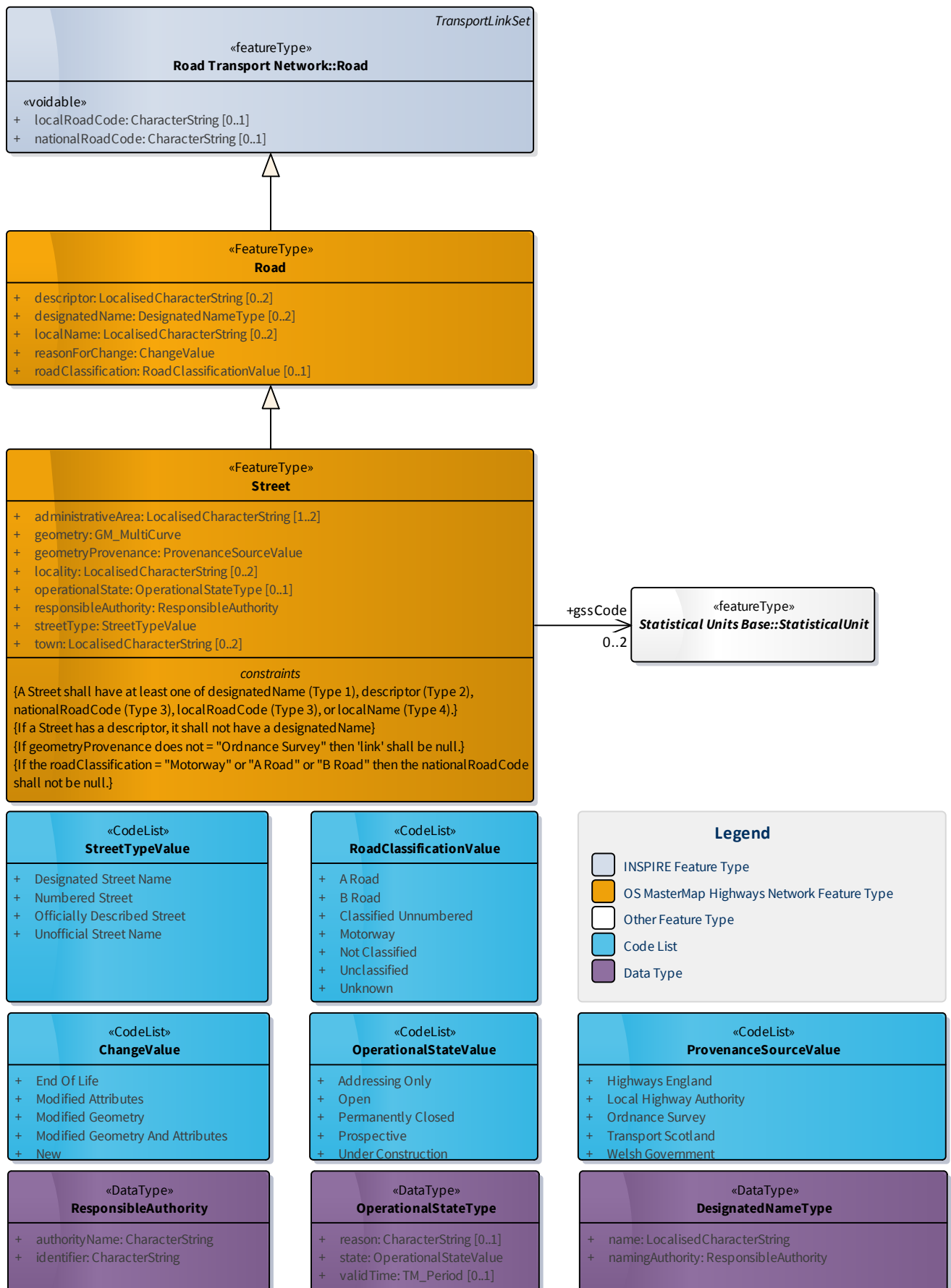+ namingAuthority: ResponsibleAuthority

---

Figure 12 Context Diagram: Street

Attributes

«FeatureType» Street
Definition: Any road, footway, path, cycletrack, track or passageway that forms a highway.   A highway represents individual subsections of Road which are managed (naming/numbering) by a specified responsible authority.

Constraints:
• A Street shall have at least one of designatedName (Type 1), descriptor (Type 2), nationalRoadCode (Type 3), or localName (Type 4).   • If a Street has a descriptor, it shall not have a designatedName

Attribute: id		
Definition: Unique identifier, for Street the characters "USRN" appended with the USRN e.g. USRN12345678		
Type: CharacterString	**Size**: 12	**Multiplicity**: [1]

Attribute: identifier		
Definition: Uniform Resource Identifier		
Type: CharacterString	**Size**: 29	**Multiplicity**: [1]

Attribute: inspireId	
Definition: External object identifier of the spatial object.	
Note: This is the USRN from the NSG or TRSG.	
Type: Identifier	**Multiplicity**: [0..1]

Attribute: beginLifespanVersion «lifeCycleInfo» «voidable»	
Definition: Date and time at which this version of the spatial object was inserted or changed in the spatial data set.	
Note: The time part is always set to zero.	
Type:DateTime	**Multiplicity**: [1]

Attribute: validFrom «voidable»	
Definition: The time when the transport link set started to exist in the real world.	
Note: The time part is always set to zero.	
Type:DateTime	**Multiplicity**: [1]

Attribute: descriptor		
Definition: Street description allocated by a Street Naming Authority or Highway Authority used to identify a street that does not have a designated name.		
Note: Where a feature has more than one name, the language of each name is provided as a 3-digit ISO 639-2 code ('eng', 'cym', 'gla').		
Type:LocalisedCharacterString	**Size**: 120	**Multiplicity**: [0..2]

Attribute: designatedName	
Definition: Official name assigned to the highway by a designated Street Naming Authority.	
Type:DesignatedNameType	**Multiplicity**: [0..2]

Attribute: localName		
Definition: Unofficial local name associated to the highway.		
Note: Where a feature has more than one name, the language of each name is provided as a 3-digit ISO 639-2 code ('eng', 'cym', 'gla').		
Type:LocalisedCharacterString	**Size**: 120	**Multiplicity**: [0..2]

Attribute: reasonForChange

Definition: The reason for a change made to a feature.		
Type:ChangeValue	**Size**: 32	**Multiplicity**: [1]

Attribute: streetType		
Definition: Classification of the type of Street from the National Street Gazetteer.		
Type: StreetTypeValue	**Size**: 35	**Multiplicity**: [1]

Attribute: operationalState		
Definition: Indicator identifying the physical nature of the road e.g. Under Construction.		
Type: OperationalStateType		**Multiplicity**: [1]

Attribute: locality		
Definition: The Populated Place representing the locality that the Street is located within		
Note: Where a feature has more than one name, the language of each name is provided as a 3-digit ISO 639-2 code ('eng', 'cym', 'gla').		
Type: LocalisedCharacterString	**Size**: 35	**Multiplicity**: [0..2]

Attribute: town		
Definition: The settlement that the Street falls within.		
Note: Where a feature has more than one name, the language of each name is provided as a 3-digit ISO 639-2 code ('eng', 'cym', 'gla').		
Type: LocalisedCharacterString	**Size**: 30	**Multiplicity**: [0..2]

Attribute: administrativeArea		
Definition: The administrative area that the Street is located within		
Note: Where a feature has more than one name, the language of each name is provided as a 3-digit ISO 639-2 code ('eng', 'cym', 'gla').		
Type: LocalisedCharacterString	**Size**: 30	**Multiplicity**: [1..2]

Attribute: responsibleAuthority		
Definition: Reference to the authority that has current responsibility for naming and numbering.		
Type: ResponsibleAuthority		**Multiplicity**: [1]

Attribute: geometryProvenance		
Definition: Identify where the geometry of the feature originated.		
Type: ProvenanceSourceValue		**Multiplicity**: [1]

Attribute: geometry		
Definition: The aggregated geometry of all the PathLink features which make up the feature.		
Type: GM_MultiCurve		**Multiplicity**: [1]

Association: gssCode	
Definition: A reference to the unique identifier of administrative areas managed by the Office for National Statistics. Role is used to describe the authority - 'Upper Tier Local Authority', 'Lower Tier Local Authority' and 'Unitary Local Authority'	
Multiplicity: 0..2	**Size:** 9

Aggregation: link	
Definition: The reference to the PathLink features which builds up the Street feature.	
Multiplicity: 1..*	**Size**: 20

FerryLink

Overview

A FerryLink is a linear spatial object which represents the connectivity of a vehicular ferry route across a body of water. A FerryLink will only be captured where the route is limited to pedestrians only and both terminals are within Great Britain, and there is a timetabled service which is open to the public.

The context diagram (Figure 13) shows how the FerryLink has been inherited from INSPIRE, the attribution held on the FerryLink and how it relates to the other Ferry components.

Attributes

«FeatureType» FerryLink		
Definition: A network link representing a route for a vehicular or pedestrian ferry route.		
Attribute: id		
Definition: Unique identifier, for FerryLink this is a TOID		
Type: CharacterString	**Size**: 20	**Multiplicity**: [1]
Attribute: identifier		
Definition: Uniform Resource Identifier		
Type: CharacterString	**Size**: 37	**Multiplicity**: [1]
Attribute: inspireId		INSPIRE
Definition: External object identifier of the spatial object.		
Type: Identifier		**Multiplicity**: [0..1]
Attribute: beginLifespanVersion «lifeCycleInfo» «voidable»		INSPIRE
Definition: Date and time at which this version of the spatial object was inserted or changed in the spatial data set.		
Note: The time part is always set to zero.		
Type:DateTime		**Multiplicity**: [1]
Attribute: centrelineGeometry		INSPIRE
Definition: The three dimensional geometry that represents the connection between the ferry terminals. Where a detailed alignment is provided it is only an indication of the route a vessel would take. The third dimension is only provided for connectivity and does not reflect any real world value.		
Type:GM_Curve		**Multiplicity**: [1]
Attribute: fictitious		INSPIRE
Definition: Indicator that the centreline geometry of the link is a straight line with no intermediate control points – unless the straight line represents the geography in the resolution of the data set appropriately.		
Type:Boolean	**Size:** 5	**Multiplicity**: [1]
Attribute: validFrom «voidable»		INSPIRE
Definition: The time when the transport node started to exist in the real world.		
Note: The time part is always set to zero.		
Type:DateTime		**Multiplicity**: [1]
Attribute: vehicularFerry		
Definition: An indicator if this FerryLink represents a ferry that can be used by vehicles. NOTE: This will always be set too false in the Path Network product.		
Type: Boolean	**Size**: 5	**Multiplicity**: [1]
Attribute: routeOperator		

Definition: The URL to the operator of this Ferry route.		
Type: CharacterString	**Size**: 250	**Multiplicity**: [0..1]
Attribute: reasonForChange		
Definition: The reason for a change made to a feature.		
Type: ChangeValue	**Size:** 32	**Multiplicity**: [1]

Association: startNode	INSPIRE
Definition: The node coincident with the first vertex of the geometry attribute.	

Multiplicity: 0..1	**Size**: 20

Association: endNode	INSPIRE
Definition: The node coincident with the last vertex of the geometry attribute.	

Multiplicity: 0..1	**Size**: 20

FerryNode

Overview

A FerryNode is a point spatial object which is used to represent the connectivity between FerryLinks and where the FerryLinks start and end. A FerryNode feature may serve multiple FerryLink features if more than one destination is served from the same location. FerryNode's will always be referenced by at least one FerryLink.

The context diagram (Figure 13) shows how the FerryNode has been inherited from INSPIRE, the attribution held on the FerryNode and how it relates to the other Ferry components.

Attributes

«FeatureType» FerryNode		
Definition: A feature representing the point at which a vehicular or pedestrian ferry route or section of ferry route starts or ends.		
Attribute: id		
Definition: Unique identifier, for FerryNode this is a TOID		
Type: CharacterString	**Size**: 20	**Multiplicity**: [1]
Attribute: identifier		
Definition: Uniform Resource Identifier		
Type: CharacterString	**Size**: 37	**Multiplicity**: [1]
Attribute: inspireId		INSPIRE
Definition: External object identifier of the spatial object.		
Type:Identifier		**Multiplicity**: [0..1]
Attribute: beginLifespanVersion		INSPIRE
Definition: Date and time at which this version of the spatial object was inserted or changed in the spatial data set.		
Note: The time part is always set to zero.		
Type:DateTime		**Multiplicity**: [1]
Attribute: geometry		INSPIRE
Definition: The location of the node.		
Type:GM_Point		**Multiplicity**: [1]
Attribute: validFrom		INSPIRE
Definition: The time when the transport node started to exist in the real world.		

Note: The time part is always set to zero.		
Type: DateTime		**Multiplicity**: [1]

Attribute: formOfWaterwayNode		INSPIRE
Definition: Description of the function of a waterway node in the water transport network.		
Type: FormOfWaterwayNodeValue	**Size**: 14	**Multiplicity**: [1]

Attribute: reasonForChange		
Definition: The reason for a change made to a feature.		
Type: ChangeValue	**Size**: 32	**Multiplicity**: [1]

FerryTerminal

Overview

The ferry and road network elements are linked together through a FerryTermianl. A FerryTerminal is a logical connection between the two networks and therefore there is no geometry supplied with these features. They will reference one PathNode and one FerryNode. The FerryTerminals will also provide a reference to the OS Mastermap Sites feature.

The context diagram (Figure 13) shows how the FerryTerminal has been inherited from INSPIRE, the attribution held on the FerryTerminal and how it relates to the other Ferry components.

Attributes

«FeatureType» FerryTerminal		
Definition: A logical connection between a PathNode or RoadNode and the FerryNode. It represents the connection between the Road or Path network and the Ferry network.		

Attribute: id		
Definition: Unique identifier, forFerryTerminal this is a TOID		
Type: CharacterString	**Size**: 20	**Multiplicity**: [1]

Attribute: identifier		
Definition: Uniform Resource Identifier		
Type: CharacterString	**Size**: 37	**Multiplicity**: [1]

Attribute: inspireId		INSPIRE
Definition: External object identifier of the spatial object.		
Type: Identifier		**Multiplicity**: [0..1]

Attribute: beginLifespanVersion		INSPIRE
Definition: Date and time at which this version of the spatial object was inserted or changed in the spatial data set.		
Note: The time part is always set to zero.		
Type: DateTime		**Multiplicity**: [1]

Attribute: type		INSPIRE
Definition: Categorisation of the network connection.		
Type: ConnectionTypeValue	**Size:** 10	**Multiplicity**: [1]

Attribute: ferryTerminalName		
Definition: The name of the Ferry Terminal.		
Note: Where a feature has more than one name, the language of each name is provided as a 3-digit ISO 639-2 code ('eng', 'cym', 'gla').		

| **Type**: LocalisedCharacterString	**Size:** 120	**Multiplicity**: [0..2]
Attribute: ferryTerminalCode		
Definition: The recognised code of the Ferry Terminal.		
Type: CharacterString	**Size:** 10	**Multiplicity**: [0..1]
Attribute: reasonForChange		
Definition: The reason for a change made to a feature.		
Type: ChangeValue	**Size:** 32	**Multiplicity**: [1]
Association: refToFunctionalSite		
Definition: Reference to the Site representation of the Ferry Terminal in OS MasterMap Sites Layer.		
Multiplicity: 0..1	**Size: 20**	
Aggregation: element		INSPIRE
Definition: The reference to the RoadNode or PathNode and the FerryNode. The type of node the element is referencing will be identified through the xlink:title.		
Multiplicity: 2..*	**Size**: 20	
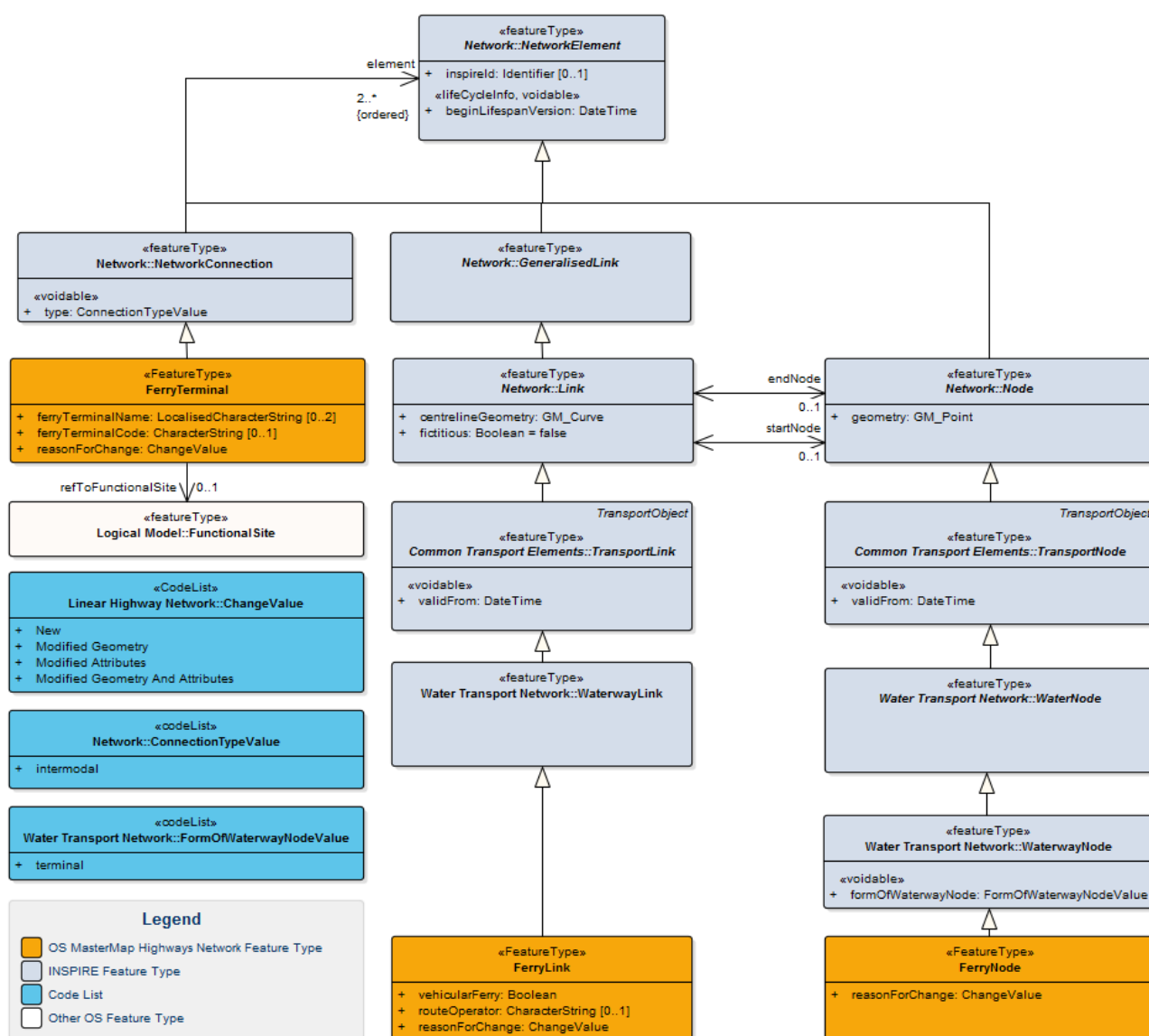
Figure 13: Context Diagram: FerryLink, FerryNode and FerryTerminal

Maintenance

Overview

Maintenance provides information about whether the path is maintained at public expense by a national or local highway authority, a road authority or is maintained by another responsible organisation (i.e. not maintained at public expense). If a path is prospectively maintainable at public expense, then this is not currently maintained by a road or highway authority but the responsible organisation has started the process for a highway or road authority to become responsible for the maintenance of the street at public expense.

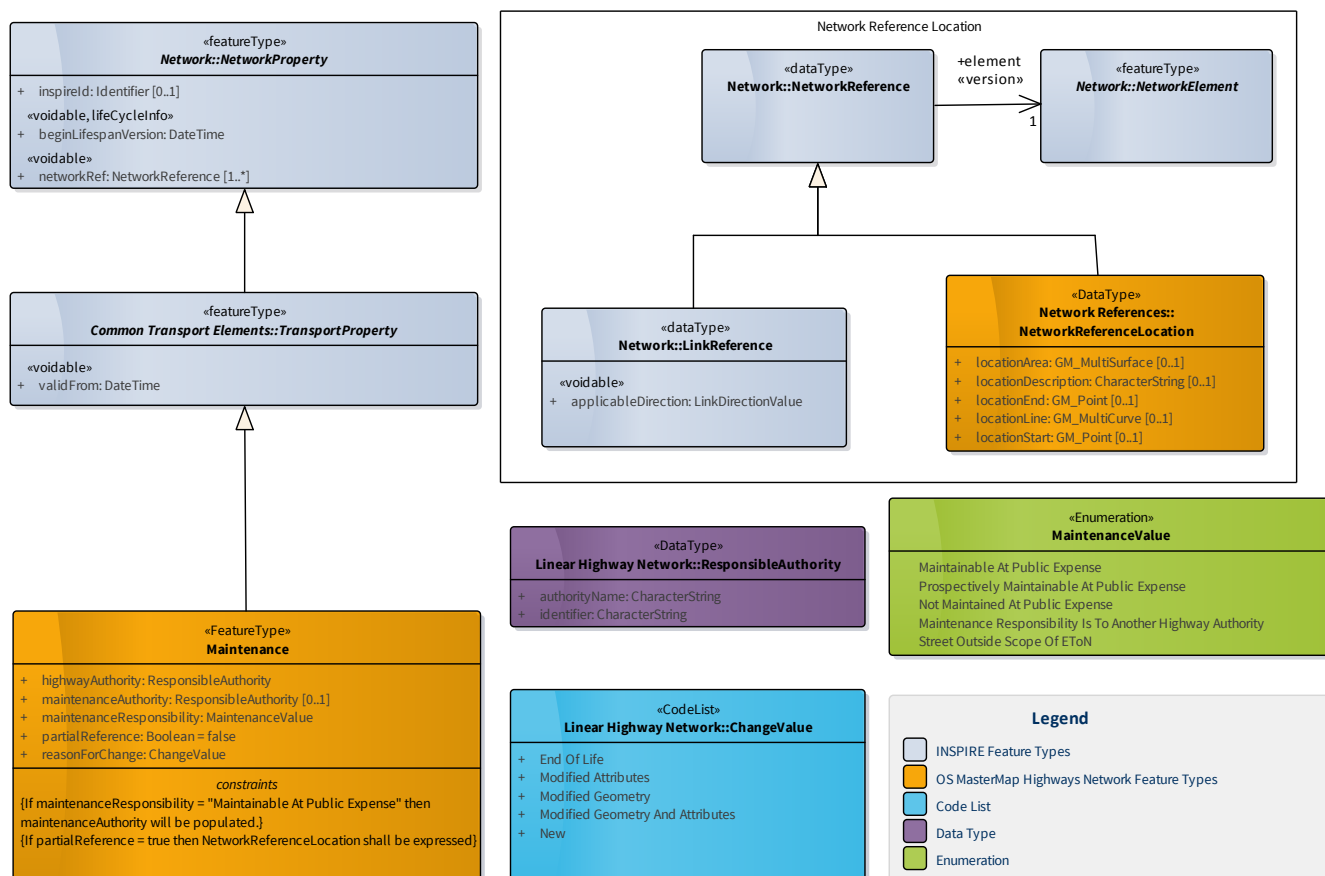*Note: Maintenance responsibility is not an indication of ownership.*

Figure 14 Context Diagram: Maintenance

A Maintenance feature will reference back to the Path Network through a Network Reference and will reference a Street Feature. Features which are a partial reference will provide a Network Reference Location. For more information on Network References please see Chapter 2.

Attribution

«FeatureType» Maintenance
Definition: Indication of whether the highway is maintained by a Highways Authority, Local Highways Authority, Road Authority or privately.
Constraints: If maintenanceResponsibility = "Maintainable At Public Expense" then maintenanceAuthority will be populated.

• If partialRefernce = true then NetworkReferenceLocation shall be expressed.		
Attribute: id		
Definition: Unique identifier		
Type: CharacterString	**Size**: 17	**Multiplicity**: [1]
Attribute: identifier		
Definition: Uniform Resource Identifier		
Type: CharacterString	**Size**: 35	**Multiplicity**: [1]
Attribute: inspireId		INSPIRE
Definition: External object identifier of the spatial object.		
Type:Identifier		**Multiplicity**: [0..1]
Attribute: beginLifespanVersion «voidable»		INSPIRE
Definition: Date and time at which this version of the spatial object was inserted or changed in the spatial data set.		
Note: The time part is always set to zero.		
Type:DateTime		**Multiplicity**: [1]
Attribute: networkRef «voidable»		INSPIRE
Definition: Spatial reference of the network-related property.		
Type:NetworkReference		**Multiplicity**: [1..*]
Attribute: validFrom «voidable»		INSPIRE
Definition: The time when the transport property started to exist in the real world.		
Note: The time part is always set to zero.		
Type:DateTime		**Multiplicity**: [1]
Attribute: maintenanceResponsibility		
Definition: Indication of whether the highway is maintainable at public expense.		
Type: MaintenanceValue	**Size**: 44	**Multiplicity**: [1]
Attribute: maintenanceAuthority		
Definition: Authority responsible for maintenance of the highway.		
Note: When maintenanceResponsibility = 'Not Maintained at Public Expense' the maintenanceAuthority will be null.		
Type: ResponsibleAuthority		**Multiplicity**: [0..1]
Attribute: partialReference		
Definition: Flag to indicate that the maintenance feature partially references a Street.		
Type: Boolean	**Size:** 5	**Multiplicity**: [1]
Attribute: highwayAuthority		
Definition: The authority which the highway resides in.		
Note: When the maintenanceAuthoirty is Highways England then highwayAuthority will be set to Highways England.		
When maintenanceResponsibility = 'Not Maintained at Public Expense' then this is the authority the works operator must contact when applying to carry out works on this street.		
Type: ResponsibleAuthority		**Multiplicity**: [1]

Attribute: reasonForChange		
Definition: The reason for a change made to a feature.		
Type: ChangeValue	Size: 32	Multiplicity: [1]

Reinstatement

Overview

Reinstatement defines the standard to which the path must be restored to following opening due to works in the highway, as defined in the New Roads and Street Works Act Specification for the Reinstatement of Openings in Highways in England and Wales and the New Roads and Street Works Act 1991 Specification for the Reinstatement of Openings in Roads in Scotland.

A Reinstatement feature will reference back to the Path Network through a Network Reference and will reference a Street Feature. Features which are a partial reference will provide a Network Reference Location. For more information on Network References please see Chapter 2.
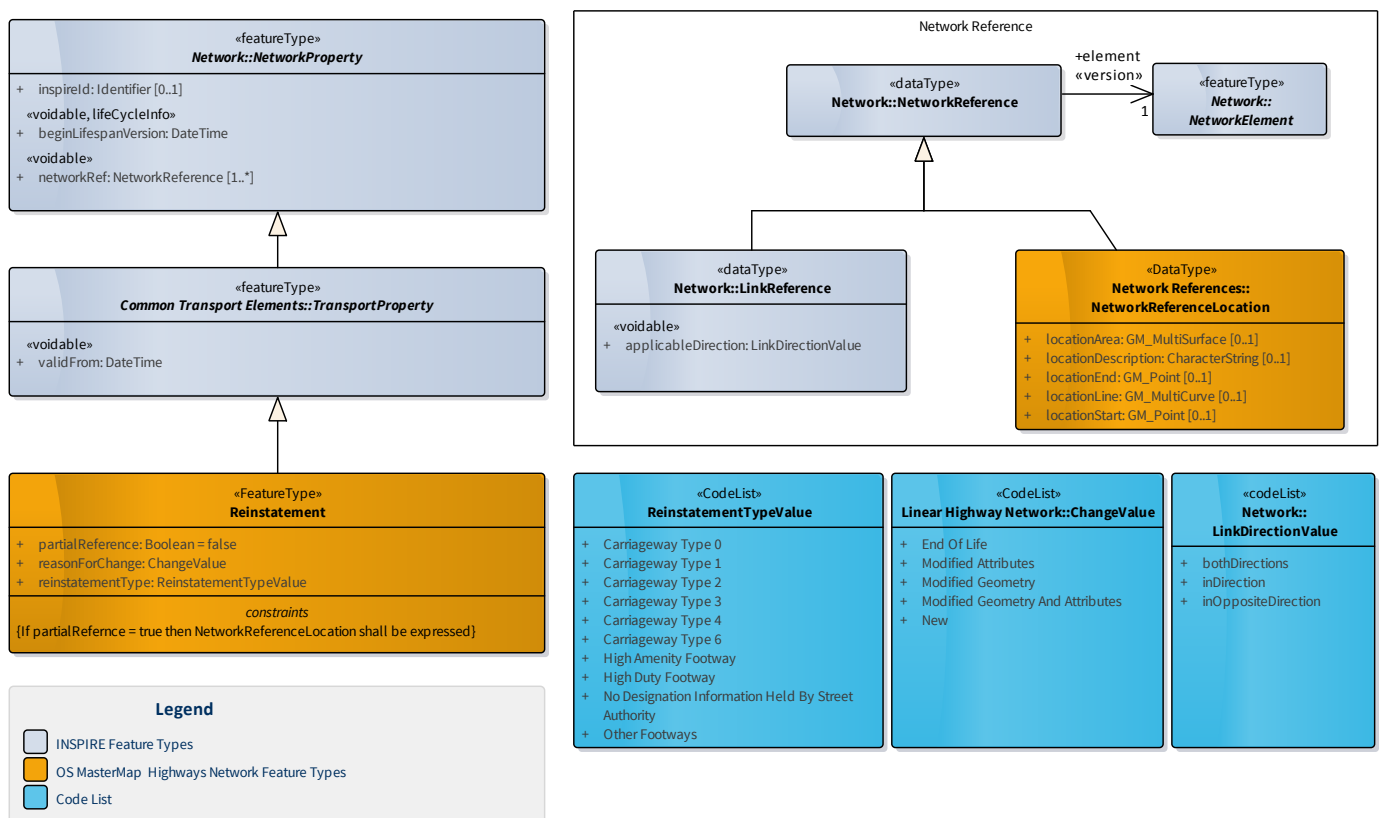
Figure 15: Context Diagram: Reinstatement

Attribution

«FeatureType» Reinstatement		
Definition: The standard to which the highway must be restored to following street works.		
Constraints: • If partialRefernce = true then NetworkReferenceLocation shall be expressed.		
Attribute: id		
Definition: Unique identifier		
Type: CharacterString	Size: 17	Multiplicity: [1]

Attribute: identifier		
Definition: Uniform Resource Identifier		
Type: CharacterString	**Size**: 35	**Multiplicity**: [1]
Attribute: inspireId		INSPIRE
Definition: External object identifier of the spatial object.		
Type:Identifier		**Multiplicity**: [0..1]
Attribute: beginLifespanVersion «voidable»		INSPIRE
Definition: Date and time at which this version of the spatial object was inserted or changed in the spatial data set.		
Note: The time part is always set to zero.		
Type:DateTime		**Multiplicity**: [1]
Attribute: networkRef «voidable»		INSPIRE
Definition: Spatial reference of the network-related property.		
Type:NetworkReference		**Multiplicity**: [1..*]
Attribute: validFrom «voidable»		INSPIRE
Definition: The time when the transport property started to exist in the real world.		
Note: The time part is always set to zero.		
Type:DateTime		**Multiplicity**: [1]
Attribute: reinstatementType		
Definition: Reinstatement as defined in the Specification for Reinstatement of Opening in Highways codes of practice in England and Wales and the Specification for the Reinstatement of Openings in Roads in Scotland.		
Type: ReinstatementTypeValue	**Size**: 51	**Multiplicity**: [1]
Attribute: partialReference		
Definition: Flag to indicate that the maintenance feature partially references a Street.		
Type: Boolean	**Size:** 5	**Multiplicity**: [1]
Attribute: reasonForChange		
Definition: The reason for a change made to a feature.		
Type: ChangeValue	**Size**: 32	**Multiplicity**: [1]

SpecialDesignation

Overview

Special Designations are statutory and advisory designations that can be applied to protect a highway when street or road works are to be undertaken.

A Special Designation feature will reference back to the Path Network through Network Reference and will reference a Street Feature. Features which are a partial reference will provide a Network Reference Location. For more information on Network References please see Chapter 2.
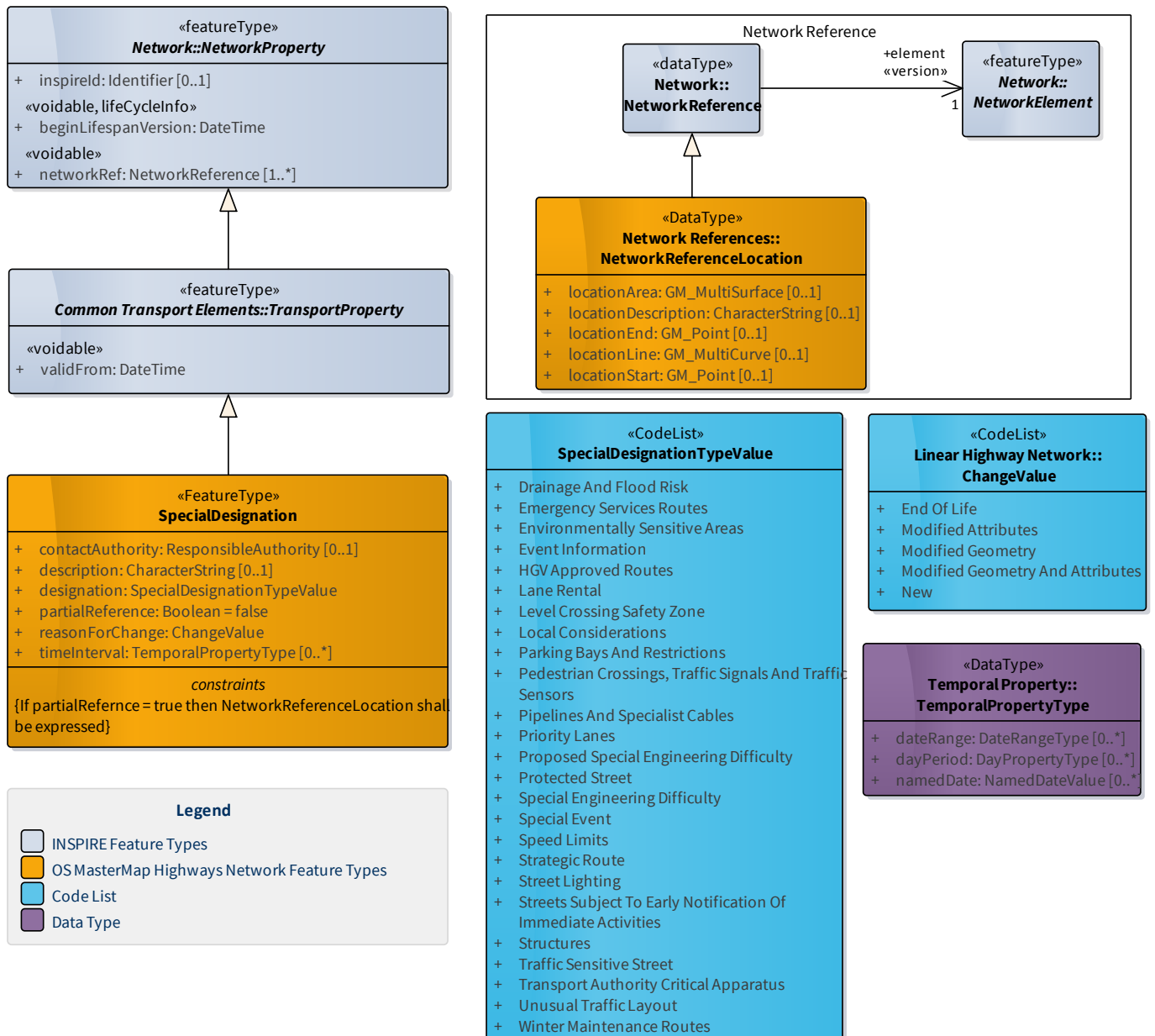
Figure 16 Context Diagram: Special Designation

Attribution

«FeatureType» SpecialDesignation		
Definition: A description applied to a highway to protect it during Street or Road Works		
Constraints: • If partialRefernce = true then NetworkReferenceLocation shall be expressed.		
Attribute: id		
Definition: Unique identifier		
Type: CharacterString	**Size**: 17	**Multiplicity**: [1]
Attribute: identifier		
Definition: Uniform Resource Identifier		
Type: CharacterString	**Size**: 35	**Multiplicity**: [1]
Attribute: inspireId		INSPIRE

Definition: External object identifier of the spatial object.		
Type:Identifier		**Multiplicity**: [0..1]
Attribute: beginLifespanVersion «voidable»		INSPIRE
Definition: Date and time at which this version of the spatial object was inserted or changed in the spatial data set.		
Note: The time part is always set to zero.		
Type:DateTime		**Multiplicity**: [1]
Attribute: networkRef «voidable»		INSPIRE
Definition: Spatial reference of the network-related property.		
Type:NetworkReference		**Multiplicity**: [1..*]
Attribute: validFrom «voidable»		INSPIRE
Definition: The time when the transport property started to exist in the real world.		
Note: The time part is always set to zero.		
Type:DateTime		**Multiplicity**: [1]
Attribute: validTo «voidable»		INSPIRE
Definition: The time from which the transport property no longer exists in the real world.		
Note: The time part is always set to zero.		
Type:DateTime		**Multiplicity**: [1]
Attribute: designation		
Definition: Type of Special Designation.		
Type: SpecialDesignationTypeValue	**Size**: 30	**Multiplicity**: [1]
Attribute: description		
Definition: Additional information describing the special designation.		
Type: CharacterString	**Size**: 50	**Multiplicity**: [0..1]
Attribute: timeInterval		
Definition: Time period to which the restriction applies.		
Type: TemporalPropertyType		**Multiplicity**: [0..1]
Attribute: contactAuthority		
Definition: Highway authority to be contacted for further consultation about the special designation.		
Type: ResponsibleAuthority		**Multiplicity**: [0..1]
Attribute: partialReference		
Definition: Flag to indicate that the maintenance feature partially references a Street.		
Type: Boolean	**Size:** 5	**Multiplicity**: [1]
Attribute: reasonForChange		
Definition: The reason for a change made to a feature.		
Type: ChangeValue	**Size**: 32	**Multiplicity**: [1]

HighwayDedication

Overview

Highway dedication provides an indication of the type of Highway user who has access to that particular section of the Highway.

Against every section of geometry supplied by the local highway authority there will be one of 8 different types of Highway Dedication defined in the Highways Act 1980 and the Countryside and Rights of Way Act 2000 which determines the Highway user access.

There can only be one Highway Dedication type applied to the geometry at any given date or time.

It is likely that more than one Highway Dedication type applies to a section of Highway (i.e. a highway open to all vehicles will also have pedestrian way or footway access) so the following is an order of priority where the highway dedications under each is inferred:

- Motorway*
- All Vehicles
- Byway Open to All Traffic
- Restricted byway
- Bridleway
- Cycle Track* or Cycle way
- Pedestrian Way or footpath

*Motorways and Cycle Tracks (not Cycle Ways) impose restrictions on all other Highway users.

The Highway Dedication also identifies if the feature forms part of a National Cycle Route, Public Right of Way, Quiet Route, Physical Obstruction or Planning Order or Vehicular Traffic order exist.

Note: The Highway dedication value is only an inference of where a Public Right of Way exists and therefore not the definitive record of Public Rights of Way, that is the definitive map held by the relevant authority.

A Highway Dedication feature will reference back to the Path Network through Network Reference and will reference a RoadLink or Street Feature. For more information on Network References please see Chapter 2.
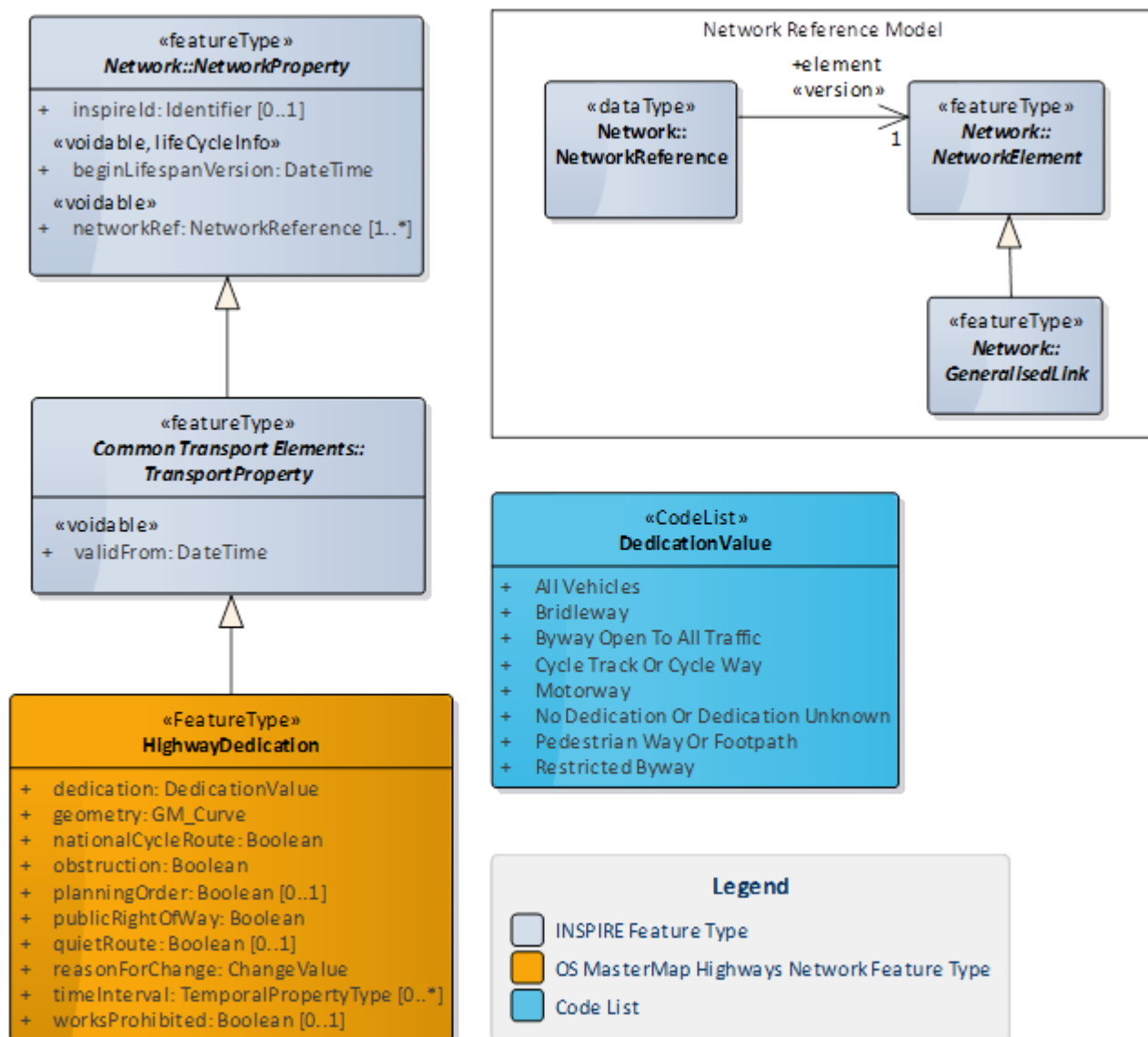
Figure 17 Context Diagram: HighwayDedication

Attribution

«FeatureType» HighwayDedication		
Definition: Definition of which type of Highway user has access to a particular section of the Highway.		
Attribute: id		
Definition: Unique identifier		
Type: CharacterString	**Size**: 20	**Multiplicity**: [1]
Attribute: identifier		
Definition: Uniform Resource Identifier		
Type: CharacterString	**Size**: 37	**Multiplicity**: [1]
Attribute: inspireId INSPIRE		
Definition: External object identifier of the spatial object.		
Type:Identifier		**Multiplicity**: [0..1]
Attribute: beginLifespanVersion «voidable» INSPIRE		

Definition: Date and time at which this version of the spatial object was inserted or changed in the spatial data set.		
Note: The time part is always set to zero.		
Type: DateTime		**Multiplicity**: [1]
Attribute: networkRef «voidable» INSPIRE		
Definition: Spatial reference of the network-related property.		
Type: NetworkReference		**Multiplicity**: [1..*]
Attribute: validFrom «voidable» INSPIRE		
Definition: The time when the transport property started to exist in the real world.		
Note: The time part is always set to zero.		
Type: DateTime		**Multiplicity**: [1]
Attribute: reasonForChange		
Definition: The reason for a change made to a feature.		
Type: ChangeValue	**Size**: 32	**Multiplicity**: [1]
Attribute: dedication		
Definition: The type of Highway Dedication that applies to this section of the Street.		
Type: DedicationValue	**Size**: 35	**Multiplicity**: [1]
Attribute: timeInterval		
Definition: Time period to which the dedication applies.		
Type: TemporalPropertyType		**Multiplicity**: [0..*]
Attribute: publicRightOfWay		
Definition: An indication if the dedication is subject to a public right of way.		
Type:Boolean	**Size:** 5	**Multiplicity**: [1]
Attribute: nationalCycleRoute		
Definition: An indication if the dedication is subject to a formal cycle classification.		
Type:Boolean	**Size:** 5	**Multiplicity**: [1]
Attribute: quietRoute		
Definition: An indication if the dedication is subject to a quiet route.		
Type:Boolean	**Size:** 5	**Multiplicity**: [1]
Attribute: obstruction		
Definition: An indication if the dedication contains a physical obstruction to vehicles.		
Type:Boolean	**Size:** 5	**Multiplicity**: [1]
Attribute: planningOrder		
Definition: An indication if a pedestrian planning order applies to the dedication.		
Type:Boolean	**Size:** 5	**Multiplicity**: [1]
Attribute: worksProhibited		
Definition: An indication if the dedication has a Traffic Regulation Order prohibiting any works in the Highway at all times.		
Type:Boolean	Size: 5	Multiplicity: [1]
Attribute: geometry		
Definition: The geometry that represents the centreline of the dedication.		
Type: GM_Curve		**Multiplicity**: [1]

Data Types

Identifier

The Identifier is an INSPIRE data type and its elements make up the "inspireId" attribute which can be found across all feature type in the OS MasterMap Highways Network.

«DataType» Identifier		
Definition: External unique object identifier published by the responsible body, which may be used by external applications to reference the spatial object.		
Attribute: localId		
Definition: The local identifier is unique within the namespace, that is no other spatial object carries the same unique identifier.		
Type: CharacterString	**Size**: 16	**Multiplicity**: [1]
Attribute: namespace		
Definition: Namespace uniquely identifying the data source of the spatial object.		
Type: CharacterString	**Size**: 18	**Multiplicity**: [1]

CycleFacilityType

A PathLink could be attributed with "cycleFacility" with a data type of "CycleFacilityType". The attribution of this data type is detailed below.

«DataType» CycleFacilityType	
Attribute: cycleFacility	
Definition: The cycle amenity available along the link.	
Type: CycleFacilityValue	**Multiplicity**: [1]
Attribute: wholeLink	
Definition: Identifies if the facility applies to entirety of the link.	
Type: Boolean	**Multiplicity**: [1]

ElevationGainType

A PathLink could be attributed with "elevationGain" with a data type of "ElevationGainType". The attribution of this data type is detailed below.

«DataType» ElevationGainType	
Attribute: inDirection	
Definition: Total increase in height experienced when passing along the link from the start to the end.	
Type: Measure	**Multiplicity**: [1]
Attribute: inOppositeDirection	
Definition: Total increase in height experienced when passing along the link from the end to the start.	
Type: Measure	**Multiplicity**: [1]

OperationalStateType

Streets are attributed with an "operationalState" with a data type of "OperationalStateType". The attribution of this data type is detailed below.

«DataType» OperationalStateType		
Attribute: state		
Definition: Indicator identifying the physical nature of the road e.g. Under Construction		
Type: OperationalStateValue	**Size**: 19	**Multiplicity**: [1]
Attribute: validTime		
Definition: If known, the real-world start and end date/times when the state applies.		
Type: TM_Period		**Multiplicity**: [0..1]
Attribute: reason		
Definition: Short description of the reason for closure.		
Type: CharacterString	**Size**: 120	**Multiplicity**: [0..1]

DesignatedNameType

Streets are attributed with a "designatedName" with a data type of "DesignatedNameType". The attribution of this data type is detailed below.

«DataType» DesignatedNameType		
Definition: The name assigned to the road or street by a designated Street Naming Authority.		
Attribute: name		
Definition: Official name assigned to the highway by a designated Street Naming Authority.		
Note: Where a feature has more than one name, the language of each name is provided as a 3-digit ISO 639-2 code ('eng', 'cym', 'gla').		
Type: LocalisedCharacterString	**Size**: 255	**Multiplicity**: [1]
Attribute: namingAuthority		
Definition: The Street Naming Authority for the designatedName.		
Type: ResponsibleAuthority		**Multiplicity**: [1]

ResponsibleAuthority

Street, Maintenance and SpecialDesignation feature types are made up with the 'ResponsibleAuthority' feature type. The below table illustrates what attribution makes up this data type.

«DataType» ResponsibleAuthority		
Definition: The authority responsible for the street naming and numbering or maintenance.		
Attribute: identifier		
Definition: Identification code used to identify the authority Example: 0114		
Type: CharacterString	**Size**: 4	Multiplicity: [1]
Attribute: authorityName		
Definition: Official name of the authority Example: Bath and North East Somerset		

Type: CharacterString	**Size**: 100	Multiplicity: [1]

TemporalPropertyType

SpecialDesignations have a property of 'timeInterval' which has the type of 'TemporalPropertyType'. The below table describes this data type and Figure 18 illustrates how it is made up. There is a hierarchal structure to the Temporal Properties which is shown in Figure 7.

«DataType» TemporalPropertyType	
Definition: The time period which a restriction is in place.	
Constraints - A TermporalPropertyType shall have at least one of namedDate, dateRange, or dayPeriod - When namedDate = 'All Dates' no other values for namedDate or dateRange shall be populated	
Attribute: namedDate	
Definition: The named month or period this time interval applies.	
Type: NamedDateValue	**Multiplicity**: [0..*]
Attribute: dateRange	
Definition: The range of dates the time restriction is in place for.	
Type: DateRangeType	**Multiplicity**: [0..*]
Attribute: dayPeriod	
Definition: A restriction which applies on a specified day.	
Type: DayPropertyType	**Multiplicity**: [0..*]

DateRangeType

The "dateRange" attribute on the 'TemporalPropertyType' has a data type of "DateRangeType". The below table describe how this data type is constructed.

«DataType» DateRangeType	
Attribute: startDate	
Definition: The date which the restriction applies starts. This will be in the format YYYY-MM-DD.	
Type: Date	**Multiplicity**: [0..1]
Attribute: endDate	
Definition: The date which the restriction applies ends. This will be in the format YYYY-MM-DD.	
Type: Date	**Multiplicity**: [0..1]

DayPropertyType

The "dayPeriod" attribute on the 'TemporalPropertyType' has a data type of "DayPropertyType". The below table describe how this data type is constructed.

«DataType» DayPropertyType	
Constraints A DayPropertyType shall have at least one of namedDay, namedPeriod, or timePeriod	

• When namedDay = 'All Days' no other values for namedDay or namedPeriod shall be populated		
Attribute: namedDay		
Definition: The named day this restriction applies.		
Type: NamedDayValue	**Multiplicity**: [0..*]	
Attribute: namedPeriod		
Definition:		
Type: NamedPeriodValue	**Multiplicity**: [0..*]	
Attribute: timePeriod		
Definition: The period of time on the specified day which the restriction applies.		
Type: TimePropertyType	**Multiplicity**: [0..*]	

TimePropertyType

The "timePeriod" attribute on the 'DayPropertyType' has a data type of "TimePropertyType". The below table describe how this data type is constructed.

«DataType» TimePropertyType	
Constriants	
• A TimePropertyType shall have at least one of timeRange, or namedTime.	
• When namedTime = 'All Day' no other values for namedTime or timeRange shall be populated	
Attribute: namedTime	
Definition: These are named time periods that do not relate to the same time each day	
Type: NamedTimeValue	**Multiplicity**: [0..*]
Attribute: timeRange	
Definition: The range of time which a restriction applies.	
Type: TimeRangeType	**Multiplicity**: [0..*]

TimeRangeType

The "timeRange" attribute on the 'TimePropertyType' has a data type of "TimeRangeType". The below table describe how this data type is constructed.

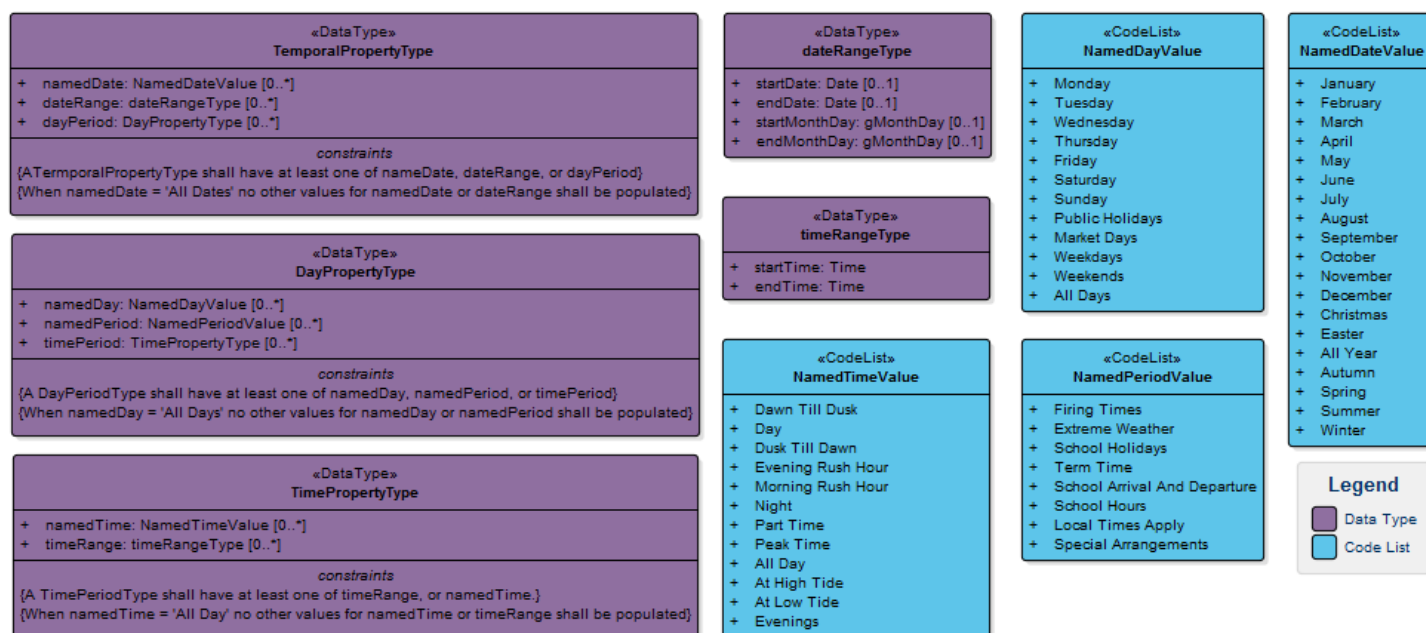| «DataType» timeRangeType	
Attribute: startTime	
Definition: The time the restriction begins	
Type: Time	**Multiplicity**: [1]
Attribute: endTime	
Definition: The time the restriction ends.	
Type: Time	**Multiplicity**: [1]

Figure 18 Temporal Property Structure

Code Lists

ChangeValue

The 'reasonForChange' attribute is used across all features found within the OS MasterMap Highways Network. The table below describes the codes which will be used to populate this field and the description for each code.

Code List: ChangeValue	
https://www.ordnancesurvey.co.uk/xml/codelists/ChangeTypeValue.xml	
Code	**Description**
New	New feature has been added.
Modified Geometry	The geometry of the feature has been altered
Modified Attributes	One or more attribute properties have been altered
Modified Geometry and Attributes	Geometry and attribution properties have been altered
End of Life	The feature has been removed from Ordnance Surveys master database. This value will only be used with Change Only Update orders.

FormOfWayValue

The PathLink feature is attributed with a "formOfWay" property with the data type of FormOfWayValue. The following table describes the codes used to populate this field.

Code List: FormOfWayValue	
http://www.ordnancesurvey.co.uk/xml/codelists/FormOfWayTypeValue.xml	
Code	**Description**
Track	An unmade way created by the passage of vehicles.
Canal Path	A path which runs alongside a canal.
Footbridge	A structure that is built over a river, railway, road or ravine to permit the flow of pedestrians of cyclists.

Path With Ford	A path where all or parts run through an area where a river or stream crosses.
Path	A made surface for use by pedestrians
Path With Steps	A made path that includes an area using a series of raised areas which links surfaces at different heights.
Subway	A structure that is built under a road to permit the flow of pedestrians of cyclists.
Path With Level Crossing	A made path that includes all or part where a railway line intersects with the path at the same level.

SurfaceTypeValue

The PathLink feature is attributed with a "surfaceType" with a data type of "SurfaceTypeValue". The table below describes the codes used to populate this field and the description for each code.

Code List: SurfaceTypeValue
http://www.os.uk/xml/codelists/highways/SurfaceTypeValue.xml

Value	Description
Made Sealed	A constructed surface, commonly mineral based, that consists of a solid material that is bonded (i.e. is not loose) such as asphalt or concrete.
Made Unknown	A constructed surface, commonly mineral based, that may be bonded or loose. This value is used where the revision method employed does not allow it to be differentiated into 'Made Sealed' or 'Made Unsealed'.
Made Unsealed	A constructed surface, commonly mineral based, that consists of an unbonded surface (i.e. the material is loose) such as gravel (including self-binding gravel), cinder or hoggin. Also used to describe surfaces that are bonded but have been employed as a mesh/grid or similar form; to allow vegetation to grow and water to drain through the surface.
Unmade	A surface that has not been constructed but has evolved through use by pedestrians, cyclists, horses being ridden or motorised vehicles and where the use has removed or minimised the natural vegetation and fully or partly exposed the underlying mineral surface and/or mud.

MatchStatusValue

The PathLink feature is attributed with a "matchStatus" with a data type of "MatchStatusValue". The table below describes the codes used to populate this field and the description for each code.

Code List: MatchStatusValue
http://www.ordnancesurvey.co.uk/xml/codelists/highways/MatchStatusValue.xml

Value	Description
Matched	The RoadLink has been matched with an Elementary Street Unit from the NSG.
No Match	The RoadLink has not been matched with an Elementary Street Unit from the NSG which has been accepted.
Not Matched Awaiting Review	The RoadLink has not been matched with an Elementary Street Unit from the NSG and is waiting to be manually reviewed to identify if there is an Elementary Street Unit it should have been matched too.

Matched With Attribute Discrepancy	The RoadLink has been matched with an Elementary Street Unit from the NSG and there is a discrepancy between the attribution supplied by the NSG and information from OS.

ProvenanceSourceValue

The PathLink and Street feature are attributed with a "provenance" property with the data type of ProvenanceSourceValue. The following table identifies the codes used to populate this field.

Code List: ProvenanceSourceValue
http://www.ordnancesurvey.co.uk/xml/codelists/highways/ProvenanceSourceValue.xml

Value	Description
Highways England	The source for the geometry of the feature is Highways England
Local Highway Authority	The source for the geometry of the feature is Local Highways Authority
Ordnance Survey	The source for the geometry of the feature is Ordnance Survey
Transport Scotland	The source for the geometry of the feature is Transport Scotland
Welsh Government	The source for the geometry of the feature is Welsh Government
OS Urban And OS Height	Data captured to 0.5m planimetric accuracy and elevation obtained from drape of OS detailed height content.
OS Rural And OS Height	Data captured to 1.1 planimetric accuracy and elevation obtained from drape of OS detailed height content.
OS Moorland And OS Height	Data captured to 4.1m planimetric accuracy and elevation obtained from drape of OS detailed height content.
OS Urban And Interpolated OS Height	Data captured to 0.5m planimetric accuracy and elevation interpolated from OS detailed height content and other OS data.
OS Rural And Interpolated OS Height	Data captured to 1.1m planimetric accuracy and elevation interpolated from OS detailed height content and other OS data.
OS Moorland And Interpolated OS Height	Data captured to 4.1m planimetric accuracy and elevation interpolated from OS detailed height content and other OS data.
OS Urban And Low Confidence OS Height	Data captured to 0.5m planimetric accuracy, elevation obtained from drape of OS detailed height content but expected to be low quality.
OS Rural And Low Confidence OS Height	Data captured to 1.1m planimetric accuracy, elevation obtained from drape of OS detailed height content but expected to be low quality.
OS Moorland And Low Confidence OS Height	Data captured to 4.1m planimetric accuracy, elevation obtained from drape of OS detailed height content but expected to be low quality.

CycleFacilityValue

The "CycleFacilityType" data type is attributed with a "cycleFacility" property with the data type of "CycleFacilityValue". The following table describes the codes used to populate this field.

This value is provided from the National Street Gazetteer and Ordnance Survey data collection. Currently only "Unknown Type Of Cycle Route Along Footway" is available for population. The other values are for future use.

Code List: CycleFacilityValue	
http://www.ordnancesurvey.co.uk/xml/codelists/CycleFacilityValue.xml	
Value	**Description**
Marking Segregated Cycle Route Along Footway	A cycle way along a path shared with other users with segregation indicated by markings.
Physically Segregated Cycle Route Along Footway	A cycle way along a path shared with other users with segregation physically enforced by kerbs, posts, barriers or similar.
Shared Use Cycle Route Along Footway	A cycle way along a path shared with other users without any segregation.
Unknown Type Of Cycle Route Along Footway	A cycle way along a footway where the detailed nature is not known.
Signed Cycle Route	A route identified for cyclists along roads that is signed but does not have any significant infrastructure along the road such as road markings or kerbs. For example, Sustrans routes along quiet roads

FormOfRoadNodeValue

The PathNode feature is attributed with a "formOfRoadNode" property with the data type of FormOfRoadNodeValue. The following table describes the codes used to populate this field.

The code list has been inherited from INSPIRE and is not extendable.

Code List: FormOfRoadNodeValue	
http://inspire.ec.europa.eu/codelist/FormOfRoadNodeValue/	
Code	**Description**
junction	Three or more road links intersect at the node.
pseudo node	Exactly two links connect to the node.
road end	Only one link connects to the node. It signifies the end of a path.

RoadNodeClassificationValue

The PathNode feature is attributed with a "classification" property with the data type of RoadNodeClassificationValue. The following table describes the codes used to populate this field.

Code List: RoadNodeClassificationValue	
Additional classification of the road node.	
For example, if a node represents a roundabout it may also be classified as a mini roundabout.	
http://www.ordnancesurvey.co.uk/xml/codelists/highways/RoadNodeClassificationValue.xml	
Code	**Description**
Grade Separation	A node which represents where there is a difference in physical level of the two links and in the real world they do not meet and split here.

OperationalStateValue

Street is attributed with an "operationalState" with a data type of "OperationalStateType". This data type has the attribute of 'state' with a data type of "OperationalStateValue". The table below describes the codes which will be used to populate this field and the description for each code.

Code List: OperationalStateValue	
http://www.ordnancesurvey.co.uk/xml/codelists/highways/OperationalStateValue.xml	
Code	**Description**
Prospective	Plans have been submitted for development but construction has not commenced.
Under Construction	Construction has commenced but the road cannot be used.
Open	Open
Temporarily Closed	The way has been temporarily closed for a specified reason under Road Traffic Regulation Act 1984 Section 14 1(b): • streetworks • likelihood of danger to public • Litter clearing or cleaning (duty imposed by section 89(1)(a) or (2) of the Environmental Protection Act 1990 (litter clearing and cleaning) to be discharged) *Note: The operationalState shall only be set to Temporarily Closed when the duration of the closure is intended to last more than 4 weeks.*
Permanently Closed	A Street that has been permanently blocked up according to a Stopping Up Order Constraint: If the Street operationalState = Permanently Closed then the endLifespanVersion shall be set.
Addressing Only	A street which has been created for addressing purposes of the Local Land and Property Gazetteer (LLPG).

StreetTypeValue

The Street feature is attributed with a "streetType" property with the data type of StreetTypeValue. The following table describes the codes used to populate this field.

Code List: StreetStateTypeValue	
http://www.ordnancesurvey.co.uk/xml/codelists/highways/StreetTypeValue.xml	
Code	**Description**
Designated Street Name	Officially named street
Officially Described Street	Officially Described Street
Numbered Street	Officially numbered street
Unofficial Street Name	Unofficial local name for a street
Street for addressing purposes only	A street which has been created for addressing purposes of the Local Land and Property Gazetteer (LLPG).

ConnectionTypeValue

The FerryTerminal feature is attributed with a "type" property with the data type of ConnectionTypeValue. The following table describes the codes used to populate this field.

The code list has been inherited from INSPIRE and is not extendable.

Code List: ConnectionTypeValue
Types of connections between different networks.
http://inspire.ec.europa.eu/codelist/ConnectionTypeValue

Code	Description
intermodal	Connection between two network elements in different transport networks that use a different transport mode. The connection represents a possibility for the transported media (people, goods, etc) to change from one transport mode to another.

FormOfWaterwayNodeValue

The FerryNode feature is attributed with a "formOfWaterwayNode" property with the data type of FormOfWaterwayNode Value. The following table describes the codes used to populate this field.

The code list has been inherited from INSPIRE and is not extendable.

Code List: FormOfWaterwayNode Value
Function of a Waterway Node in the water transport network.
http://inspire.ec.europa.eu/codelist/FormOfWaterwayNodeValue

Code	Description
water terminal	The location where goods are transhipped.

DedicationValue

The HighwayDedication feature has the field 'dedication' which has the value populated from 'DedicationValue'. The table below identifies the codes used to populate this field and a description for each code.

These codes conform to the legal categories of highway as defined in the Highway Act 1980 and Countryside and Rights of Way Act 2000, with the exception of "No Dedication Or Dedication Unknown".

Dedications indicate the legal access status for a given feature only, no indication as to its physical accessibility is made in this attribute.

Code List: DedicationValue
http://www.ordnancesurvey.co.uk/xml/codelists/highways/HighwayDedicationValue.xml

Code	Description
Byway Open To All Traffic	A Byway with rights for all vehicles
Pedestrian Way Or Footpath	A Way for pedestrians only. Also known as a Pedestrian Way or Walkway. Excludes Footway.
Cycle Track or Cycle Way	Cycle Track: A highway for cyclists and pedestrians which is maintainable at public expense. Cycle Way: Any Way designed for the use of cycles and from which other wheeled traffic is excluded.
All Vehicles	Highway open for all vehicles
Restricted Byway	Highway with rights for pedestrians, horse riders, cyclists and horse-drawn vehicles, but not for mechanically propelled vehicles.
Bridleway	A highway with rights of passage for pedestrians, cyclists and horse riders only.
Motorway	The commonest type of Special Road which is

	restricted to two classes of vehicles
No Dedication Or Dedication Unknown	A Highway Dedication type that is currently unknown and is still under investigation, or
	Has been proven to have no public rights of access

ReinstatementTypeValue

The Reinstatement feature type has the property 'reinstatementType' which has the type 'ReinstatementTypeValue'. The table below identifies the codes used to populate this field.

Code List: ReinstatementTypeValue Reinstatement as defined in the SROH codes of practice. http://www.os.uk/xml/codelists/highways/ReinstatementTypeValue.xml	
Codes	**Descriptions**
Carriageway Type 0	The carriageway has a limiting capacity between 30 and 125 Million Standard Axles
Carriageway Type 1	The carriageway has a limiting capacity between 10 and 30 Million Standard Axles
Carriageway Type 2	The carriageway has a limiting capacity between 2.5 and 10 Million Standard Axles
Carriageway Type 3	The carriageway has a limiting capacity between 0.5 and 2.5 Million Standard Axles
Carriageway Type 4	The carriageway has a limiting capacity up to 0.5 Million Standard Axles
Carriageway Type 6	The carriageway has a capacity over 125 Million Standard Axles
High Amenity Footway	Routes which have been constructed maintained and surfaced to a high standard.
High Duty Footway	Routes used by an exceptionally large number of pedestrians and/or cyclists
Other Footways	Neither high duty or high amenity.
No designation information held by Street Authority	There is no reinstatement information.

SpecialDesignationTypeValue

The SpecialDesignation feature has property field 'designationType' which has the type allocated from 'SpecialDesignationTypeValue'. The table below identifies the codes used to populate this field and a description for each code.

'SpecialDesignationTypeValue' coverage varies between LHAs and the individual codes. While coverage for statutory designations is good overall, coverage for some may be sporadic and inconsistent.

Code List: SpecialDesignationTypeValue Designation of highways that are subject to special controls when undertaking street or road works http://www.ordnancesurvey.co.uk/xml/codelists/highways/SpecialDesignationTypeValue.xml	
Code	**Description**
Protected Street	Statutory designation which restricts the placement of apparatus by a street or road works undertaker.
Special Engineering Difficulty	Statutory designation relating to streets or parts of streets associated with structures, or streets of extraordinary construction.
Traffic Sensitive Street	Statutory designation that restricts street works to be undertaken during period of high traffic.
Lane Rental	Indication that Street is part of a Lane Rental scheme. Section 74A of NRSWA enables highway authorities, with the approval of the Secretary of State, to charge street works undertakers a daily charge for each day during which their works

	occupy the highway – commonly referred to as "lane rental" schemes.
Event Information	Indication that this Street has an event planned.
Drainage And Flood Risk	Optional designation that provides details of areas that are susceptible to drainage and flood risk.
Emergency Services Routes	Optional designation that alerts the Works Promoter if there is a need to keep the emergency services informed of proposed works and progress
Environmentally Sensitive Areas	Optional designation that identifies information about the local environment. This includes environmentally sensitive areas, such as sites of specific scientific interest and ancient monuments, or specially cultivated areas containing shrubs, plants or bulbs which shall be reinstated using the same or similar species
HGV Approved Routes	Optional designation that allows Works Promoters to consider the impact on HGVs of restricted traffic flow or alerts the Works Promoter that wide vehicles are commonplace.
Level Crossing Safety Zone	Optional designation and mainly created by a Railway Operator. It identifies an area around a level crossing where, if occupied to carry out works, there is a risk of traffic obstructing the crossing.
Local Considerations	Optional designation that should be used to inform the Works Promoter of any special schemes that may impact working, for example noise levels.
Parking Bays And Restrictions	Optional designation that provides details of streets with parking meters, residents parking bays and parking restrictions such as yellow lines, red routes, and other permanent parking restrictions.
Pedestrian Crossings, Traffic Signals And Traffic Sensors	Optional designation that captures streets that have signalled controlled pedestrian crossings and permanent traffic signals or any Traffic Sensors in the highway.
Pipelines And Specialist Cables	Optional designation that is created by the Local Highway Authority on behalf of the private sector oil or gas pipeline owner. This designation should be treated as a reminder to consult further, not as an absolute indicator of the nature of the pipeline or cable.
Priority Lanes	Optional designation that allows the Local Highway Authority to identify the location of bus lanes, and Cycle Routes in the street.
Proposed Special Engineering Difficulty	Optional designation used to identify new streets or assets of extraordinary construction. One typical use is to identify the location of a designation during any consultation period. On conclusion of the consultation period this feature will typically become a 'Special Engineering Difficulty'.
Special Event	Optional designation that provides early awareness of special events to Work Promoters to enable them to consider any actions that they may need to take to avoid any works taking place on the street during the time(s) of the Special Event.
Speed Limits	Optional designation that provides information about the speed limit applicable for the street. Only speed limits (signed or as per the legal order) over 40mph are recorded as standard with some LHAs providing 30mph speed limits as well. This data is intended to be used for planning of traffic management and works safety measures.
Strategic Route	Optional designation that is used by Local Highway Authorities to identify Strategic Routes, such as the Primary Route Network. Strategic Routes are identified by the Highways Agency, TfL in London and the South Wales Trunk Road Agent (SWTRA) and North & Mid Wales Trunk Road Agent (NMWTRA) in Wales.
Street Lighting	Optional designation that helps Works Promoters to carry out works in the evenings and at nights by providing relevant information about Street lighting. It is particularly useful for when Part night lighting where a council has a policy of turning lights off during specific hours.

Streets Subject To Early Notification Of Immediate Activities	Optional designation that enables street authorities to designate streets that are particularly vulnerable to traffic. Work Promoters are required to provide early warning of activities to the authority immediately after the activity has commenced.
Structures	Optional designation used by asset owners to identify the existence of a structure that has not been designated as an SED. In cases where this identifies a Bridge, Works Promoters should regard it as a reminder that under Section 88 they must consult the Bridge Authority prior to serving Notices.
Transport Authority Critical Apparatus	Optional designation that provides details of transport authority apparatus critical to operations of that authority which if damaged or if interrupted could disrupt or temporarily stop services (for example HV cables to a rail network).
Unusual Traffic Layout	Optional designation that provides details of where the layout of existing traffic signs, road markings, studs or verge markers is not in accordance with the Traffic Signs Manual.
Winter Maintenance Route	Optional designation that helps determine the relative importance a route is given by a Local Highway Authority for clearing and treatment during the winter months.

Enumerations

MaintenanceValue

The Maintenance feature type has the property 'maintenanceResponsibility' which has the type 'MaintenanceValue'. The table below identifies the codes used to populate this field and a description for each code.

MaintenanceValue	
Code	**Description**
Maintainable At Public Expense	The highway is maintained at public expense by a responsible highways authority.
Prospectively Maintainable At Public Expense	An application has been submitted to maintain the highway at public expense.
Not maintained at public expense	The highway is not maintained at public expense.
Maintenance Responsibility Is To Another Highway Authority	A National Highway Authority or a Regional Highway Authority is responsible for maintaining the highway.
Street Outside Scope Of EToN	A Street which exists for National Land Property Gazetteer purposes only and is not identifiable as a street on the ground.

Chapter 4   How the product fits together?

OS MasterMap Highways Network – Paths is a relational product. This results in there being relationships between different feature types. This chapter summarises how the different feature types relate to one another and which attributes are the primary and foreign keys.

The below tables identifies how the feature types relate to one another and which attributes are the primary and foreign keys. This is also represented diagrammatically in Figure 19, the attribute at the arrow head is the primary key and the attribute at the base of the arrow is the foreign key.

| Source Feature Information		Destination Feature Information	
Feature Type	**Foreign Key Attribute**	**Feature Type**	**Primary Key Attribute**
PathLink	startNode	PathNode	id
PathLink	endNode	PathNode	id
PathLink	relatedRoadArea	TopographicArea	TOID
PathLink	formsPartOf	Path	id
PathLink	formsPartOf	Street	id
ConnectingLink	pathNode	PathNode	id
ConnectingLink	connectingNode	ConnectingNode	id
ConnectingNode	roadLink	RoadLink	id
Path	link	PathLink	id
Street	link	PathLink	id
FerryTerminal	element	PathNode	id
FerryTerminal	element	FerryNode	id
FerryTerminal	refToFunctionalSite	FunctionalSite	id
FerryLink	startNode	FerryNode	id
FerryLink	endNode	FerryNode	id
Maintenance	element	Street	id
Reinstatement	element	Street	id
SpecialDesignation	element	Street	id
HighwayDedication	element	Street	id
HighwayDedication	element	RoadLink	id
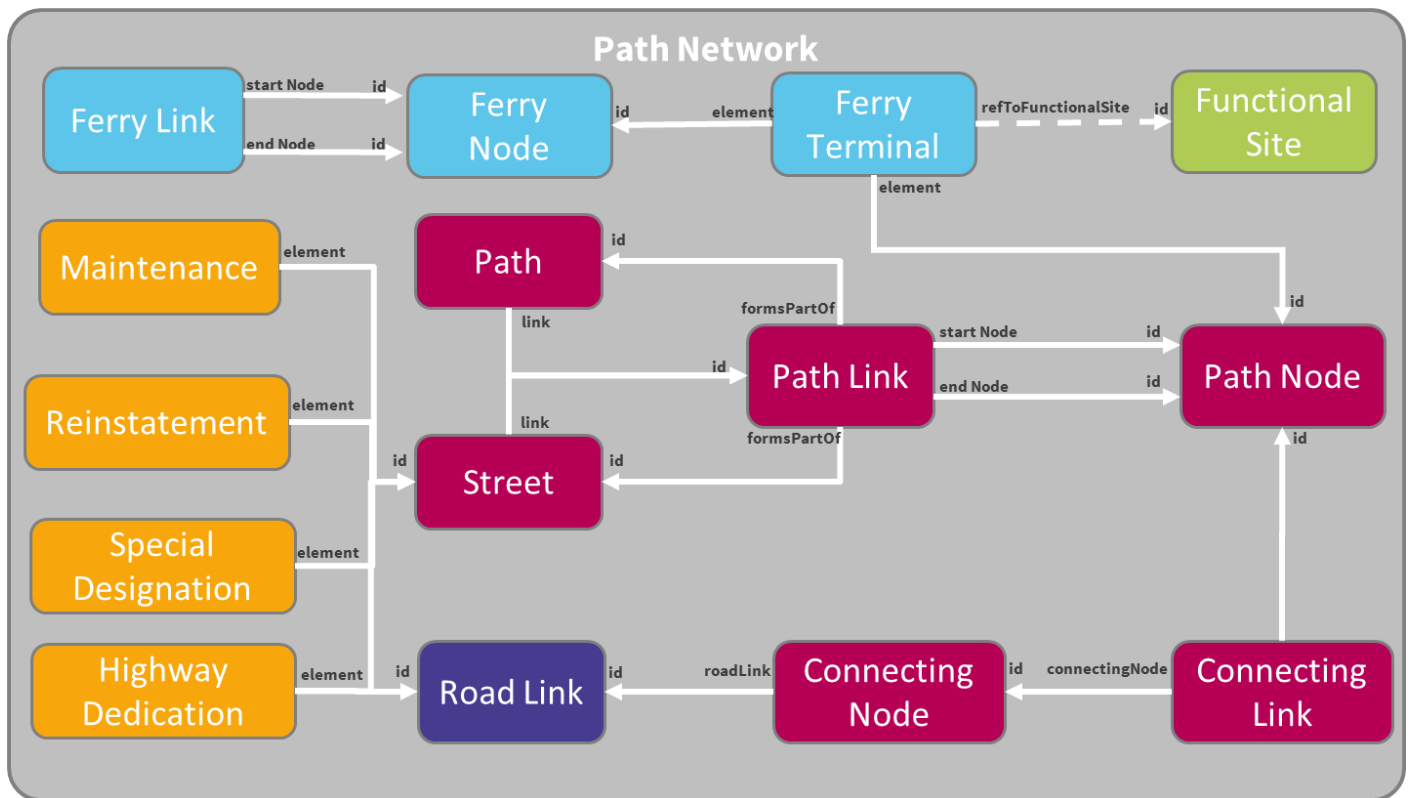
Figure 19: OS MasterMap Highways Network - Paths relational model. Base of the arrow is the foreign key attribute and the arrow head is the primary key attribute.

Chapter 5   Change Only Update (COU)

The OS MasterMap Highways Network – Roads can be ordered as either Full Supply or Change Only Update. The GML structure for Full Supply and COU are different. The differences are fundamentally the open and closing tags which will have an impact on how you choose to load the product. Examples of the different opening and closing tags can be found in Annex B. If a customer wishes to move their order from Full Supply to COU then they will need to receive an initial supply and apply the COU file to an initial supply. The COU should not be applied to a Full Supply order.

Full Supply

When an order for Full Supply is placed, the product will contain all features for the customer's area of interest. When a product refresh is ordered, for this type of order, the supply will contain all the features for the area of interest which will include features that have not changed. This supply mechanism will not explicitly identify which features are new, have been modified or have been removed. This can still be identified by querying the reasonForChange and the beginLifespanVersion attribute.

Change Only Update supply

When an order is placed for COU the first ordere received will be an initial supply. Initial supply refers to the first order that a customer takes of OS MasterMap Highways Network under the COU order type. An initial supply contains all features for the complete area covered by the order, and every feature will be an "insert". Updates, which contain the latest changes to the features are automatically sent out.

Following the initial order, a COU will be supplied, at the selected update schedule of the customer. COU only contains new features, new versions of features and information about deleted features. A feature can be deleted from the customer's holdings for two reasons; the feature has been deleted and the id will no longer exist in the product or the feature has moved outside of the customer's area of interest but still exists in the national product and therefore could be reinstated in a customer's holdings. To identify the difference between the two deletes the reasonForChange can be used. If the value is "end of life" then this feature has been permanently deleted whilst any other change value would indicate the feature has moved outside of the holdings and could be reinstated in future. Any feature within the area of interest that has not undergone any change will not be supplied.

The features within the initial supply and COU are provided as transactions. A transaction identifies if the feature is new, modified or removed from the product. The three types of transactions are:

1. <os:insert>
    These are features which have been newly inserted into the product or the customer's area of interest since the last product supply.

2. <os:replace>
    These are features which have had either a geometry change or an attribute change since the last product supply. The whole feature will be supplied, not just the changed attributes. The recommended action would be to completely replace the feature which currently exists in the customer's holdings.

3. <os:delete>
    These are features which have ceased to exist in the last product release or have moved out of the customer's area of interest. Features which have been deleted will be supplied with the entire feature's attribution. These features should be removed from the customers live data holding.

The initial supply will contain an insert transaction for all features in the customer's holdings. The following COU supplies will have insert and replace transactions in one GML file and deleted features will be supplied in a separate file. Where a delete file has been supplied, this must be loaded before the file containing inserted and replaced features. There are examples in Annex B of the different types of transactions.

Chapter 6   Supply format

The OS MasterMap Highways Network product is supplied in GML version 3.2.1. This chapter describes how OS MasterMap Highways Network is defined in GML. An understanding of XML (Extensible Mark-up Language) and XML schema is required.

GML

GML is an XML grammar for expressing geographic features. GML serves as a modelling language for geographic systems as well as an open interchange format for geographic transactions on the Internet. More information can be found on the Open Geospatial Consortium (OGC®).
http://www.opengeospatial.org/standards/gml

The XML specifications that GML is based on are available from the World Wide Web Consortium (W3C): http://www.w3.org.

Information about Unicode and UTF-8, the character encoding we have chosen, is available on the Unicode Consortium website: http://www.unicode.org.

Schema overview and location

XML schemas are used to define and validate the format and content of GML. The GML 3.2 specification provides a set of schemas that define the GML feature constructs and geometric types. These are designed to be used as a basis for building application-specific schemas, which define the data content.

The Path Network uses the following application schemas; **LinearHighwayNetwork.xsd, HighwaysWaterTransportNetwork.xsd, RoutingAndAssetManagement.xsd and OSProducts.xsd** which are referenced by the data. The LinearHighwaysNetwork.xsd defines the features which make up the Path Network. Therefore, it imports the INSPIRE transport network road application schema. The HighwaysWaterTransportNetwork.xsd defines the features which make up the Ferry Network. Therefore, it imports the INSPIRE transport network water application schema. The RoutingAndAssetManagement.xsd defines the asset management features of the Path Network. Through the INSPIRE schemas both the **LinearHighwayNetwork.xsd HighwaysWaterTransportNetwork.xsd and the RoutingAndAssetManagement.xsd** import the GML 3.2 schemas. These in turn import schemas produced by the W3C, which are available from the W3C website at http://www.w3.org/XML/1998/namespace.html. The OSProducts.xsd defines the feature collection and feature members. In addition, this application schema will define the transactions used for a Change Only Update supply.

The Linear Highway Network schema document defines the http://namespaces.os.uk/mastermap/highwayNetwork/2.0 namespace, this is defined in the XSD at: http://www.os.uk/xml/schema/highwaysnetwork/2.0/linearhighwaynetwork.xsd. The Highways Water Transport Network schema document defines the http://namespaces.os.uk/mastermap/highwaysWaterTransportNetwork/1.0 namespace, this is defined in the XSD at: https://www.os.uk/xml/schema/highwaysnetwork/1.0/HighwaysWaterTransportNetwork.xsd. The Routing and Asset Management schema document defines the http://namespaces.os.uk/mastermap/routingAndAssetManagement/2.1   namespace, this is defined in the XSD at: http://www.os.uk/xml/schema/highwaysnetwork/2.1/RoutingAndAssetManagement.xsd
The Highways Dedication schema document defines the http://namespaces.os.uk/mastermap/highwayDedication/1.0 namespace, this is defined in the XSD at: https://www.ordnancesurvey.co.uk/xml/schema/highwaysnetwork/1.0/HighwayDedication.xsd

The application schema uses the following XML namespaces, for which definitions are available as given here:

Prefix	Namespace identifier	Definition available at
gml	http://www.opengis.net/gml	http://schemas.opengis.net/gml/3.2.1/gml.xsd
xsi	http://www.w3.org/2001/XMLSchema–instance	Built in to XML http://www.w3.org/TR/xmlschema-1/

xlink	http://www.w3.org/1999/xlink	http://www.w3.org/1999/xlink.xsd
net	http://inspire.ec.europa.eu/schemas/net/4.0	http://inspire.ec.europa.eu/schemas/net/4.0/Network.xsd
tn	http://inspire.ec.europa.eu/schemas/tn/4.0	http://inspire.ec.europa.eu/schemas/tn/4.0/CommonTransportElements.xsd
tn-ro	http://inspire.ec.europa.eu/schemas/tn-ro/4.0	http://inspire.ec.europa.eu/schemas/tn-ro/4.0/RoadTransportNetwork.xsd
tn-w	http://inspire.ec.europa.eu/schemas/tn-w/4.0	http://inspire.ec.europa.eu/schemas/tn-w/4.0/WaterTransportNetwork.xsd
os	http://namespaces.os.uk/product/1.0	http://www.ordnancesurvey.co.uk/xml/schema/product/1.0/OSProduct.xsd
network	http://namespaces.os.uk/mastermap/generalNetwork/2.0	https://www.ordnancesurvey.co.uk/xml/schema/network/2.0/generalNetwork.xsd
highway	http://namespaces.os.uk/mastermap/highwayNetwork/2.0	http://www.os.uk/xml/schema/highwaysnetwork/2.0/LinearHighwayNetwork.xsd
ram	http://namespaces.os.uk/mastermap/routingAndAssetManagement/2.1	http://www.os.uk/xml/schema/highwaysnetwork/2.1/RoutingAndAssetManagement.xsd
hwtn	http://namespaces.os.uk/mastermap/highwaysWaterTransportNetwork/1.0	http://www.os.uk/xml/schema/highwaysnetwork/v1/HighwaysWaterTransportNetwork.xsd
dedication	http://namespaces.os.uk/mastermap/highwayDedication/1.0	https://www.ordnancesurvey.co.uk/xml/schema/highwaysnetwork/1.0/HighwayDedication.xsd

Annexe A   Product and service performance report form

Ordnance Survey welcomes feedback from its customers about OS MasterMap Highways Network

If you would like to share your thoughts with us, please print a copy of this form and when completed post or fax it to the address below.

Your name: ....

Organisation: ....

Address: ....

....

....

Postcode: ....

Phone: ....

Fax: ....

Email: ....

Quotation or order reference: ....

Please record your comments or feedback in the space below. We will acknowledge receipt of your form within three (3) working days and provide you with a full reply or a status report within 21 working days.

If you are posting this form, please send it to:

OS MasterMap Highways Network, Product Manager, Ordnance Survey, Adanac Drive, SOUTHAMPTON, SO16 0AS.

If you wish to return it by fax, please dial 023 8005 6159.

Any personal information that you supply with this report form will be used by Ordnance Survey only in the improvement of its products and services. It will not be made available to third parties.

Annexe B   GML Examples

Examples of the different GML structure for Full Supply orders and Change Only Update orders and the transactions within.

Full Supply

An example of the Full Supply GML including the opening and closing tags.

<os:FeatureCollection>

<os:FeatureMember>

```
<highway:RoadNode gml:id="osgb5000005193042483">
 <gml:identifier codeSpace="http://inspire.jrc.ec.europa.eu/ids">http://data.os.uk/id/5000005193042483</gml:identifier>
<net:beginLifespanVersion>2017-01-13T00:00:00.000</net:beginLifespanVersion>
<net:inspireId>
    <base:Identifier>
     <base:localId>5000005193042483</base:localId>
     <base:namespace>http://data.os.uk/</base:namespace>
    </base:Identifier>
   </net:inspireId>
   <net:inNetwork xlink:href="#OSHighwayNetwork"/>
   <net:geometry>
    <gml:Point srsName="urn:ogc:def:crs:EPSG::27700" gml:id="LOCAL_ID_6">
     <gml:pos>611319.332 231278.275</gml:pos>
    </gml:Point>
   </net:geometry>
   <tn:validFrom nilReason="unknown" xsi:nil="true"/>
   <tn-ro:formOfRoadNode xlink:title="junction" xlink:href="http://inspire.ec.europa.eu/codelist/FormOfRoadNodeValue/junction"/>
   <highway:reasonForChange codeSpace="http://www.os.uk/xml/codelists/ChangeTypeValue.xml">New</highway:reasonForChange>
   <highway:relatedRoadArea xlink:href="#osgb5000005193041468"/>
  </highway:RoadNode>
```

</os:FeatureMember >

</os:FeatureCollection >

Change Only Update

An example of the Change Only Update GML including opening and closing tags and the different types of transactions.

<os:Transaction>

<os:insert>

```
<highway:RoadNode gml:id="osgb5000005193042483">
    <gml:identifier codeSpace="http://inspire.jrc.ec.europa.eu/ids">http://data.os.uk/id/5000005193042483</gml:identifier>
    <net:beginLifespanVersion>2017-01-13T00:00:00.000</net:beginLifespanVersion>
    <net:inspireId>
     <base:Identifier>
      <base:localId>5000005193042483</base:localId>
```

```
        <base:namespace>http://data.os.uk/</base:namespace>

      </base:Identifier>

    </net:inspireId>

    <net:inNetwork xlink:href="#OSHighwayNetwork"/>

    <net:geometry>

      <gml:Point srsName="urn:ogc:def:crs:EPSG::27700" gml:id="LOCAL_ID_6">

        <gml:pos>611319.332 231278.275</gml:pos>

      </gml:Point>

    </net:geometry>

    <tn:validFrom nilReason="unknown" xsi:nil="true"/>

    <tn-ro:formOfRoadNode xlink:title="junction" xlink:href="http://inspire.ec.europa.eu/codelist/FormOfRoadNodeValue/junction"/>

    <highway:reasonForChange codeSpace="http://www.os.uk/xml/codelists/ChangeTypeValue.xml">New</highway:reasonForChange>

    <highway:relatedRoadArea xlink:href="#osgb5000005193041468"/>

  </highway:RoadNode>
```

</os:insert>

<os:replace>

```
<highway:RoadNode gml:id="osgb4000000003855390">

    <gml:identifier codeSpace="http://inspire.jrc.ec.europa.eu/ids">http://data.os.uk/id/4000000003855390</gml:identifier>

    <net:beginLifespanVersion>2016-08-21T00:00:00.000</net:beginLifespanVersion>

    <net:inspireId>

      <base:Identifier>

        <base:localId>4000000003855390</base:localId>

        <base:namespace>http://data.os.uk/</base:namespace>

      </base:Identifier>

    </net:inspireId>

    <net:inNetwork xlink:href="#OSHighwayNetwork"/>

    <net:geometry>

      <gml:Point srsName="urn:ogc:def:crs:EPSG::27700" gml:id="LOCAL_ID_2497055">

        <gml:pos>398309.376 865124.714</gml:pos>

      </gml:Point>

    </net:geometry>

    <tn:validFrom nilReason="unknown" xsi:nil="true"/>

    <tn-ro:formOfRoadNode xlink:title="junction" xlink:href="http://inspire.ec.europa.eu/codelist/FormOfRoadNodeValue/junction"/>

    <highway:reasonForChange codeSpace="http://www.os.uk/xml/codelists/ChangeTypeValue.xml">New</highway:reasonForChange>

    <highway:relatedRoadArea xlink:href="#osgb1000002063990526"/>

  </highway:RoadNode>
```

</os:replace>

<os:delete>

```
<highway:RoadNode gml:id="osgb4000000003334901">

    <gml:identifier codeSpace="http://inspire.jrc.ec.europa.eu/ids">http://data.os.uk/id/4000000003334901</gml:identifier>

    <net:beginLifespanVersion>2017-01-13T00:00:00.000</net:beginLifespanVersion>

    <net:inspireId>

      <base:Identifier>

        <base:localId>4000000003334901</base:localId>
```

```
          <base:namespace>http://data.os.uk/</base:namespace>

        </base:Identifier>

      </net:inspireId>

      <net:endLifespanVersion>2017-01-13T00:00:00.000</net:endLifespanVersion>

      <net:inNetwork xlink:href="#OSHighwayNetwork"/>

      <net:geometry>

       <gml:Point srsName="urn:ogc:def:crs:EPSG::27700" gml:id="LOCAL_ID_0">

         <gml:pos>215328.243 943956.030</gml:pos>

       </gml:Point>

      </net:geometry>

      <tn:validFrom nilReason="unknown" xsi:nil="true"/>

      <tn-ro:formOfRoadNode xlink:title="road end" xlink:href="http://inspire.ec.europa.eu/codelist/FormOfRoadNodeValue/roadEnd"/>

      <highway:reasonForChange codeSpace="http://www.os.uk/xml/codelists/ChangeTypeValue.xml">End Of Life</highway:reasonForChange>

      <highway:relatedRoadArea xlink:href="#osgb9999"/>

    </highway:RoadNode>

</os:delete>

<os:delete>

<highway:RoadNode gml:id="osgb4000000003336706">

    <gml:identifier codeSpace="http://inspire.jrc.ec.europa.eu/ids">http://data.os.uk/id/4000000003336706</gml:identifier>

    <net:beginLifespanVersion>2017-02-17T00:00:00.000</net:beginLifespanVersion>

    <net:inspireId>

     <base:Identifier>

       <base:localId>4000000003336706</base:localId>

       <base:namespace>http://data.os.uk/</base:namespace>

     </base:Identifier>

    </net:inspireId>

    <net:endLifespanVersion>2017-02-17T00:00:00.000</net:endLifespanVersion>

    <net:inNetwork xlink:href="#OSHighwayNetwork"/>

    <net:geometry>

     <gml:Point srsName="urn:ogc:def:crs:EPSG::27700" gml:id="LOCAL_ID_16">

       <gml:pos>287295.241 935655.346</gml:pos>

     </gml:Point>

    </net:geometry>

    <tn:validFrom nilReason="unknown" xsi:nil="true"/>

    <tn-ro:formOfRoadNode xlink:title="junction" xlink:href="http://inspire.ec.europa.eu/codelist/FormOfRoadNodeValue/junction"/>

    <highway:reasonForChange codeSpace="http://www.os.uk/xml/codelists/ChangeTypeValue.xml">Modified
Geometry</highway:reasonForChange>

    <highway:relatedRoadArea xlink:href="#osgb1000000288453345"/>

  </highway:RoadNode>

</os:delete>

</os:Transaction>
```
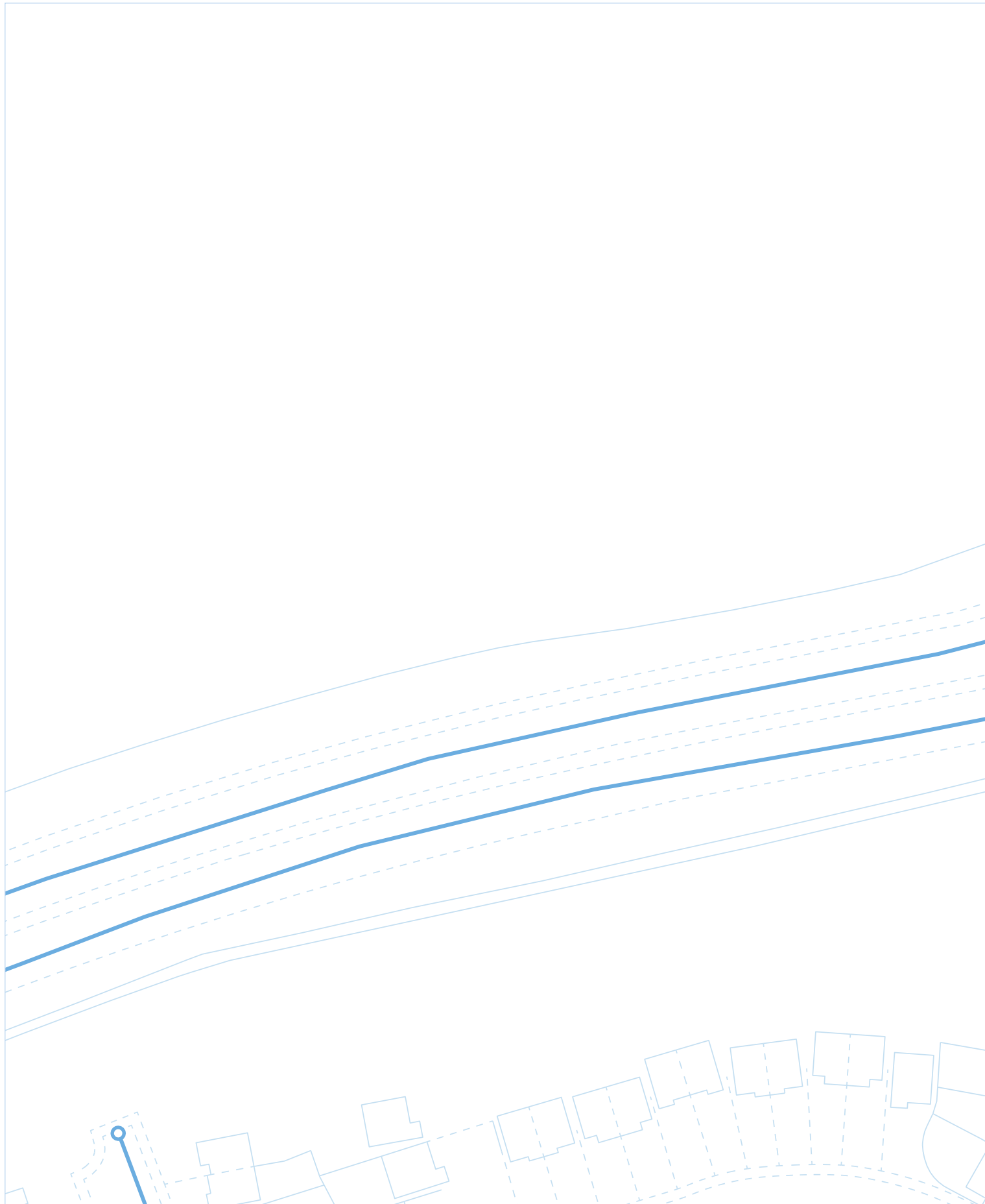
D03300_61